Feasibility Study

for the

GIZ GCF Funding Proposal

"Scaling up the Implementation of the Lao PDR Emission Reductions Programme through improved governance and sustainable forest landscape management (Project 2)"

As of July 2022

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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Abbreviations

ADB	Asian Development Bank
AE	Accredited Entity
AMA	Accreditation Master Agreement
BAU	Business-as-usual
BMU	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
BMZ	Federal Ministry for Economic Cooperation and Development
CO_2eq	Carbon dioxide equivalent (referring to GHG emissions)
DAFO	District Agriculture and Forestry Office
DOF	Department of Forestry
EE	Executing Entity
ER-PD	Emission Reductions Programme Document
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management plan
ESS	Environmental and social Safeguards
EU	European Union
EUR	Euro
FIPD	Forest Inventory and Planning Division
FLEGT	Forest Law Enforcement, Governance and Trade
FP	Funding Proposal
FPIC	Free, Prior and Informed Consent
FS	Feasibility study
GA	Gender Assessment
GAP	Gender Action Plan
GCF	Green Climate Fund
GDP	Gross domestic product
GHG	Greenhouse gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GoL	Government of Lao PDR
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal rate of return
LDC	Least Developed Country
M&E	Monitoring and Evaluation
MAF	Ministry of Agriculture and Forestry
MoNRE	Ministry of Natural Resources and the Environment
MPI	Ministry of Planning and Investment
MRV	Measuring, reporting and verification
MTR	Mid-term review
MW	Megawatt
MWh	Megawatt-hour
NDC	Nationally Determined Contribution
NGO	Non-governmental Organization
NPA	National Protected Area
NPMU	National Project Management Unit
NRS	National REDD+ Strategy
O&M	Operation and Maintenance
PAFO	Provincial Agriculture and Forestry Office
PPMU	Provincial Project Management Units
PRAP	Provincial REDD+ Action Plan
PSAP	Promotion of Sustainable (climate resilient and deforestation-free) Agricultural Practices

SDG	Sustainable Development Goal
SEDP	Socio-economic Development Plan
TSC	Technical Service Centre
UN	United Nations
USD	US Dollar
VDF	Village Development Fund
VFAG	Village Forest and Agriculture Grant

Executive Summary

Lao Peoples Democratic Republic (PDR) is a landlocked Least Developed Country (LLDC) where the economy is dependent on natural resources, especially forestry, agriculture, mining, and electricity generation (especially hydropower). Agriculture, forestry and fisheries account for close to 16% of gross domestic product (GDP) and employ 64% of the Lao workforce (World Bank. , No Date). Forests are among the most important economic sectors, providing income, a source of nutrition, and livelihoods for the rural population, particularly for the rural poor.

Northern Lao PDR is particularly at risk of climate change due to its high exposure, low capacities, and high sensitivity. This region is among the poorest in the country, and villagers in the region are largely dependent on rainfed upland agriculture to maintain their livelihoods. The mountainous terrain is highly sensitive to climate change due to its sloped terrain, which is naturally prone to erosion events and landslides. At the same time, high rates of deforestation and forest degradation further exacerbate the northern regions' vulnerability to climate change. Six provinces in Northern Lao PDR (Bokeo, Houaphan, Luang Prabang, Luang Namtha, Sayabouri and Oudomxay) experienced more than 40% of the country's deforestation and forest degradation during the period from 2005-2015.[1] Deforestation and forest degradation exacerbate the risk of climate-related natural hazards (drought, flooding, forest-fires), and reduce the provision of key ecosystem services that could otherwise strengthen the coping capacity of local ecosystems and the persons that depend on them.

Deforestation and forest degradation also contribute to increases in global emissions. Overall, the agriculture, forestry and other land use (AFOLU) sector in Lao PDR is critical for the country's mitigation efforts, as it is responsible for 78% of all emissions in the country. Lao PDR has embraced REDD+ to address its principal source of greenhouse gas (GHG) emissions. Lao PDR has been a partner country in the Forest Carbon Partnership Facility (FCPF) since 2008. Its Emission Reductions Programme Document (ER-PD) was accepted into the FCPF Carbon Fund in June 2018[1] and an Emission Reductions Payment Agreement (ERPA) was signed in December 2020 for 8.4 million tCO_2eq and up to USD 42 million in results-based payments.[2] However, the ER-PD clearly highlights the needs for additional financial and technical support to implement measures and support the country to achieve emission reductions.

Overview of the overarching programme

This project is embedded in the overarching programme 'Implementation of the Lao PDR Emission Reductions Programme through improved governance and sustainable forest landscape management' (Funding Proposal (FP) 117), which was approved by the Green Climate Fund (GCF) Board at its 24th board meeting (B.24) in 2019.[3] The objective of the overarching programme is to support the Government and people of Lao PDR transition to sustainable and climate resilient management of forests and landscapes at scale. This will reduce approximately 11.7 million tCO_2eq and directly increase the resilience of more than 273,700 villagers and 2,112,000 ha of ecosystems over the 7-year implementation period of Projects 1 and 2. The programme contributes to the successful implementation of the Lao PDR Emission Reductions Programme (ER-Programme) under the FCPF in the aforementioned six provinces covered by the ER-PD.

[1] For more information refer to: https://www.forestcarbonpartnership.org/carbon-fund-eighteenth-cf18-june-20-22-2018-paris.

[2] For more information refer to: Carbon Fund of the Forest Carbon Fund Partnership Facility – Emission Reductions Payment Agreement – Promoting REDD+ through Governance, Forest Landscapes and Livelihoods in Northern Lao PDR Programme.

[3] "*The programme consists of 3 projects: Project 1 (mid-2020 to mid-2024) addresses the three provinces of Houaphan, Sayabouri and Luang Prabang, which contain the highest rates of deforestation and forest degradation within the programme area; Project 2 (mid-2024 to end-2029) scales-up the number of participating communities in the same geographical area; and Project 3 (2022 to end-2029) extends the geographical reach of the programme to the 3 additional provinces of Luang Namtha, Bokeo and Oudomxay*." (GCF FP 117, page 3).

Initially, FP117 was conceptualized as a pure mitigation single project which had to be reframed as a programme, with 3 Sub-Projects due to a limitation in available GCF funds at the time of board approval. FP117[4] explicitly outlined a programmatic approach with Project 1[5] covering 3 out of 6 provinces of the Lao ER-Programme (Houaphan, Luang Prabang and Sayabouri), and the subsequent Sub-Projects 2 and 3 (hereafter Project 2) expanding the programme intervention area to all 6 provinces covered by the ER-Programme to fully reach the envisioned transformational change of forest and land management in the uplands of the Lao PDR.[6]

Project 1 (FP117) laid the ground for the transformational change in the project area, including supporting policy mainstreaming, strengthening the regulatory framework, and implementing and improving the measurement, reporting and verification (MRV) system, among others. It also supported interventions on the ground in 3 provinces, namely: Houaphan, Sayabouri and Luang Prabang. However, to fully reach the paradigm shift towards low-emission and climate resilient forest and land use practices outlined in the programmatic approach within FP 117, additional financial and technical support is needed.

Overview of Project 2

Project 2 aims to further advance and consolidate the programme's objective of supporting the Government and people of Lao PDR transition to sustainable and climate resilient management of forests and landscapes at scale. Project 2 is comprised of three components (see Figure 1 below):[7]

- Component 1 addresses barriers at the national and sub-national levels, including measures that aim to scale-up climate-informed participatory land use planning, strengthen land tenure security, improve forest law enforcement and monitoring, and scale-up and ensure access to sustainable financing for the AFOLU sector.
- Component 2 builds on the enabling environment (Component 1), and addresses key drivers of deforestation and degradation within the agricultural sector. It delivers emission reductions at scale through reducing the expansion of agricultural activities into forested landscapes, and promotes climate resilient agricultural practices that increase the resilience of local farmers and agroecosystems.
- Component 3 builds on the enabling environment (Component 1),[8] and will reduce emissions and strengthen the resilience of local livelihoods and forest ecosystems through sustainable forest landscape management and the promotion of Forest Landscape Restoration (FLR), with a focus on village and conservation forests.[9]

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[4] The full proposal is available on the GCF website: https://www.greenclimate.fund/project/fp117.

[5] Project 1 which was approved under FP 117 reached effectiveness on 19th May 2020. Since then, the Project has made significant progress. More details on the specific progress can be found under the Annual Performance Report (APR) in Annex 18.

[6] The following excerpt is from FP 117's Programme-level Executive Summary: *"This Funding Proposal presents a stand-alone GCF project (Project 1) for Board approval. Two subsequent stand-alone projects, embedded in the same programmatic context and theory of change as this project, will be submitted at a future date for Board approval. Board approval for the project presented in this Funding Proposal is wholly separate from, and does not pre-judge, Board approval for future related projects."*

[7] Note: Project 1 used the term 'outputs' instead of components. In order to ensure alignment with the GCF Integrated Results Management Framework and new Funding Proposal Template, the term 'component' is applied under Project 2. Outputs under GCF's IRMF are "Changes delivered as a result of project/programme activities that contribute to the achievement of outcomes." – GCF. 2022. Guidance Note to support the completion of the IRMF elements of the revised funding proposal template for PAP and SAP, p. ii.

[8] Specifically, Activities under Component 3 that are subject to Component 1 deliverables are:

For Activity 3.1: Village Forest and Agriculture Grants (VFAG) must be in place after Village Forest Management (VFM) planning is concluded, to provide funds for the implementation of annual plans; Land use planning and improved tenure security – Land Use Plans have to be in place as a precondition for VFM, ensuring full compliance with the project's Environmental and Social Management Plan (ESMP), Ethnic Group Development Plan and Gender Action Plan. Free, prior and informed consent (FPIC) is required, where the procedures are outlined in detail within the ESMP presented as in Annex 6b to the funding proposal.

For Activity 3.2: Identification of existing and/or establishment of new VFAGs to channel climate finance to target villages – VFAGs must be in place after National Protected Area (NPA) management planning is concluded, to provide funds for the implementation of annual plans. Again, full compliance with the ESMP and FPIC procedures are required.

[9] Conservation forests will focus on 5 national protected areas (NPAs) and 1 national park within the project area.

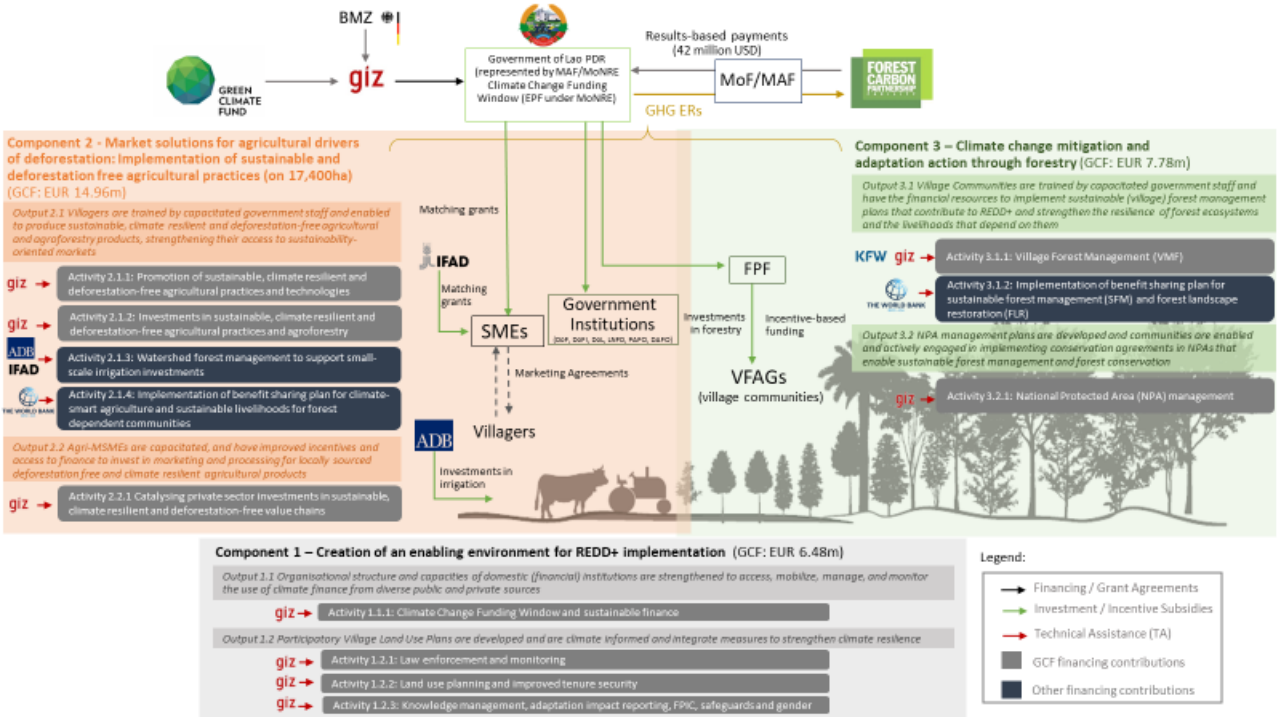


Figure 1. Overview of Project 2 components and activities

Project 2 is complementary and additional to Project 1. Together both projects will facilitate a paradigm shift in the forestry and land use sector in Lao PDR that will be sustained by unlocking additional sources of results-based payments, as well as public and private finance managed through national funds and institutions with strengthened capacities for mobilizing and channelling climate finance. Project 2 has been re-designed as a cross-cutting intervention, strengthening synergies between REDD+ and activities that build the resilience of ecosystems and local rural livelihoods, in full alignment with Lao PDR's latest Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (2021) and the country's draft Climate Change Strategy (2021). It will scale up investments in climate-resilient and deforestation-free agriculture and forestry practices across six provinces, building on the strengthened regulatory framework and utilizing the tools and guidelines developed under Project 1.

Project 2 is anticipated to result in emission reductions of approximately 4.6 million tCO_2eq over its 4-year implementation period and strengthen the resilience of over 273,700 direct beneficiaries and 2,112,000 ha of ecosystems.It will further generate additional environmental, social and economic benefits that contribute to Lao PDR's national Green Growth Strategy to 2030, and the country's recovery from the COVID-19 pandemic.

1. Background on programmatic approach

This section provides background information on the project structure and the link of this project to the Green Climate Fund (GCF) Funding Proposal (FP) 117 “Implementation of the Lao PDR Emission Reductions Programme through improved governance and sustainable forest landscape management.”

The Programme “Implementation of the Lao PDR Emission Reductions Programme through improved governance and sustainable forest landscape management” (FP117) was approved by the Green Climate Fund in 2019 at B.24. Initially, FP117 was conceptualized as a pure mitigation single project which had to be reframed as a programme, with 3 Sub-Projects due to limited funding available. GCF Funding Proposal 117[10] explicitly outlined a programmatic approach with Project 1[11] covering 3 out of 6 provinces of the Lao Emission Reductions Programme (ER-Programme) under the Forest Carbon Partnership Facility (FCPF) and the subsequent Sub-Projects 2 and 3 to expand the programme intervention area the remaining 3 provinces (approx. 240 villages) covered by the ER-Programme, as well as 50 additional villages in the current project location.[12] Sub-projects 2 and 3 were merged into a single sub-project (henceforth Project 2).

[10] https://www.greenclimate.fund/project/fp117.

[11] Project 1 which was approved under FP 117 reached effectiveness on 19th May 2020. Since then, the Project has made significant progress. More details on the specific progress can be found under the Annual Performance Report (APR) in Annex 18.

[12] “*The programme consists of 3 projects: Project 1 (mid-2020 to mid-2024) addresses the three provinces of Houaphan, Sayabouri and Luang Prabang, which contain the highest rates of deforestation and forest degradation within the programme area; Project 2 (mid-2024 to end-2029) scales-up the number of participating communities in the same geographical area; and Project 3 (2022 to end-2029) extends the geographical reach of the programme to the 3 additional provinces of Luang Namtha, Bokeo and Oudomxay*.” (GCF FP 117, page 3).

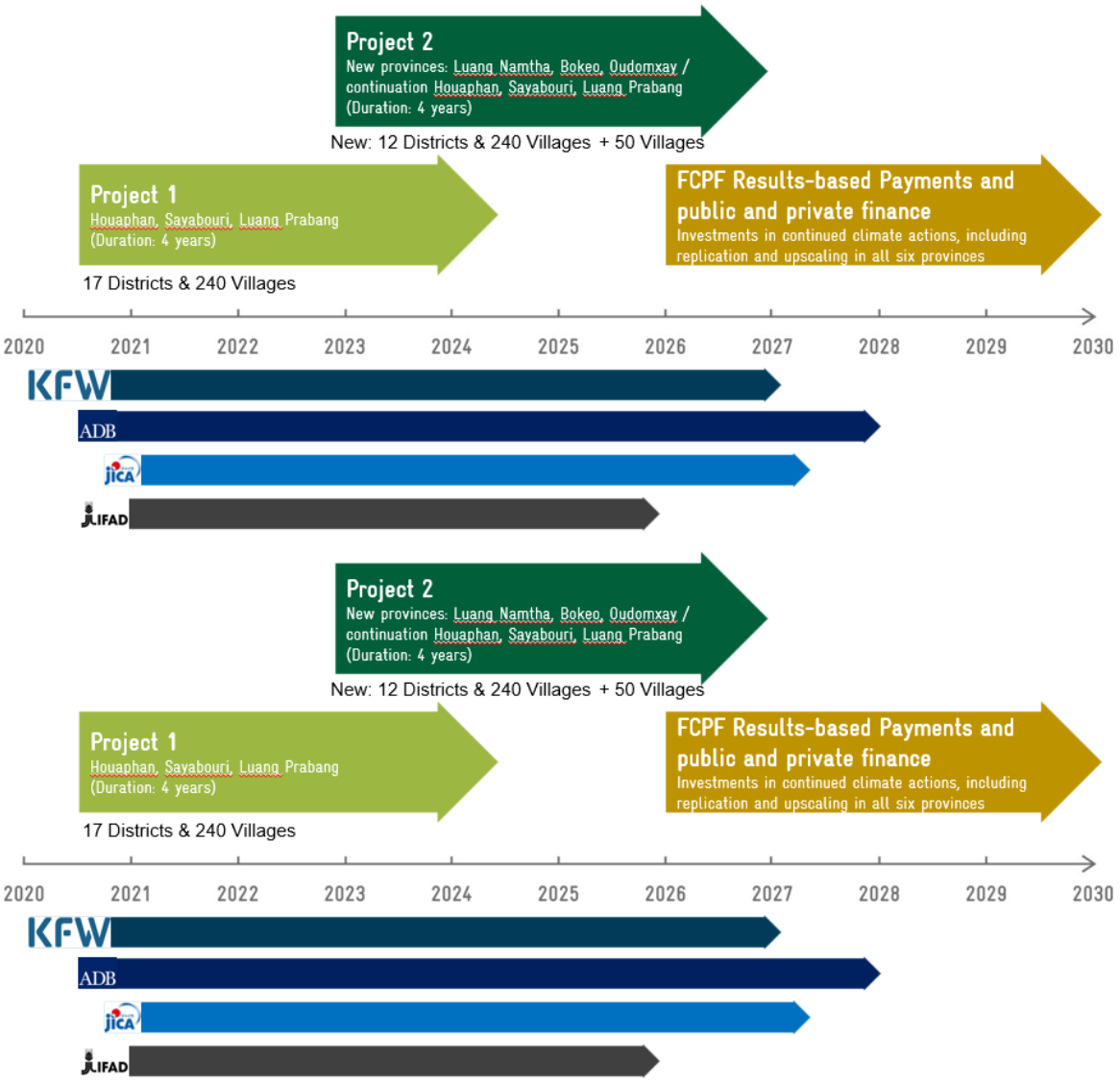


Figure 2. Phased approach to implement the Lao PDR Emission Reductions Programme

During the development of FP117, the following advantages of following programmatic approach would were identified:

- Phased geographic upscaling of activities through a sequenced series of interlinked projects, embedded in the programme for different regions/provinces in the accounting area
- A REDD+ funding window as a common financial mechanism at the centre of the programme (which subsequently became a Climate Change Funding Window to allow for further flexibility)
- Common objectives aligning the projects and contributing to the strategic goals of the forestry section in the Lao PDR's NDC
- A stronger emphasis on performance-based financing
- A longer total duration of the programme compared to a project
- Scaling up project activities while building up the capacity of Laotian institutions
- Increasing effectiveness over the course of the programme
- Taking advantage of synergies with other development programmes in the country

In addition, the following benefits were identified:

- Impact: Greater flexibility through projects to gather data and learn from projects for more effective and adaptive designs and higher impact in subsequent projects (build up know-how and collect lessons learned)
- Sustainability: Higher potential for crowding in more sustainable financing from diversified sources (more ERs, additional domestic revenues, larger endowment for the EPF's REDD+ funding window) utilising a hybrid financing mechanism for the entire programme and thereby increasing long term financial sustainability
- Paradigm shift: More time for communities, businesses, civil servants and regulators to adjust to the desired paradigm shift in the land-use sector though an overall longer duration of a programme compared to a project
- Efficiency: Greater flexibility to improve project management and reduce transaction costs over time through the common financing mechanism (REDD+ Funding Window which was subsequently expanded in scope to become the Climate Change Funding Window)
- Integration: Better linkage with the programmatic approach of the FCPF ER-Programme
- Convergence: A more open platform for coordination and harmonization of existing co-financing contributions towards the NDC forestry objectives as well as a vehicle for attracting additional co-financing.

This feasibility study refers therefore to Project 2 of the GCF Programme, which provides an opportunity to achieve the paradigm shift towards a low-emissions and climate resilient forest and land-use sector in Lao PDR13. Next to expanding the Programme intervention area to 3 more provinces to support 240 villages, the project will continue to support 50 villages that are currently supported under Project 1 provinces and will also, upon request from the GCF Secretariat include adaptation measures, to enable the transition to sustainable and climate resilient forest and land management in the uplands of Northern Lao PDR. Although the project area has certain climate vulnerabilities and under Project 1 the adaptation co-benefits were highlighted by iTAP and the GCF Secretariat to have a high potential to reframe Project 2 as cross-cutting, the main issue in the under Project 1 and 2 selected area is still deforestation. Therefore, the focus of Project 2 will remain to reduce emissions as proposed and approved under Project 1.

[13] The Lao People's Democratic Republic (Lao PDR) and Laos is used synonymously throughout the Feasibility Study

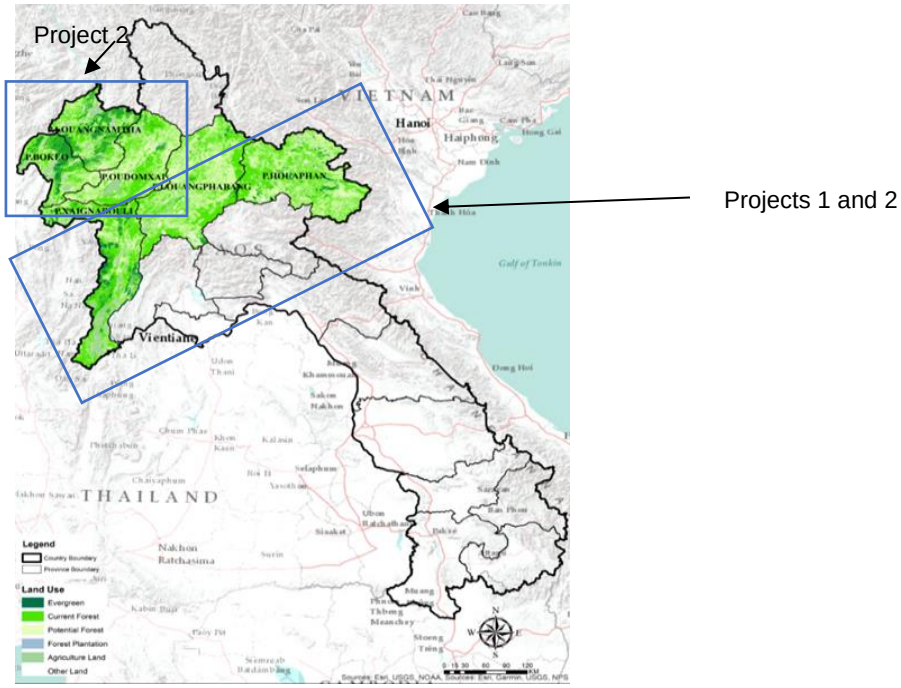


Figure 3. The Programme/Project Area in Lao PDR

To achieve such a paradigm shift, the Programme (in which Project 2 is embedded) is expected to:

- Strengthen the **enabling environment for REDD+** through the following means: enhancing the availability of financing for a deep transformation in the way Laos manages its forest landscapes – Project 1 established Climate Change Funding Window and strengthened the legal and regulatory framework for forestry. Under Project 2 the programme will continue focusing on improving the enforcement of the new regulatory framework. It will further strengthen the framework to improve the implementation of cross-cutting measures, with both climate change adaptation and mitigation measures.
- Support the **further implementation of integrated and improved land use planning processes**, which include local level planning while ensuring plans feed into broader watershed level planning. This will ensure an ecosystem-based approach to adaptation, where measures such as resilient agricultural practices, and sustainable forest management will contribute to strengthening the resilience of local communities and ecosystems within watersheds.
- Supports **deforestation-free and climate-resilient agriculture** by promoting resilient value chains and agricultural interventions, enhancing productivity, increasing farmers' integration into resilient and low-emission agricultural value chains, and improving access to markets through private sector participation in economic activities that reduce pressure on forests. The Project will also support farmers with income diversification, promoting diverse agricultural commodities and farming systems that are suitable for the varied contexts, as well as diverse bio-geophysical and climatic conditions in Northern Lao PDR.
- Supports the **implementation of Sustainable Forest Landscape Management** (SFM) and **Forest Landscape Restoration** (FLR) of approximately 1,422,000 haof degraded forest lands (Projects 1 and 2).[14] Climate-informed management plans for village forests and national protected areas (NPAs) will be developed and implemented by the project considering measures for reducing deforestation and forest degradation, enhancing forest restoration and rehabilitation, and identifying opportunities to strengthen the resilience of forest ecosystems and communities within the watershed through ecosystem-based

[14] Considering national parks (NPs), national protected areas (NPAs) and village forests. See Section E for more detailed information on the indicators and assumptions.

adaptation (e.g. restoring riparian zones and gully areas, reducing sedimentation through increasing vegetative cover, among other practices). Project 2 will further strengthen climate change awareness raising and include an enhanced emphasis on climate risk and vulnerability and resilience building within forest management plan development, implementation and monitoring processes for village forestry and protected areas.

Note: This Feasibility Study (FS) builds on the FS conducted for the overarching programme that accompanied FP117. It has been updated in early 2022 to reflect changes in baseline conditions, lessons learned from Project 1, and further analysis informed by the review of key literature, informant interviews, and stakeholder consultations held with Government authorities at the national, provincial and district level, local villagers, civil society organizations (CSOs) and private sector actors, among others (for more detailed information on stakeholder engagement, refer to the Stakeholder Engagement Plan in Annex 7 to the Funding Proposal (FP).

2. Country Profile

2.1 Overall Country Profile

Lao People's Democratic Republic (Lao PDR) is a landlocked country situated in the Annamite Mount Range in the Southeast Asia, bordering with Cambodia to the South; China to the North; Vietnam to the East; Thailand to the West and Myanmar to the Northwest (see Figure 4). The country's surface covers a total land area of 236,800 km2 and is divided in 18 provinces (including Vientiane Capital). Lao PDR is a topographically diverse country, around 80% of the country's area is mountainous and hilly upland areas (Lao PDR, 2020). The 20% left is comprised by cultivated flood plains along the Mekong River and other fluvial tributaries. Elevation in the country ranges from 200 to 2,880 meters above sea level (Lao PDR, 2020).

Figure 4. Programme area location in the Lao PDR context

Lao PDR is a country rich in natural resources, and its socioeconomic development largely depends on their utilisation. The majority of Lao PDR (90%) is located within the Mekong River basin, comprising 25% of the entire Mekong River basin. The Mekong spans 1,898 km through Lao PDR, and provides important resources for local livelihoods and industry, both within Lao PDR as well as upstream and downstream. Agriculture is the most relevant economic sector for the country, together with hydroelectricity generation (Lao PDR, 2013).

The country is generally divided into three regions based on altitude comprising (Lao PDR, 2013):

- Mountainous regions in the North with altitudes over 1,000 meters above sea level. This region is characterized by a montane temperature and hilly sub-tropical climate: high humidity, annual precipitation of 1,500 to 2,000mm, and lower temperatures than other parts of the country.

- The central mountainous region in the Annamite Chain, with altitudes between 500 to 1,000 meters above sea level. The average temperature in this region is 2,500 to 3,500mm and is characterized by a tropical monsoonal climate with high temperatures.
- And the central plains region, which includes tropical lowland plains and floodplains along the Mekong River and its main tributaries, where more than 50% of the population lives.

2.2 Socio-economic Profile

Demographic and social context

Lao PDR has a population of approx. 7,275,000 inhabitants (3,623,000 female, 3,651,000 male) and an average per capita income of USD 2,490 (World Bank, 2021). The country has a human development index (HDI)[15] of 0.613, ranking it 137th (out of 189) globally (UNDP, 2018). At the 2021 triennial review, its LDC status was recommended for graduation by 2026 with an extended 5-year preparatory period, assuming a continued positive trajectory in all relevant indicators during the period leading up to graduation. Based on the assessment of the United Nations Committee for Development Policy (CDP), Lao PDR has met all three graduation criteria[16]. Lao PDR has thus been found eligible for LDC graduation at two successive triennial reviews (at the previous review in 2018, Lao PDR only met two of three criteria: GNI and HAI, but did not meet the EVI criterion) (MPI, 2021).

The country has a population density of around 27 people per km^2 (2015)[17], with the most densely populated provinces including Vientiane, followed by Champasack and Svanakhet provinces (Lao Statistics Bureau, 2015). Nationally, the population is growing, but, at reduced rates compared to those of the 1990s. During 1985-1995, the average population growth rate reached 2.47% annually. In the following decades, the annual growth rate fell to 2.08% (1995-2005) and 1.45% (2005-2015). The declining growth rate is a result of falling birth rates and migration (to neighbouring countries for economic reasons), among other contributing factors. The median age within the country is 22.7 years. Lao PDR has a relatively young population, with 32% of the population between 0-14 years, 64% between 15-64 years and only 4% of the population above the age of 65 years (Lao Statistics Bureau, 2015).

Lao PDR is a predominantly rural country with approximately 63% of its population in rural areas and only 37% in urban centres (CIA, 2022). The most densely populated areas are the Vientiane Prefecture, including the capital city and areas along the Mekong River. While urbanization is occurring at an annual rate of 3.3% (2020), it has considerably slowed down since the 1990s and early 2000s when rates exceeded 5.1% and 6.4%, respectively (World Bank, 2021). Among the rural population, those without road access have declined significantly from 21% in 2005 to just 8% in 2015 (Lao Statistics Bureau, 2015).

Lao PDR is home to a rich cultural diversity, with 50 ethnic groups and more than 160 ethnic sub-groups – speaking 82 distinct languages (Lao Statistics Bureau, 2015). Around 53% of Lao PDR's population is ethnically Lao, whereas the remaining 47% of the population comprises over 48 other ethnicities (Lao Statistics Bureau, 2015). Ethnicities with the large populations in Lao PDR include, among others, the following ethnic groups: Khmu (708,412, 50% women), Hmong (595,028 people, 49% women), Phouthay, Lue (218,108, 51% women), Tai (201,576, 49% women), Makong (163,285, 51% women), Katang (144,255, 51% women), and Akha (112,979 people, 50% women).

In 2018 around 84% of the population was literate, having increased from 72.7% in 2015 (MPI, 2021). Nationally, the poverty rate declined during 2013-2019 from 24.6% to 18.3%, poverty rate reduction has been rapid in rural areas, while urban poverty reduction has stagnated (MPI

[15] HDI takes into account three dimensions to assess the level of development of a country: a long and healthy life (life expectancy at birth), knowledge (expected years of schooling, mean years of schooling), and a decent standard of living (GNI per capita). Additional information can be found at: http://hdr.undp.org/en/content/human-development-index-hdi.

[16] Criteria scores: Gross National Income (GNI) of USD 1,222 or above, the Human Assets Index (HAI) 66 or above, and the Economic Vulnerability Index (EVI) 32 or below (UN n.d.)

[17] Note, 2022 official population density information is not available, data used from the last census conducted in 2015

and World Bank, 2020). Currently, progress towards poverty reduction is uneven, and there are discrepancies between urban and rural areas, certain provinces and among different ethnic groups. Still, during 2013-2019 disparities across regions and provinces have narrowed. The northern and southern provinces have experienced a faster reduction of poverty rates, except Attapeu province. Poverty is largely concentrated among minority ethnic groups, as well as the less educated, unemployed and family farm-dependent households, and such gaps have widened (MPI and World Bank, 2020). Of the six target provinces, poverty declined in all, except in Sayabouri[18], during this period (MPI and World Bank, 2020).

Macro-economic context

Lao PDR is a natural resources rich country. The country's economy is dependent on natural resources, especially forestry, agriculture, electricity generation (especially hydropower) and mining. Lao PDR's Gross Domestic Product (GDP) in 2020 amounted to USD 19.13 billion. Lao PDR has been one of the fastest growing-economies globally, where GDP growth has averaged 6.7% over the last decade but fell to 0.5% in 2020 due to the adverse impacts of the COVID-19 pandemic (World Bank, n.d). The country's economic growth is largely attributed to power generation, manufacturing and natural resource-based industries. GDP is projected to rebound in the following years, around 3.6% forecast for 2021, see Figure 5 below.

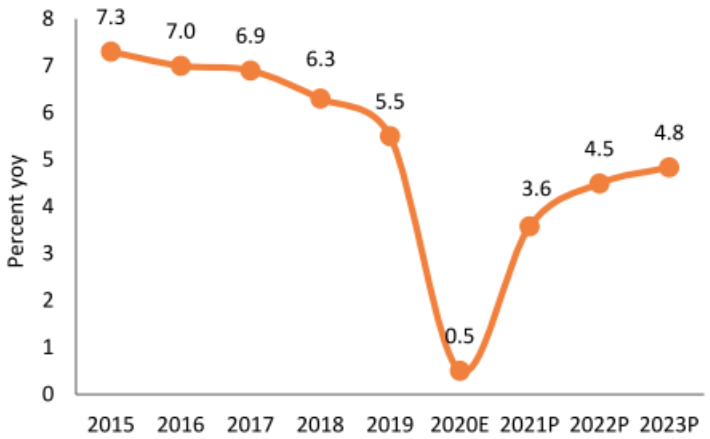


Figure 5. World bank estimated growth from 2021 onwards (percentage)
Source: World Bank staff estimates and projections in Lao PDR Economic Monitor (World Bank, 2021b)

Moreover, the gradual opening up of the country and growing regional integration have also helped to spur growth (World Bank, 2021b). The agriculture and industry sectors are anticipated to be important economic growth drivers, supported by external demand as key trading partners recover (See Figure 6). There has been solid growth in the exports of agricultural products, such as banana, cassava, coffee beans, and rubber. Meanwhile, the industry sector has reflected strong growth in energy, mining, and export-oriented manufacture and processing activities during the first 5 months of 2021. Yet, the services sector has had difficulties recovering since the second COVID-19 wave (mid-April 2021), reversing the initial recovery of the first quarter of 2021(World Bank, 2021b).

[18] Luang Namtha (25% to 10.5%); Oudomxay (36.6% to 26.2%), Bokeo (51.8% to 19.4%); Laung Prabang (30% to 20.4%); Hauphanh (45.4% to 26.6%); and Sayabouri (15.7% to 21.1%) (MPI and WB 2020)

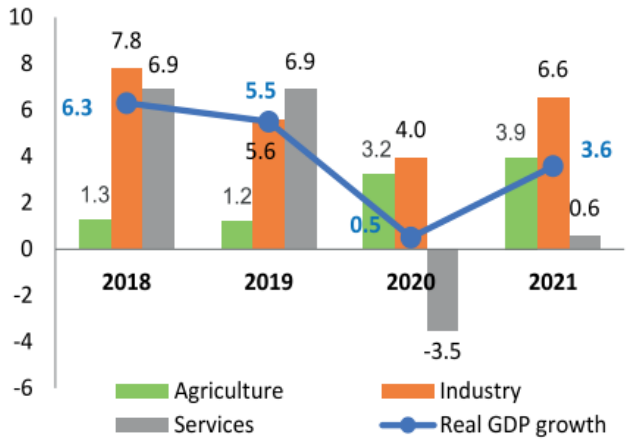


Figure 6. Estimated percentage change per sector from 2020 onwards.
Source: World Bank staff estimates and projections in Lao PDR Economic Monitor (World Bank, 2021b)

Lao PDR's topographic characteristics and location makes the country dependent on road transportation for trade and economic growth. The East-West and North-South economic corridors connect Lao PDR with its Southeast and East Asian neighbours (World Bank and ADB, 2021). There is a shift from agricultural work to the service sector, still agriculture remains the dominant employer. Agriculture, forestry and fisheries account for 16% of GDP, reducing its share from previous years of 23% in 2010 and 34% in 2000 (World Bank, n.d). The low GDP contribution can be explained by the high levels of subsistence agriculture and low levels of productivity, particularly in the programme area. In 2017 the agricultural sector employed 64% of the workforce, while wage employment only constituted 16% of total employment (Laos Statistics Bureau, 2018). During the COVID-19 pandemic, unemployment increased up to 20% as businesses and industrial plants abroad and within the country were impacted, Lao migrant workers returned home and a large number of domestic workers were laid off (MPI, 2021).

Fiscal context

Lao PDR's central government gross debt to GDP ratio currently stands at 70.9%, having increased significantly over the last couple of years (from 61% in 2019) (IMF, n.d). The World Bank (n.d.) estimated a fiscal deficit of circa 4.7% in 2021. Despite efforts to address debt sustainability, including through the introduction of a Public Debt Management Law in 2018 (IMF, 2019), the IMF's Debt Sustainability Analysis highlights that Lao PDR's risk of external debt distress remains high, suggesting the urgent need to tighten fiscal policy, strengthen public financial management, and develop a comprehensive medium-term debt management strategy. Since the development of Project 1, Lao PDR's economy has been hit hard by the COVID-19 pandemic. UNICEF released a series of reports in 2021 that note the country's economy could contract by 1.8-3.3%, and there are substantial urgent investments needed to support the country´s pandemic response (e.g. health care, nutrition and food security, among others) (UNICEF Lao PDR, 2021). In August 2020, Moody's downgraded Lao PDR issuer rating to Caa2 from B3 noting a negative outlook and highlighting that "Laos is facing severe liquidity stress, given sizeable debt servicing payments due this year and persisting until 2025, and constrained financing options. Heightened liquidity risk is exacerbated by weak external and fiscal buffers and poor governance, and points to a material probability of default in the near term."(Moody's, 2020).

2.3 Forest Sector Profile

Lao PDR's forests have great ecological importance locally and globally due to their unique biodiversity and ecosystem services (MoNRE, 2016). Forests are one of the most important economic sectors, providing income for the rural population. Around 80% of the population are

heavily reliant on forests for timber, food, fuel, shelter, medicines, and spiritual protection (DOF/MAF, 2020a). Of the country's total land area of 23 million hectares (ha), forested land accounted for 57.5% (13.7 million hectares) in 2019.

Forest Cover and classification system

For the purposes of this feasibility study, it is important to outline the definitions and terminology used in Lao PDR on forests. The national forest definition stipulates that "*Forests are invaluable national resources with a unique ecology, comprising biodiversity, water sources and land with various tree species growing naturally or planted in an area of at least zero point five (0.5) hectares and a crown cover of at least 20 percent*" (MAF 2021a, p.1). It is important to note that "*Forestland is all land with or without forest cover, which is designated by the State as forestland* " (MAF 2021a, p.3).

Considering the IPCC definition of Forest land against the national circumstances of the Lao PDR, the IPCC Forest land category for Lao PDR has been determined by the Government to include both "Current Forest" land categories as well as "Potential Forest" categories (DOF/MAF, 2020a): (see Figure 7).

Current Forest (land/forest classification system Level 1) are areas with a tree cover and crown density of at least 20%, a adjoining area of more than 0.5 ha, and trees with a DBH more than 10 cm. Forest Plantations are exempted from the rule of the minimum crown density.

- Level 2 classes under Current Forest include: Evergreen forests (EG), Mixed deciduous forest (MD), Coniferous forests (CF), Mixed coniferous and broadleaved forests (MCB), Dry Dipterocarp forest (DD), and Plantations (P).
- Current Forests covers Stratum 1, 2 and 3, and includes Plantations from Stratum 4 (Strata applied under REDD+ carbon accounting, according to their carbon stock measured).

Potential Forest (land/forest classification system Level 1) are areas with a crown density less than 20% and not permanently being used for other purposes (i.e. housing, agriculture etc.).

- Level 2 classes under Potential Forest include: Regenerating Vegetation (RV) and Bamboo.
- Regenerating Vegetation (RV) are previously forested areas in which the crown density has been reduced to less than 20% because of logging or heavy disturbance including shifting cultivation. If the area is left to grow undisturbed it will become forest again.

This forest classification implies that a large share of the defined forest areas (classified as Regenerating Vegetation) is actually not forest. The Regenerating Vegetation is very often under agricultural land use with a low carbon stock. From a GHG mitigation and biodiversity perspective, the high-carbon-stock forest must be a priority for conservation and management, while low-carbon-stock forest (RV) may be suitable for agricultural intensification or restoration (DOF/MAF, 2018a). The selection of the target programme area considers this and prioritizes districts with a high remaining high-carbon-stock forest area and high risk of deforestation and forest degradation (see Figure 9). For further information on the Lao land/forest classification system and definitions, refer to Chapters 8 and 9 of the ER-PD.

Level 1	Level 2	Strata
Current Forest	Evergreen Forest (EG)	1
	Mixed Deciduous Forest (MD)	2
	Coniferous Forest (CF)	
	Mixed Coniferous/Broadleaved Forest (MCB)	
	Dry Dipterocarp (DD)	3
	Forest Plantation	4
Potential Forest	Bamboo (B)	
	Regenerating Vegetation (RV)	
Other Vegetated Areas	Savannah (SA)	5
	Scrub (SR)	
	Grassland (G)	
Cropland	Upland Agriculture (UC)	
	Rice Paddy (RP)	
	Other Agriculture (OA)	
	Agriculture Plantation (AP)	
Settlements	Urban (U)	
Other Land	Barren Land (BR)	
	Other (O)	
Wetlands	Water (W)	
	Swamp/Wetland (SW)	

Figure 7. Land and forest classification system in Lao PDR
Source: DOF/MAF 2020a, p.20

The Forest Type Map (Figure 8) produced by the Forest Inventory and Planning Division (FIPD) under the Department of Forestry (DOF) shows the different forest classifications of Lao PDR and collected forest area data. As of 2019, under the classification of 'current forest', evergreen forest contributes 2.6 million ha (11% total land area), and mixed deciduous, coniferous, mixed coniferous and broadleaf collectively contribute 9.2 million ha (40.2% total land area) (DOF/MAF, 2020). Dry dipterocarp forests alone contribute roughly 1.2 million ha (5% total land area). Collectively, forest plantations and potential forested land with bamboo and regenerating vegetation contribute 6.3 million ha and 27.7% of total land area (DOF/MAF, 2020a).

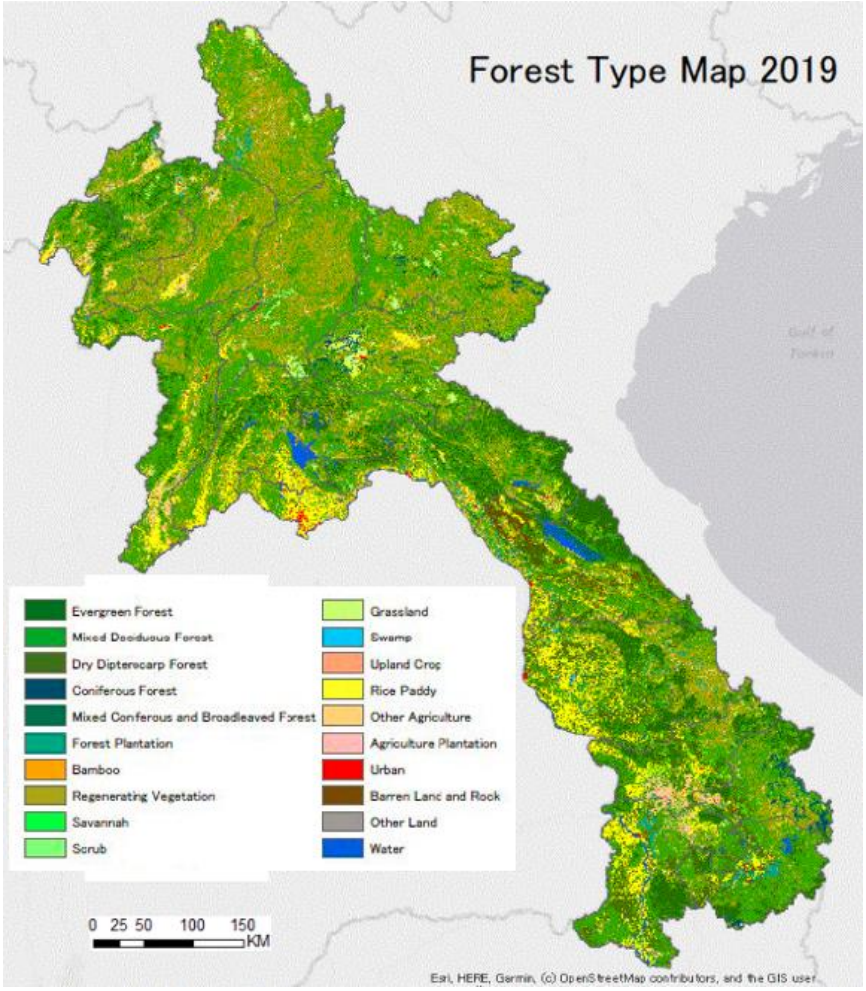


Figure 8. Lao PDR forest type map (2019)
Source: DOF/MAF 2020a

Forest use rights and management

Article 4 of the 2019 Forestry Law describes the ownership of forest land as follows:

"*Natural forest and forestland is the property of the Lao Nation. The State is the designated authority to centrally manage forest and forestlands in a uniform manner throughout the country with the participation of all organizations and the people in the management, protection and utilization of forests and forestland in accordance with the law.*

Forests and trees planted in designated areas by individuals, legal entities, organizations, and investors, using their own labour and/or funds, are legally recognized by the State Forestry and Forestland Management Organization, and shall become the property of the planters or investors." (MAF 2021a, p.6).

Additionally, the Land Law Forest land may be used for public purpose, family and businesses without causing adverse impacts on forest, soil quality, environment and society. Rights to use forests (including natural forest, forestland, planted forest and forest plantation areas) can be obtained through the provision, transfer or inheritance of rights planted forest and forest plantation areas (DOF/MAF, 2020a).

Lao PDR has three administrative categories of forests identified in the 2019 Law on Forests (Chapter III). The Law on Forestry has identified these categories of forests based on their functions for the purpose of management, protection, development and utilization (MAF, 2021a). The list below indicates the definition of each category under the Forestry Law:

- **Production forests**: "*Production Forests are forests including natural forests and planted forests designated for the supply of wood and NTFPs as commodities to fulfil the requirements of national socio-economic development and people's livelihoods*" (MAF, 2021a, p.11). Responsibility for the management of production forest is assigned vertically downwards through the Department of Forestry, with most operational activities being undertaken at the District level. Village Forest Units, which are the 'smallest' administrative level, also play a role. Timber harvesting operations are undertaken by timber harvesting units or timber harvesting enterprises, which are licensed by the Department of Forestry. There are 51 areas covering 3.1 million ha.
- **Protection forests**: "*Protection Forests are forests classified for the function of maintaining water sources, river banks and road sides, for preventing soil erosion and improving soil quality, strategic areas for national defence and security, safeguarding against natural disasters and providing environmental protection and other functions*." (MAF, 2021a, p.11) In Protection Forests individuals and villages have certain rights with respect to the harvesting of timber and forest products for their own consumption. They are managed by the Department of Forestry, protection Forests comprise national, provincial, district and village Protection Forests, as specified in a specific regulation. 7.4 million ha are defined as national Protection Forest (DOF/MAF, 2020a).
- **Conservation forests**: "*Conservation Forests are forests classified for the purposes of conserving nature, preserving and propagating plant species, aquatic animals and wildlife species, protecting forest ecosystems and others of natural, historical, cultural, touristic, environmental and educational value and for scientific research experiments*" (MAF, 2021a, p.11).This forest category is characterized as "*rich in biodiversity, have unique natural scenery, are of outstanding importance at national, regional and global levels and may be proposed as wildlife conservation areas, national parks, regional or world heritage sites*" (MAF, 2021a, p.11). They are managed by the Department of Forestry and consist of national, provincial, district and village conservation forests which as specified in a specific regulation. Conservation forests are subdivided into: total protection zones (all land uses prohibited), controlled use zones (permanent agriculture, non-commercial logging and collection of forest products allowed), corridor zones (collection of forest products allowed) and buffer zones (non-commercial logging and collection of forest products allowed). There are 24 areas covering 3.8 million ha in Lao PDR (DOF/MAF, 2020a).

Village forests

The new Forestry Law (2019) encourages village forest management over much of the forestry estate, placing some of the forests under local village stewardship (MAF, 2021a).

Village use forests are production forests (including NTFPs) located within the village area, which the Government has allocated to the village to manage, preserve and use in a sustainable manner in accordance with the legal and regulatory framework. Village Use Forests may be located inside and/or outside of three forest categories under the Forestry Law: Production, Protection and Conservation Forest. Forest and forestland at the village level are approved by the district governor based on the participatory land use planning carried out by DONRE and DAFO. The utilization of forestland at the village level must be undertaken according to a village forest management plan for the entire village, for household and individual uses; the plan has to be endorsed by DAFO. The utilization of forestland at the village level must be undertaken according to a village forest management plan for the entire village, for household and individual uses; the plan has to be endorsed by the District Governor based on the proposal by DONRE and DAFO (CliPAD, 2016).

Within village forests, the Government encourages individuals, households, legal entities and organizations to carry out the preservation and development of all forest types, in order to regenerate forest, and to plant trees and NTFPs in degraded and badly degraded forestland and barren forestland areas to become rich forests for environment and biodiversity protection

in order to enhance forest carbon stock and ecosystem services, providing that there is benefit sharing in a comprehensive and fair manner (MAF, 2021a).

Programme area

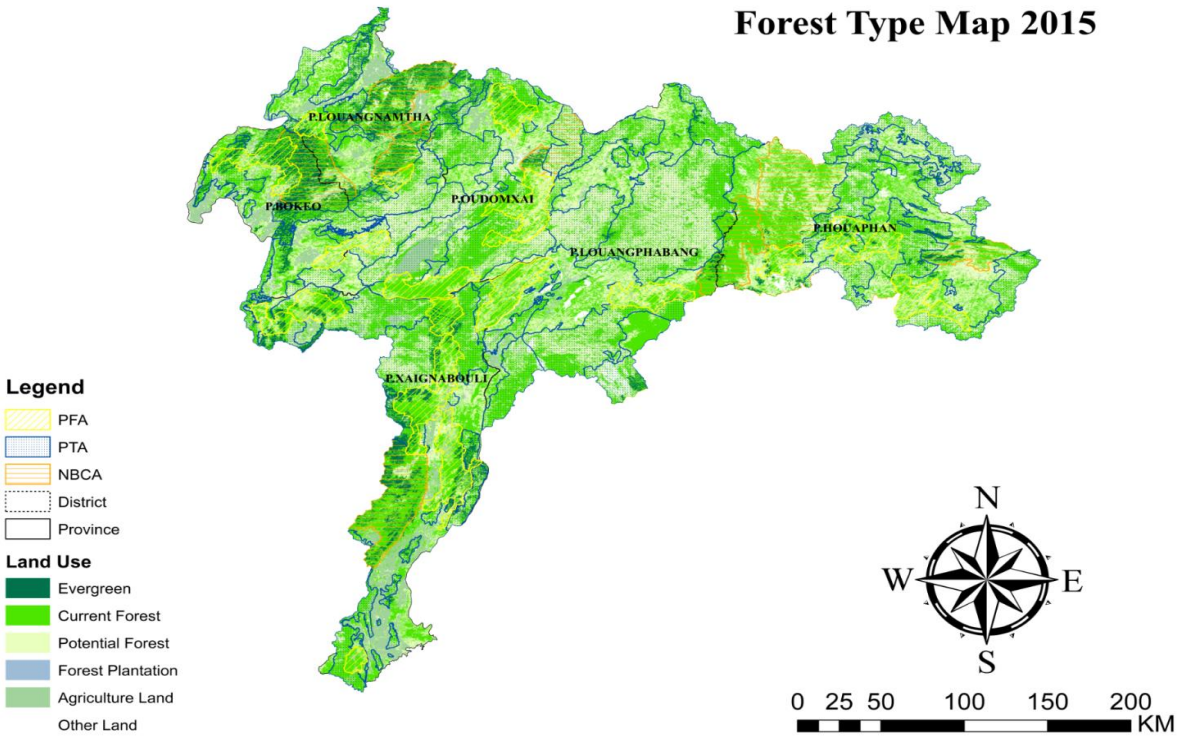


Figure 9. Programme area forest type and national forest categories map (2015) (PTA: Protection Forest Areas; PFA: Production Forest Areas; National Protected Areas (NPA)[19]

Forests cover over 7.27 million hectares in the programme area (Table 1). The majority of forests within the programme area (73%) are included within the three official forest categories. However, only 53% of the total land area is under actual forest while 36% of total forest land use under potential forest land (which refers largely to the regenerative vegetation shifting cultivation landscape; see Figure 9 above).

Table 1: Forest categories in northern Lao PDR (2015)

LAND/FOREST CLASSIFICATION	6 NORTHERN PROVINCES				
	PRODUCTION FOREST (HA)	CONSERVATION FOREST (HA)	PROTECTION FOREST (HA)	OTHER AREA (HA)	TOTAL AREA (HA)
EVERGREEN (HIGHEST CARBON STOCK FOREST) (EG)	84,614	193,686	144,203	58,915	481,417
CURRENT FOREST (NATURAL FOREST WITH HIGH CARBON STOCK) (MD, DD, MCB, CF)	578,072	579,055	1,731,243	928,868	3,817,238

[19] Note: Evergreen and current forest have the highest average forest carbon stocks 733.2 tCO2/ha for evergreen forest and 323 tCO2/ha for current forest, and have highest GHG mitigation potential from avoided deforestation and forest degradation. Potential Forest has an average carbon stock of 66 tCO2/ha.

FOREST PLANTATION	154	3	2,134	6,435	8,72620
POTENTIAL FOREST (REGENERATING VEGETATION RV)	332,308	209,772	1,464,500	959,957	2,966,537
AGRICULTURE LAND	51,367	16,558	189,420	397,120	654,465
OTHER LAND	8,809	18,908	85,384	82,592	195,693
TOTAL LAND	**1,055,324**	**1,017,983**	**3,616,882**	**2,433,887**	**8,124,076**

Source: Based on DOF/MAF dataset used for the development of Forest Reference Level (2005-2015)

Biodiversity

Lao PDR is rich in natural resources and a well-known hotspot for biodiversity in Southeast Asia. The country's geographic location sits between four critical ecoregions and hosts some of the world's biologically richest and endangered ecosystems and species (World Bank, 2020a). In the country there are between 8,000-11,000 species of flowering plants, between 150-200 species of reptiles and amphibians, at least 700 species of birds, 90 species of bats and over 100 species of large mammals (MoNRE, 2016). Examples of rare and endangered species found in Lao PDR include the Asian elephant, tigers, clouded leopards, guar, leopards, saola, gibbon, Siamese crocodiles, Irrawaddy dolphins and white winged ducks, among others (World Bank, 2020a). Biodiversity in Lao PDR has great relevance for local livelihoods as, plants are important sources of food and medicine for Lao people, particularly those in rural area. Agro-biodiversity also plays a crucial role in the national and local economy (Lao PDR, 2021b).

The GoL has shown political interest in recent years for the long-term sustainable management of biodiversity, especially through forest conservation, protection and addressing illegal logging, fishing and wildlife trade. Among others, Lao PDR has drawn laws and regulations in line with both the Forest Law Enforcement, Governance and Trade (FLEGT) agreement and CITES (World Bank, 2020a). While Lao PDR has made important strides to establish protected areas, their management remains a major challenge. Threats to biodiversity outlined in the country´s biodiversity strategy and action plan from 2016-2025, include shifting cultivation, overharvesting of NTFPs, and wildlife trafficking, among others (MoNRE, 2016).

The national protected area system (See Figure 10) is under the management of the department of Forestry (DoF) within the MAF. There is an ongoing process in designation and re-designation of NPAs and establishing a national park system (World Bank, 2020a). In 2019 the GoL re-designated three NPAs and established the nation´s three first National Parks (Nakai-Nam Theun National Park, Nam Et-Phou Louey National Park and Hin Nam No) (MPI, 2021). Hin Nam No is short-listed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) to become the nation's first natural UNESCO World Heritage Site. The Department of Forestry is conducting feasibility assessments of a further six NPAs for re-designation as national parks (World Bank, 2020a).

[20] Note: in reality these figures are much higher than 120,000 ha. The remote sensing analysis conducted for this statistics had limitations in identifying forest plantations.

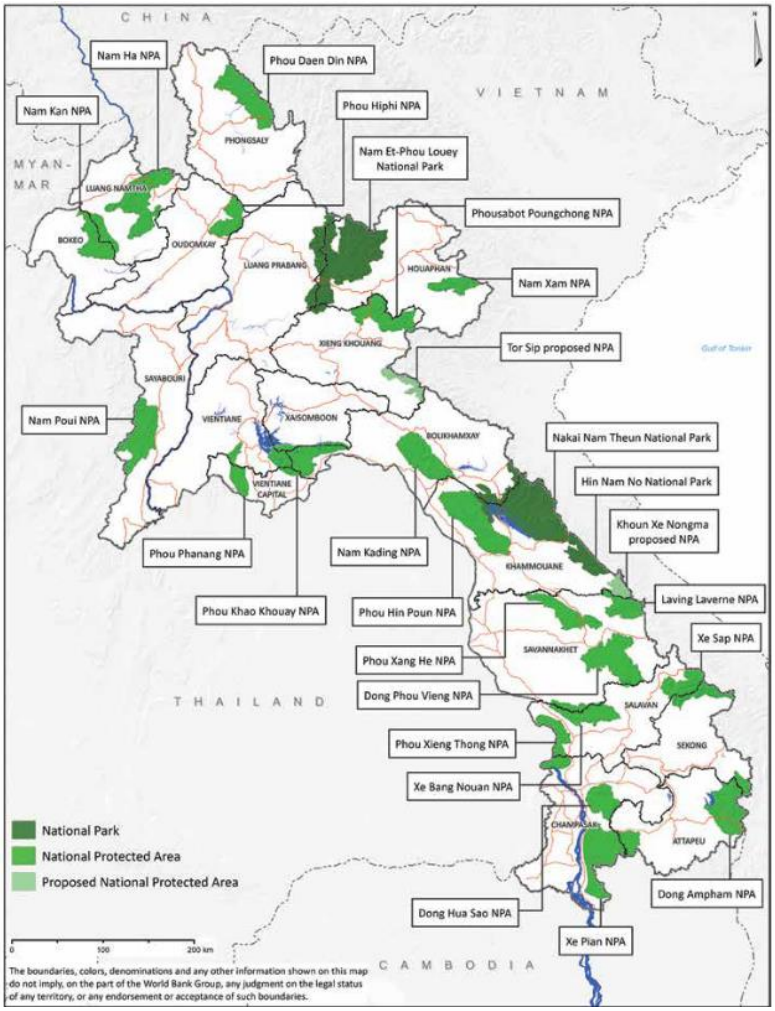


Figure 10. The Protected Area System of Lao PDR (as of March 2020)
Source: Chanthavone Phomphakdy in World Bank 2020a, p. 9

Programme Area

Northern Lao PDR is home to several important national biodiversity conservation and protection areas hosting rare and endangered species. Six protected areas exist within the programme area (see Figure 10 above). The national protected area includes the largest contiguous and intact forest landscapes that are at risk of deforestation and forest degradation. The intact forests tend to have significantly higher forest carbon stocks (350-730 tCO2/ha) (DOF/MAF, 2018a). Thus, protecting these national protected areas needs to be a key priority for the programme design and is one of the most efficient GHG mitigation options in the programme region and the highest impact in terms of biodiversity protection.

Table 2: Overview of National Parks (NP) and National Protected Areas (NPAs) within the programme area

NP	NPA	Province(s)	Area (ha)
Nam Et-Phou Louey		Houaphan Luang Prabang (Xiengkhouang)	422,900
	Nam Xam	Houaphan	69,028
	Nam Ha	Luang Namtha	224,000
	Nam Khan	Luang Namtha Bokeo	136,000 (56% BK, 44%

			LN)
	Nam Poui	Sayabouri	177,660
	Phou Hiphi	Oudomxay	87,350
		Total:	1,116,938

- The **Nam-Et Phou Louey National Park in Houaphan** province, stretching into **Luang Prabang** province contributes the highest biological diversity among protected areas in the Northern region, and is particularly renowned for its distinctive montane bird population. Nam-Et Phou Louey National Park is the first and largest protected area in Lao PDR. Until recently, the NP harboured one of the most important tiger populations remaining in Indochina and lies within the second most important core area in the world for supporting small carnivore taxa of conservation concern. At least 17 globally threatened bird species and 20 mammal species have been recorded in the NPA (ER-PD, 2018).
- **Nam Xam NPA, located in Houaphan Province**, still retains much of its rich biodiversity and is home to the white-cheeked gibbon, bears, langurs, sambar, hornbill, pheasants, and numerous other rare wildlife species (ER-PD, 2018).
- **Luang Namtha province is home to two NPAs: Nam Ha NPA (222,400 ha) and Nam Khan NPA (57,400 ha) (partly located in Bokeo).** Nam Ha NPA is home to over 33 species of mammals, 288 species of birds. Both of these conservation areas are in ongoing processes of updating management plans to be implemented for the period from 2020-2025(ER-PD, 2018).
- **Sayabouri province hosts the Nam Poui NPA**. Nam Pouy is home to 52 species of mammals, 98 bird species, 13 species of reptiles, 3 amphibian species, 15 fish species and diverse other mollusks, crustaceans and insects, representing an important hub of biodiversity in the country (ER-PD, 2018).
- **Phou Hiphi NPA** is located in Oudomxay Province. It includes habitat for IUCN red listed species such as tigers, bears, elephants and deer have been reported. The area is also home to Sino-Himalayan and riverine bird species. Oudomxay also hosts the Upper Lao Mekong Important Bird Area stretching into the neighboring provinces of Bokeo. The area has bird species including, Rufous-necked Hornbill, Black-bellied Tern Sterna acuticauda, River Lapwing, Plain Martin Riparia paludicola, River Lapwing, Small Pratincole Glareola lactea, and Swan Goose Anser cygnoides are some of the recorded avifauna (ER-PD, 2018).

2.4 Agriculture Sector Profile

The agricultural sector is the primary source of livelihoods for the majority of people in Lao PDR, in 2019 it counted for appx. 60% of the national employment (World Bank, n.d.). Statistics regarding economic activities fluctuate quite significantly due to the seasonal nature of some jobs and rain patterns in the agricultural sector. Around two-thirds of the population live in rural areas and three out of four households reported to be owners of agricultural land (Lao Statistics Bureau, 2015).

Food security is a development priority for the country and it aims to be self-sufficient to meet nutritional needs of the population (calculating energy of 2,600 Kilocalories per person per day). The main crops cultivated in Lao PDR are rice, maize for animal feed, coffee, tea, rubber, vegetables, starchy roots, beans, etc. There is also livestock farming with cattle, buffalo, pigs and aquaculture, which are commodities that have expanded recently (MAF, 2015). The agricultural sector mainly compromises subsistence farmers and is characterized by low yields, among other reasons due to low use of high-quality inputs such as seeds or fertilizer, low soil quality, limited irrigation and insecure land tenure. Extension services are of limited quality and have limited reach due to low (human and financial) resources. Agricultural value chains are very fragmented, with limited farmers' organizations and cooperatives and weak connections between value chain actors (GIZ, 2018). Additionally, the *Enabling the Business of Agriculture*

Score for Lao PDR was 37.10 out of 100 in 2019. Which places the country below the region's average and highlights diverse areas where the sector is still deficient, especially the indicators: supplying seed, registering fertilizer and sustaining livestock (World Bank, 2019).

Although this range of issues affects the sector, the sector has evolved over the past ten years, slowly shifting from subsistence to commercial and modernized agricultural production, though at a very limited pace. The production of maize, for example, has increased during recent years, as response to the increasing demand for maize as an ingredient of livestock feed in countries like Thailand and Vietnam (GIZ, 2018). Simultaneously, the sector has been the primary source of deforestation, forest degradation and GHG emissions in the country (LUCF and Agriculture account for 92% of the countries emissions, see chapter 3 for a comprehensive GHG emissions profile) (Lao PDR, 2021b). The agriculture sector has been impacted by natural disasters (floods and droughts), which have affected the production and yield of some crops. Average rice production, for instance, declined from 4.14 million tonne s in 2016 to 3.5 million tonnes in 2020. Nonetheless, in the last years rice production has met domestic consumption needs, with surpluses for trade (Lao PDR, 2021a).

Agriculture in the programme area

The Northern Uplands region of Lao PDR is characterized by hilly topography combined with flatland areas (World Bank and ADB, 2021). Of the total 783,000 farm households in the country, roughly 21% live in the Northern uplands. Agricultural land per person in the Northern provinces is on average between 0.32 and 0.38 hectares; the average farm size is between 1 and 2 hectares (Lao Statistics Bureau and MAF, 2012).

Rain-fed (lowland and upland) paddy rice, maize and vegetables are among the key agricultural crops grown in the six Northern Uplands provinces Luang Namtha, Oudomxay, Bokeo, Luang Prabang, Houaphan and Sayabouri (see Figure 11 below). In addition to that, smallholder farmers tent to own one or more types of livestock as a form of household savings or commercial sales, dominating livestock production with around 95% of the national herd (MPI, 2021; ADB, 2018).

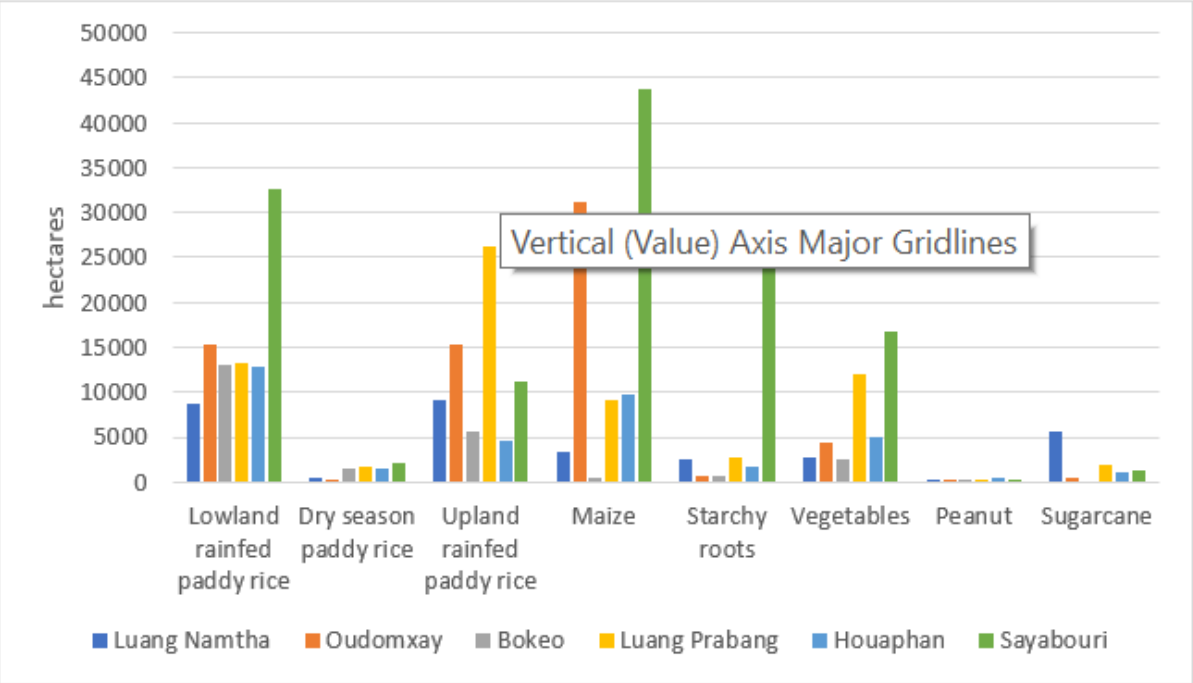


Figure 11. Key agriculture crops in the target provinces (ha planted)
Source: Based on Ministry of Planning and Investment, Statistical Yearbook 2019 data

Due to limited use of inputs such as high-quality seeds, fertilizer and the lack of application of good agricultural practices, crop yields tend to be low (Figure 12). Characteristics of agricultural production in each of the six provinces are summarized in Table 3.

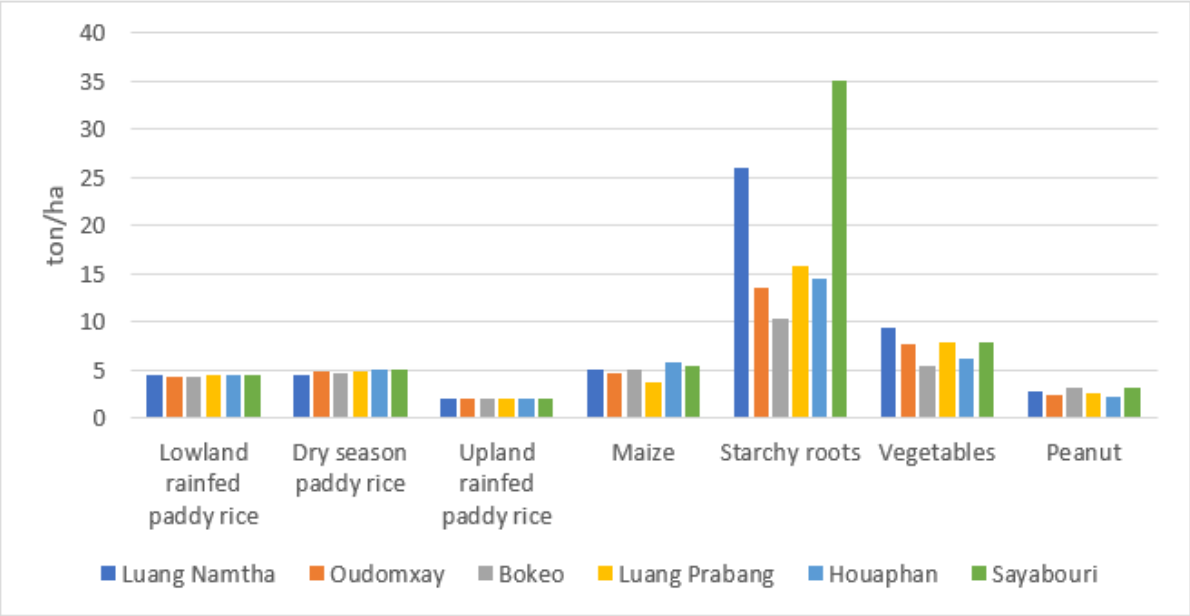


Figure 12. Yields of key agricultural crops in the target provinces (tons/ha)
Source: Based on Ministry of Planning and Investment, Statistical Yearbooks 2019 data

Table 3: Agricultural production in each of the six target provinces

PROVINCE	AGRICULTURAL PRODUCTION CHARACTERISTICS
LUANG NAMTHA	The province is one of the main producers of rubber and sugarcane in the country and has seen significant growth of both crops since the early 2000s. With 8,764 and 9,169 hectares respectively, lowland and upland rain-fed paddy rice are key agricultural crops grown in the province, followed by sugarcane (5,600 ha), vegetables (2,655 ha), starchy roots (2,439 ha) and maize (3,325 ha). The main proximate drivers of deforestation and forest degradation are linked to the rapid expansion of rubber plantations, shifting cultivation land and cash crop cultivation.
OUDOMXAY	Maize is the dominant crop produced in the province, in 2019 it counted for 31,114 planted ha, the agricultural production area of this crop has reduced in the last years (56,320 ha in 2017). Other major crops produced in the province include upland and lowland rained paddy rice (15,387 and 15,387 ha respectively) and vegetables (4,451 ha). Pioneering shifting agriculture and the expansion of cash crop cultivation are the main drivers of deforestation and forest degradation.
BOKEO	With 12,943 hectares (out of 27,586 hectares agricultural production area), lowland rain-fed paddy rice is the key crop grown in Bokeo province, followed by upland rain-fed paddy rice (5,660 ha) and maize (471 ha). The application of increasingly intensive agricultural practices in unsuitable upland areas with low productivity leads to soil degradation, low yields and, ultimately, shorter fallow periods. Especially for upland rice mixed with other vegetables (2,460 ha; e.g. cucumber, eggplant, chili peppers and ginger, among others), shifting cultivation leads to deforestation. Increased competition for the most fertile agricultural lands by rubber and cash crops has led villagers to clear forested land in upland areas to cultivate subsistence crops to provide food for their households.
LUANG PRABANG	Similar to Bokeo province, upland and lowland rain-fed paddy rice, followed by maize, are the key agricultural crops grown in the province. The three crops employ 26,322, 13,315 and 9,184 hectares respectively, and jointly account for approximately 82% of land used for agricultural production in the province. Poverty, population increase and limited livelihood options lead to agricultural expansion into the forest area. Furthermore, increased market demand for agricultural products lead to expansion of

	agricultural production.
HOUAPHAN	Key agricultural crops grown in Houaphan province include upland and lowland rain-fed paddy rice (4,540 and 12,880 hectares respectively), followed by maize (9,678 ha) and vegetables (5,105 ha). Extensive maize cultivation though shifting cultivation can be found in the Houaphan provice. This practice often involves slash-and-burn and rotational practices. Which together with cash crop cultivation account for some of the key proximate drivers of forest loss and degradation in the province. The impact from agriculture on forests is projected to increase in the future, with a large focus on expanding cash crop production in the province according to its last socio-economic development plan.
SAYABOURI	With 43,700 hectares, maize employs most of the agricultural area in the province. Other key agricultural crops grown in the province include lowland rain-fed paddy rice (32,707 ha), starchy roots (29,666 ha) and vegetables (16,760 ha). Maize cultivation in the province has grown extensively since the introduction of contract farming systems in the early 2000s. In 2017 the province was the largest producer of maize in the country, responsible for 22% of national maize production. Due to various reasons including agricultural diversification, land degradation, decreased labor availability, increased labor costs and market fluctuations (price), the government aims to reduce the area covered by maize.

Source: Based on Ministry of Planning and Investment, Statistical Yearbook 2019 data

Agriculture remains the main sector where micro, small, and medium-sized enterprises (MSMEs) are present, and it is estimated that there are between 600 and 700 agricultural focused MSMEs in each of the 6 target provinces in Northern Laos.

Regional trade dynamics

The agriculture sector is the fifth-largest sector for foreign direct investment. In 2019, approximately USD 50 million was invested in the sector. Countries investing in the agriculture sector with specific relevance to the Northern Region of Lao PDR include Vietnam, Malaysia, China and Thailand. Lao PDR has worked with cooperation agreements with other countries, including China and European countries. However, the agricultural sector struggles to meet export standards and requirements due to several challenges it faces (Lao PDR, 2021a).

Increased international trade and expanding markets directly influence the agriculture sector in the Northern Region. The Northern Uplands are increasingly viewed as a production base for agricultural products with a high demand, such as maize for livestock feed, paddy rice or rubber. As a result, contract farming has increased in the region: farmers are provided with inputs (e.g. seeds, fertilizer), capital and agronomic advice, and in return for their land and labour inputs commit their agricultural produce to the contracting party (investor) (ADB, 2018).

Increasing cross-border trade dynamics influence not only the type of crops that are grown, but also impact agricultural practices. Although contract farming can secure farmers with a stable income, it may also impact sustainability of farming practices, and risk land conflicts.

Barriers to agriculture value chain development

Although the agriculture sector in Lao PDR faces various barriers in general, specific barriers affecting agricultural value chain development in the Northern provinces include:

- Increasing population growth and government policies (village relocation, land use planning/allocation) limit the area available for agricultural production. As a result, farmers more intensively practice shifting cultivation, leading to reduced soil fertility, reduced land productivity and contributing to forest degradation and deforestation.
- Access to agricultural inputs, tools and machinery is limited; little to no agro-vet shops exist and many farmers thus rely on their own seeds, limited fertilizer (livestock manure) and pesticides for crop production. This results in low productivity of agricultural land management and leads to further land expansion into forested landscapes.

- Physical constraints from the geographic characteristics. Mountainous terrain reduces the amount of arable land and soil quality. Additionally, it is often linked to low connectivity of remote areas, increased travel costs, deficient market infrastructure and limited access to socioeconomic opportunities and services.
- Growing effects of climate change and natural disasters, northern provinces are especially threatened by floods and landslides. Soil erosion and droughts are an increasing thread for the region. The characteristic monsoon climate is expected to intensify its precipitation patterns putting the agricultural sector in a vulnerable position. Other socio-economic factors can amplify existing climate related challenges, for instance COVID-19 has impacted rural areas overall the country increasing poverty.
- Private traders import cheap fertilizer and pesticides from neighbouring countries such as China; however, product labels are not translated and thus farmers do not know how to best apply the products to their fields. Wrong application can risk under- or over application of inputs on-farm and may risk farmers' health (e.g., through the lack of protective clothing during application).
- Limited access to vaccines, breeding stock (including Artificial Insemination (AI)) and high-quality livestock feed hinder livestock production.
- The District Agriculture and Forestry Office (DAFO) is the main provider of agricultural extension services. Lack of capacity means (finances, transport) and up-to-date knowledge (e.g., on Good Agricultural Practices) constrains DAFO staff from providing high-quality extension services to farmers. The reach of extension services is limited, especially in very remote villages.
- Production and sales of agricultural produce are often undertaken by farmers individually; limited producer organizations exist. As individuals, farmers only sell limited volumes and thus have limited negotiation power with traders/private sector.
- Price fluctuations of crops such as maize are common. Farmers are highly susceptible to these price fluctuations and market risk. Significant declines in prices can have a detrimental impact on people's livelihoods.
- Private sector actors (e.g. farmers, traders, millers) lack financial capacity and literacy for, e.g., business plan development, financial analysis, planning and accounting. This hinders actors from fully exploiting business opportunities, business expansion or securing access to credit.
- The lack of a market information system and lack of post-harvest practices/value addition results in farmers selling their produce directly after harvest at farm gate. Prices directly after harvest are often – due to large supply – low. Farmers thus do not benefit from potential higher prices later in the season, or higher prices due to value added.

2.5 Financial Sector Profile

Access to financial services for businesses and families operating in the agricultural and forestry sectors or the rural sector more broadly remains low in Lao PDR. Approximately 66% of the population in rural areas utilise informal financial services and access to formal financial services in rural areas is close to 37% in rural areas with roads and 32% in areas without (TFRF, 2019). In addition to challenges in receiving loans or investment from banks and other investors, low access extends to other important financial services, such as savings deposits and insurance. The credit that is available is typically limited to short-term tenors, e.g. 1 year or less.

There are a number of factors that constrain access to credit from formal sources in rural areas, and financial services more generally. The relatively small population and low population density constrains the "scope for growth and economies of scale, while dispersed population

and difficult terrain adds to distribution costs" (TFRF, 2019) and thus many banks and other financial institutions do not have strong geographic reach into rural areas. For households and small businesses, it can be physically difficult to reach a bank branch. Many households do not have a savings account because of the inconvenience, thus making it more difficult to access credit.

Agriculture and forestry sectors, and the small businesses that operate in these sectors, are perceived as risky by financial institutions and access to finance is a key constraint for the business expansion of Micro, Small, Medium-Enterprises (MSMEs) in the agricultural sector. The perception of risk is exacerbated by the lack of insurance products in the country for land use investments. Regulation of the financial sector limits the spread between deposits and credits that financial institutions can offer, discouraging banks from lending to sectors that are perceived as risky.

Many households and businesses lack business planning and financial management capacity. Preparing a business plan or audited financial accounts, for example, are not skills that are widespread in the sectors. This challenge contributes to the perception that the sector is risky.

Interest rates for the sector can be prohibitively high pricing out all but the most profitable investments and financial institutions tend to demand very high levels of collateral.

The formal financial sector is primarily comprised of three state-owned commercial banks: the Banque pour le Commerce Exterieur du Laos Public (BCEL), the Lao Development Bank (LDB), and the Agricultural Promotion Bank (APB). Even though APB has an explicit mandate to operate in the agricultural sector, its rural reach is limited. ACLEDA Bank Lao is a privately-owned commercial bank, with limited but growing coverage of rural areas.

Aside from larger banks, microfinance institutions and village banks play an important role in finance in Lao PDR. Village banks operate entirely on a deposit basis from villagers, and they make their own credit decisions about lending to villagers. GIZ has supported village banks via microfinance institutions, enabling its supported village banks to achieve a combined capitalization of USD 30 million (GIZ, 2021).

A large fraction of financial services operate informally in Lao PDR. When a household or small business needs financing, they may seek this from family and friends, rather than inaccessible formal institutions. Equally, savings are most often not kept in a financial institution but, rather, invested in assets (GIZ, 2021).

3. Climate Problem

3.1 GHG Emissions Profile and Future Projections

The GHG emission profile of the country has been calculated several times, with slight discrepancies and inconsistencies. Lao PDR has submitted two National Communications (NC) and its first Biennial Update Report (BUR) to the UNFCCC including GHG inventories (DOF/MAF, 2020b).

The 2nd NC reported a GHG inventory with 2000 as base year using the 1996 IPCC guidelines, the country's updated Nationally Determined Contribution (NDC) to the UNFCCC adopts emissions and removals from the 2nd NC[21](Lao PDR, 2021c). It is not comparable with the net sink reported for forest land in the first BUR but is broadly consistent with the coverage of the net emissions reported in the annex on REDD+ Results-Based Payments included as a technical annex in BUR. This technical assessment was published in January 2019 in the UNFCCC REDD+ web platform and is based on the initial Forest Reference Emission Level/Forest Reference Level (FREL/FRL) (DOF/MAF, 2020b). In January 2018, Lao PDR submitted its national FREL for REDD+ results-based payments under the UNFCCC for the reference level period 2005-2015. The analysis was based on the 2nd national forest inventory (2015) and the use of high-resolution satellite imagery (DOF/MAF, 2018a). The same dataset was utilized to establish the forest reference level assessment for the programme area and for the ER-Programme accounting area (see next section). Thus, the data sets used for the national Forest Reference Level and the GCF programme are fully consistent.

Based on the above-described datasets and analysis, total emissions of GHG in Lao PDR amounted to **50,742.91 ktCO2eq in year 2000**. Emission sources and sinks from five (energy, industrial processes, agriculture, land-use change and forestry, and waste) sectors are included. Figure 13 below provides an overview of GHG emissions from all sectors from the base year 2000 according to the 3 scenarios: baseline scenario, unconditional mitigation scenario and conditional mitigation scenario (Lao PDR, 2021c).

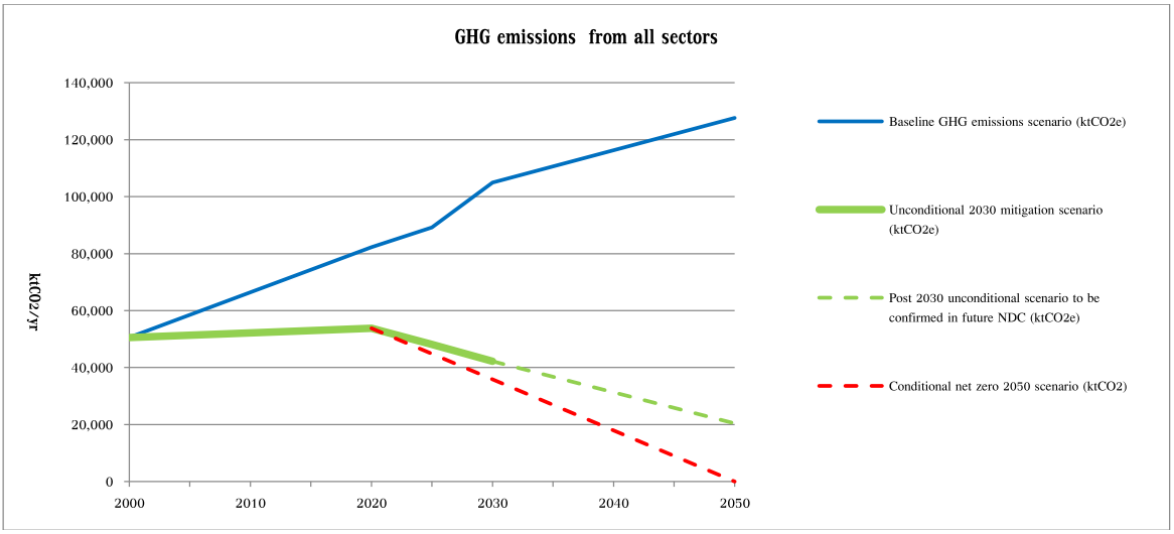


Figure 13. GHG emissions scenarios from all sectors
Source: Nationally Determined Contributions 2021, p. 3

[21] The main difference between the inventory included in the NC and the BUR is that the latter includes an estimate of biomass increase in forest remaining in the same strata based on a gain-loss method, which results in forestlands being reported as a large sink. In view of the lack of robust data to confirm it, the NDC assumes that forest remaining in the same strata are just carbon neutral. Which reduces uncertainties (Lao PDR 2021c).

National GHG emissions in 2020 were estimated at around 53,000 ktCO_2eq through subtracting GHG mitigation measures implemented across all sectors since 2000. Hence, between 2000 and 2020 Lao PDR achieved an emissions reduction of 34% relative to the baseline scenario, emissions growth rate during the period is estimated around 0.3% on average annually. Major mitigation measures were implemented in the LUCF and power sectors during this time, being highly relevant for the country mitigation process (Lao PDR, 2021c).

Greenhouse gas emissions due to deforestation and forest degradation

The AFOLU sector is responsible for the largest share of emissions in the country, in this sector deforestation plays an especial role. It is estimated that forest cover accounted for 70% of the national territory in 1940 (Lao PDR, 2020). Laos is still losing forest cover, especially Natural Forests area has been shrinking with conversion to RV, permanent agriculture (PA), forest plantation (P), reservoirs and so on (JICA, forthcoming).

Forest cover in the country has decreased during the last five decades, with accelerated peace during the 1990s and 2000s (Lao PDR, 2020). However, the rate of decrease has been smaller between 2015 and 2019 (4 years) than previous two 5-year periods as presented in the table below.

Table 4: Forest/Land Use from 2000 to 2019 based on Land use maps produced by FIPD, DOF

			ha	Code	2005	2010	2015	2019
1	Current Forest	Evergreen Forest	EF	11	2,618,169	2,613,226	2,605,557	2,594,961
		Mixed Deciduous Forest	MD	12	9,684,854	9,487,839	9,205,036	9,036,767
		Dry Dipterocarp Forest	DD	13	1,272,006	1,215,712	1,188,198	1,171,873
		Coniferous Forest	CF	14	134,055	125,229	124,772	124,009
		Mixed Coniferous and	MCB	15	142,458	108,567	107,880	106,848
		Forest Plantation	P	16	23,880	110,024	137,965	213,585
		sub total			13,875,424	13,660,598	13,369,408	13,248,043
		%			60.2%	59.3%	58.0%	57.5%

Source: JICA, forthcoming

Table 5: Natural Forest Cover Rate of Lao PDR

2005	2010	2015	2019
60.1%	58.8% -1.3%	57.4% -1.4%	56.5% -0.9%

Source: JICA, (forthcoming)

Lao PDR's historical greenhouse gas (GHG) emissions due to deforestation and forest degradation amounted to 41.013 million tCO_2eq/year in the period 2005-2014, 38.33 million tCO_2eq/year in the period 2015-2016 and 37.29 million tCO_2eq/year in the period 2017-2018. Carbon removals due to reforestation and forest restoration accounted for -7.53 million tCO_2eq/year during the period from 2005-2014, and 8.00 million tCO_2eq/year during the period from 2015-2018. Overall, the AFOLU sector is responsible for 78% of all emissions of Lao PDR (DOF/MAF, 2020b). Table 6 shows the overall uncertainty of the proposed FREL/FRL for emissions and removals.

Table 6: FREL/FRL of the Lao PDR

Source/Sink	2005-2014		
	Amount (tCO2e/year)	Uncertainty range (tCO2e/year)	Uncertainty (%)
Emission (5 strata and selective logging combined)	41,013,316	6,562,648	16.0%
Removal	-7,533,558	-1,457,714	19.3%

Source: Technical Annex of the Biennial Update Report, DOF/MAF, 2020b, p.7

Deforestation and forest degradation in the programme area (2005 - 2015)

In the framework of the ER-PD and the development of the Provincial REDD+ Action Plans, a detailed assessment of the historical proximate drivers of deforestation and forest degradation and the underlying[22] causes was carried out, combining spatial analysis methods, in-depth literature research, and district- and *kumban*-level consultations. In addition, the barriers were assessed that prevent sustainable land use in the GCF programme area. A summary is provided below.

Deforestation and forest degradation were analysed by identifying land cover change using the forest-type maps for 2000, 2005, 2010 and 2015. The mapping is based on high-resolution remote sensing with ground-truthing. The 2010 map was used as the base map to detect changes in the other years.[23] The key results for the programme area are:

- **Net deforestation** from 2005 - 2015 amounted to 197,799 ha, of which the majority (161,581 ha; 82%) was deforested from low-carbon forest stock (Regenerating Vegetation; 64 tCO_2/ha) to non-forest land, which is mainly agricultural land. This deforestation is largely linked to the expansion of agricultural land and shifting cultivation dynamics in the programme area and represents relatively small average carbon stock loss compared to forest degradation.
- **Forest degradation amounted to 116,034 ha** over the period 2005 – 2015. About 115,249 ha (99%) was converted from mixed deciduous high-carbon-stock forest (> 320 tCO2/ha) to regenerating vegetation forest (average carbon stock of 64 tCO_2/ha). This land use transition mainly refers to shifting cultivation and agricultural development activities and is the largest GHG emission source in the programme area.
- **Forest restoration amounted to 51,669 ha**, of which the majority of the land was converted from Regenerating Vegetation to mixed deciduous high-carbon-stock forest (> 320 tCO_2/ha). This reflects the shifting cultivation dynamic of forest degradation and natural regeneration.
- **Reforestation of 162,754 ha** was observed, which is linked either to agribusiness plantation (such as rubber) or agricultural land regeneration towards regenerated forest land use.

Direct and underlying drivers of deforestation and forest degradation in the programme area

The main drivers of deforestation and the underlying causes with the largest impact and importance for programme area are summarized below. The background of the analysis and more details can be found in the ER-PD (Chapter 4) and in the Provincial REDD+ Action Plans (PRAPs) in Chapter 2 for each of the six provinces (developed 2016 – 2018). Underlying

[22] Approaches and Methodology applied for the driver assessment is described in ER-PD 2018
[23] Maps and key information on the assessment can be found in the activity data report, prepared for the ER-PD 2018

causes of deforestation and forest degradation consider demographic, economic, agro-technological, policy and institutional and cultural factors.

- **Pioneering shifting cultivation**[24] is the greatest single proximate driver of deforestation and forest degradation in the project area, responsible for 22% of forest disturbances greater than 5 hectares in size. Agricultural land expansion (19%) and plantation agriculture development (13%) are also significant contributors. Other drivers include road construction (12%), selective logging (10%) and the establishment of tree plantations (7%) (FCPF, 2018). Shifting cultivation, if managed properly (including control of fires), can be sustainable (i.e. rotational shifting cultivation). However, a number of underlying factors are transforming it into an unsustainable, and highly damaging, practice in northern Lao PDR
- **Economic factors:** With increasing competition for land from cash-crops, combined with a growing population, fallow periods are becoming shorter, leading to lower productivity, increased soil degradation and the need to clear more forests for subsistence purposes. Expanding agriculture – notably upland rice, an important subsistence crop in northern Lao PDR– into forest areas through slash and burn practices is typically a last resort among poor families with no other livelihood options. In this respect, shifting cultivation practices act as a safety net for poor and vulnerable groups.
- **Agro-technological factors:** Upland agricultural yields are often limited by seasonal precipitation. For example, upland rice is highly susceptible to drought, weed infestations and a lack of soil conservation practices to limit erosion, which contribute to low productivity. Continual planting of upland rice without intercropping can lead to significant reductions in soil fertility – as much as 80% over 5 years (Linquist et. al, 2005). This reduction of yields drives villagers to clear new forest land that is more productive after clearance. After a few years, the productivity declines again and places pressure on other forest areas.
- **Policy and institutional factors:** Insufficient and inappropriate land use planning is a major underlying cause of deforestation, either because of the complete absence of plans or through a lack of compliance with plans (which, in the past, have often been designed in a top-down manner involving limited consultation with villagers). The absence of integrated spatial planning and watershed planning, as well as village-level participatory land use planning in some villages, is a major underlying cause of deforestation from pioneering shifting cultivation. Uncertainty regarding land uses and border demarcation can lead to unclear rules and gradual encroachment into forests. Even when village land use plans have been developed, without adequate incentive mechanisms to encourage implementation, or sanctions discouraging non-compliance, plans often are ignored. Monitoring the overall compliance with land use plans is weak in many villages and districts, and often areas under cultivation are under-reported, as many areas are illegally cleared (WCS and GIZ, 2015). Unclear land and resource rights and land allocation remain a challenge. Land allocation processes, especially in rural areas, have been hindered by a lack of government capacities, resources and equipment (FCPF, 2018).

The **expansion of agricultural land (permanent agriculture) and plantation agriculture** in the project area is driven by:

- **Economic factors:** Strong regional markets, especially in neighbouring countries, continue to drive the production of key agricultural export commodities such as rubber, sugar cane, maize and cassava. Demand from Chinese and Vietnamese markets is

[24] The Government of Lao PDR clearly distinguishes between two types of shifting cultivation practices in the uplands of Lao PDR, namely: i) rotational (*haimounviang*) and ii) pioneering practices with encroachment into (designated) forest land (at village level) (*thangpha hed hai*). The primary focus of this project is to stabilize the landscape and reduce/avoid so-called pioneering shifting cultivation practices. Rotational shifting cultivation has a long tradition, especially for ethnic groups in northern Laos, and will be respected. Cleary distinguished boundaries between agricultural and forest land are key success factors for landscape stabilization, which will be facilitated through participatory and inclusive processes.

increasing and incentivises the clearing of forests for agriculture. Lao agri-MSMEs play an important role in these supply chains, as they typically act as traders between Lao producers and Chinese and Vietnamese markets. Cultivation of cash crops is seen as a direct route out of poverty for households and as an important economic pillar for provincial governments. While such commodities and markets are important for economic development in Lao PDR, weak land use planning, law enforcement and agro-technological factors contribute to unsustainable conversion of forested land for agricultural cultivation. At the same time, dependence on one cash crop can make households particularly vulnerable to climate change (e.g. if conditions lead to crop failure, losses, or pests and diseases).

- **Agro-technological factors:** The use of low-yield crop varieties, a lack of appropriate management practices and nitrogen loss in soil due to continual planting of crops lead to additional forest being cleared for agriculture. While yields have improved with the adoption of contract farming systems, which have provided farmers with improved maize varieties and agricultural inputs, challenges associated with mono-cropping on steep slopes are still common.
- **Policy and institutional factors:** Land use plans and targets established in provincial and district Socio-Economic Development Plans (SEDPs) are often unaligned, and lead to an inability to monitor and enforce compliance with plans, policies and regulations. Inconsistencies in master planning and zoning are a major underlying cause of deforestation, as these plans are not reflective of the actual land use activities that are implemented.
- **Unsustainable harvesting of wood products** is another important driver of forest degradation within the programme area. It is mainly driven by:
- **Economic and market demand:** Illegal commercial logging is often traced back to the Chinese and Vietnamese export markets, and is especially prevalent in the districts bordering Vietnam. Increasing national regulations and restrictions in the forest sector in China and Vietnam (including a national logging ban in natural forests in Vietnam) have led to increased demand for high-value native tree species in these countries, which has led to an increase in illegal logging in Lao PDR to meet the regional demand for timber. This has, however, reduced in recent years.
- **Policy and institutional issues:** Given provincial plans for road construction and rural electrification, there is a substantial threat of future deforestation if allocated timber quotas are not effectively monitored.

Forest reference emission levels in the GCF programme area (six provinces)[25]

As described in the forest profile above, the six northern target provinces face pressures from land use change based on commercial interests in land use (hydropower, expansion of permanent cultivation of cash crops, unsustainable logging, etc.) as well as local needs for resource consumption, such as shifting subsistence agriculture. (For a detailed assessment of the baseline situation and explanation of the drivers of deforestation and forest degradation, refer to Chapter 5).

For the programme accounting area encompassing six provinces of northern Lao PDR (8.1 million ha, of which 4.3 million ha is natural high-carbon-stock forest in 2015). The baseline Greenhouse Gas (GHG) emissions scenario has been analysed thoroughly as part of Lao PDR's engagement with REDD+ (the UNFCCC Forest Reference Emission Level (FREL)), and the FCPF Carbon Fund (the Reference Level (RL) of the ER-P). The RL estimates net GHG emissions of **8.5 million tCO_2eq per year from the forest sector in the six northern provinces** that constitute the Programme area, driven primarily by forest degradation (6.7m

[25] Adapted from the ER-PD and FREL unless otherwise specified

tCO_2eq/year) and deforestation (3.7m tCO_2eq/year), which are only partially offset by slight gains from reforestation (-1.4m tCO_2eq/year) and forest restoration (-0.5m tCO_2eq/year).

Indicative MRV data for the 6 ER-Programme provinces between 2015-2019 shows annual emissions of 6.5 million tCO_2eq and 0.7 million tCO_2eq removals.[26] Compared to the 2005-2014 baseline scenario the provinces already show some progress in reducing emissions from deforestation and forest degradation. A province-by-province assessment shows substantial results achieved in Houaphan, where BMZ through GIZ and KfW is engaged in Participatory Land Use Planning (PLUP) and Village Forest Management (VFM) since 2012, which is the basis for scaling-up proven approaches through GCF investment under Projects 1 and 2. This demonstrates the importance of sustained engagement resulting in the gradual scaling of proven practices combined with investments in developing capacities, establishing a conducive policy and regulatory framework and monitoring support.

3.2 Climate Change Impacts and Risks

Overall climatology

Lao PDR has a tropical climate with two distinct seasons: i) the rainy or monsoon season (May to mid-October), and ii) the dry season (mid-October to April). The average annual temperature ranges from around 20°C in the Northern and Eastern mountainous areas and plateaus, whereas the plains in the central and southern region have an average temperature in the range of 25 to 27°C (World Bank and ADB, 2021). Precipitation ranges from 1,300 to 3,000 mm, with the highest rain concentrated in the far south, and in the north-central region of the country (especially Luang Prabang, Xiengkhuang and Vientiane, Figure) (FAO, 2021). The northern mountainous areas (above 1,000m) where the target area is mostly situated are described as having “a montane temperature and hilly sub-tropical climate” (GoL, forthcoming). They have an average rainfall between 1,400 to 2,000mm, and average temperatures ranging from 23-28°C (GoL, forthcoming).

More than 50% of the population lives in the tropical lowland plain and floodplains along the Mekong River and its main tributaries. Temperature and precipitation rates have been shown to be sensitive to El Niño Southern Oscillation (ENSO), but generally to a lesser extent when compared to other Southeast Asian nations (World Bank and ADB, 2021).

[26] It is important to note that these figures are indicative as the data has not undergone a process of adjustment, and thus should be treated with caution.

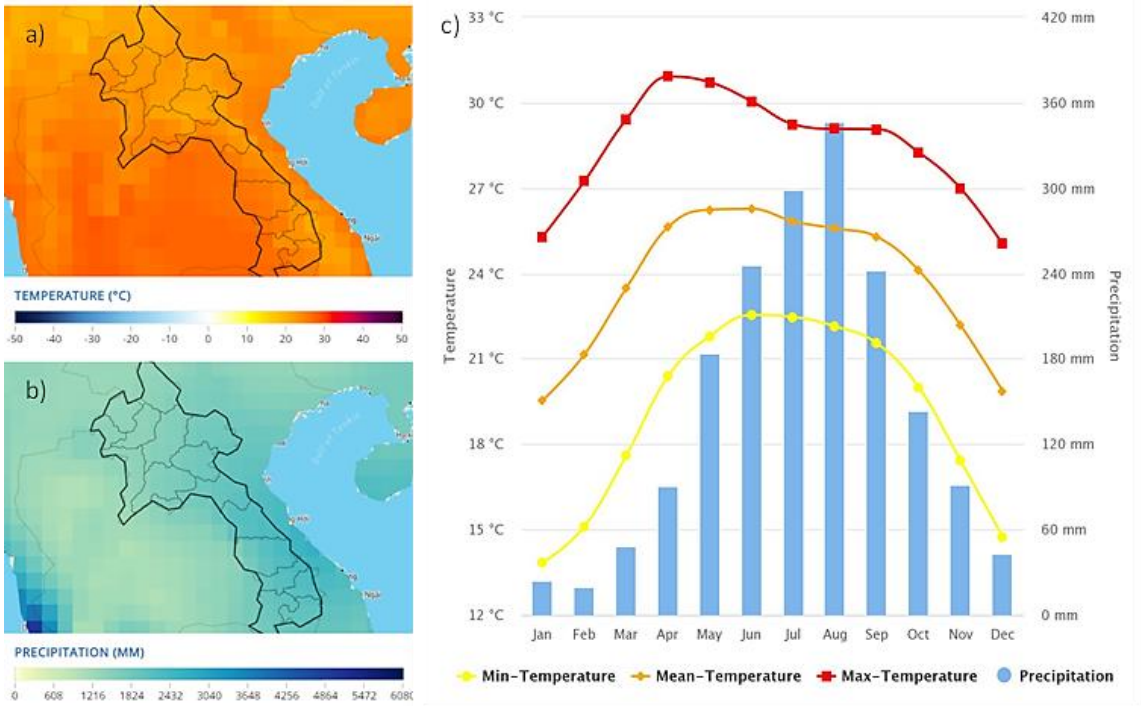


Figure 14. Lao PDR's observed climatology of a) mean temperature, b) precipitation, and c) min-temperature, mean-temperature, max-temperature and precipitation, for the period 1991-2020

Source: World Bank 2021, Climate Change Knowledge Portal. Country: Lao PDR; Current Climate>Climatology

Climate Risk and Vulnerability[27]

Lao PDR is among the top 25-30% of countries in terms of climate change vulnerability, and already experiences the effects of climate change (Eckstein, et al., 2021).[28] It is exposed to multiple climate-related natural hazards, including floods, droughts, wildfires, cyclones, and landslides. During the period from 1966-2009, flooding was the most frequent hazard with an occurrence of 50% of all climate-related hazard in the country; followed by storms and droughts with 14% occurrence each (Lao PDR, 2012). During the period from 1980-2010, at least 33 natural hazard events occurred, affecting approximately 9 million persons, and resulting in damages and losses exceeding USD 400 million (EM-DAT in World Bank, 2011). The Intergovernmental Panel on Climate Change (IPCC) in its latest AR6 report noted that the south-east Asia region has had medium impacts in its agriculture and food systems driven by changes in precipitation regime and droughts (IPCC, 2022). Northern Lao PDR where the project's provinces are located is particularly vulnerable to wildfires, where it experienced the most intense wildfires in the country during the period from 2003-2010 (Müller et al. 2013). Climate change in Lao PDR could aggravate climate-related, which already pose a risk to the region as shown in Table 7 below.

Table 7: Level of risk of climate-related hazards for provinces in the programme area according to ThinkHazard! (see Annex 2d for more detail)

	River flood	Landslide	Cyclone	Wildfire	Extreme heat	Water scarcity
National average	High	High	High	High	Medium	Low

[27] For a detailed climate risk and vulnerability assessment (CRVA) refer to Annex 2d of the funding proposal package.
[28] Lao PDR ranked 45/180 countries analysed in 2019, and 52/180 countries analysed for the period from 2000-2019. For more information see Eckstein, D., Künzel, V., Schäfer, L. 2021. Global Climate Risk Index 2021.

	River flood	Landslide	Cyclone	Wildfire	Extreme Heat	Water scarcity
Bokeo	High	Medium	High	High	Medium	Low
Houaphan	Very low	High	High	High	Medium	Low
Luang Namtha	High	High	High	High	Medium	Very low
Luang Prabang	Low	High	High	High	Medium	Low
Oudomxay	High	High	High	High	Medium	Very low
Sayabouri	Low	High	High	High	Medium	Low

Source: GFDRR n.d.

Observed trends

The country's average annual rainfall trend during the period 1901-2020 shows a decline, particularly during the last 30 years (Figure 15; , 2021a). During the period 1971-2020, most of the central and northern provinces have experienced negative changes in precipitation, while southern provinces, specially Salavan and Xekong, have had a positive change in rainfall between 1971 and 2020 (Figure 16a; World Bank, 2021a). Focusing on the past 30 years (1991-2020), the country experienced declining trends in precipitation in the northwest provinces, particularly in Bokeo, Luang Namtha, Phongsali, Sayabouri, Oudomxay, Luang Prabang, Vientiane, and Xiengkhouang (World Bank, 2021a). Seasonal decreases in precipitation were particularly noticeable in Northwest Lao PDR, especially during the planting season from June until August, which has impacted farmers dependent on rainfed agriculture (NCA, 2009).

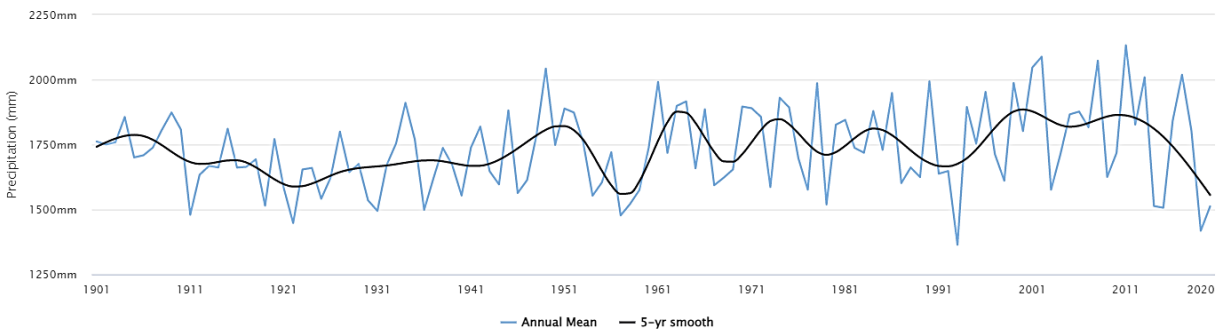


Figure 15. Lao PDR's observed average annual precipitation for the period 1901-2020
Source: World Bank Climate Change Knowledge Portal 2021, Country: Lao PDR; Current Climate>Climatology

In terms of temperature, during the period from 1971 to 2020 Lao PDR experienced an increase in temperature in the range of 0.1°C and 0.8°C (Figure 17a). The mean-temperature annual trend in the last 3 decades (period between 1991-2020) has been increasing faster in comparison with the other two trends for the periods 1971-2020 and 1951-2020 (Figure 17b). The average monthly minimum temperature over the last 30 years displayed less variability; while max-temperature experienced a higher monthly variability with a peak value of 30.92°C and 30.72°C during the months of April and May, respectively.

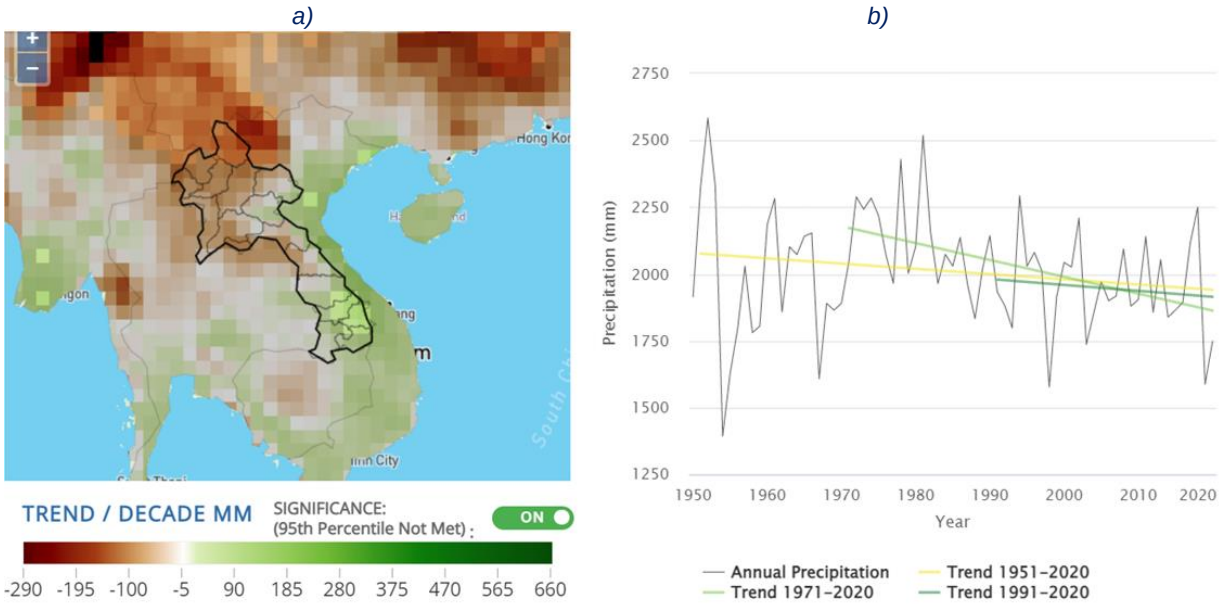


Figure 16. Trends in annual precipitation a) map of Lao PDR showing trend per decade and b) graph of precipitation trends per decade for the period from 1971- 2020

Source: World Bank Climate Change Knowledge Portal 2021

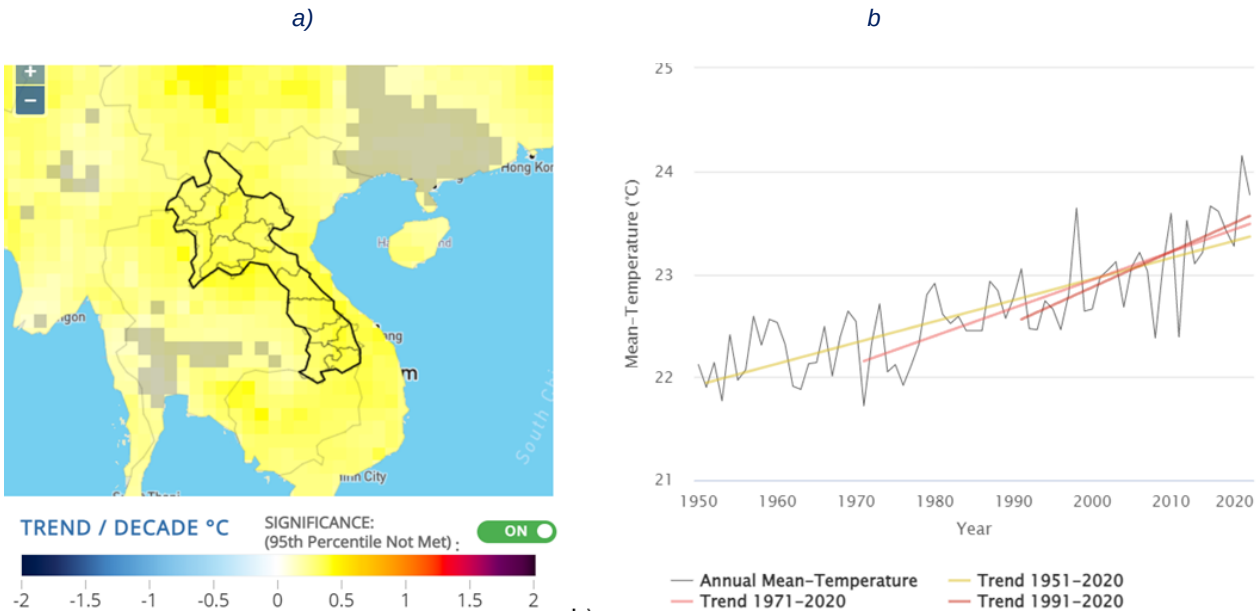


Figure 17. Trends in a) mean temperature and b) mean-temperature annual trends with rends per decade for the period from 1971- 2020

Source: World Bank Climate Change Knowledge Portal 2021

Projections

According the World Bank Climate Change Knowledge Portal (2021), average monthly temperatures are expected to increase by up to 2.15°C by the end of the century under SSP2- 4.5, and up to 4.53°C under SSP5-8.5 (2021a). The biggest increases are projected to occur in the North, especially under SSP5-8.5 projections. In terms of precipitation from 2020-2039, both SSP2-4.5 and SSP5-8.5 project minor changes with slight decreases in average monthly precipitation in Northern Lao PDR and Central Lao PDR. However, after 2040

annual precipitation is projected to increase in the majority of the country under SPP2-4.5 and SSP5-8.5. SSP2- 4.5 sees the largest increases in precipitation in the Central and Northern provinces of the country, while under SSP5-8.5 the country could experience increases above 100mm in the provinces bordering Vietnam, China and Myanmar (see Figure 18 below).[29]

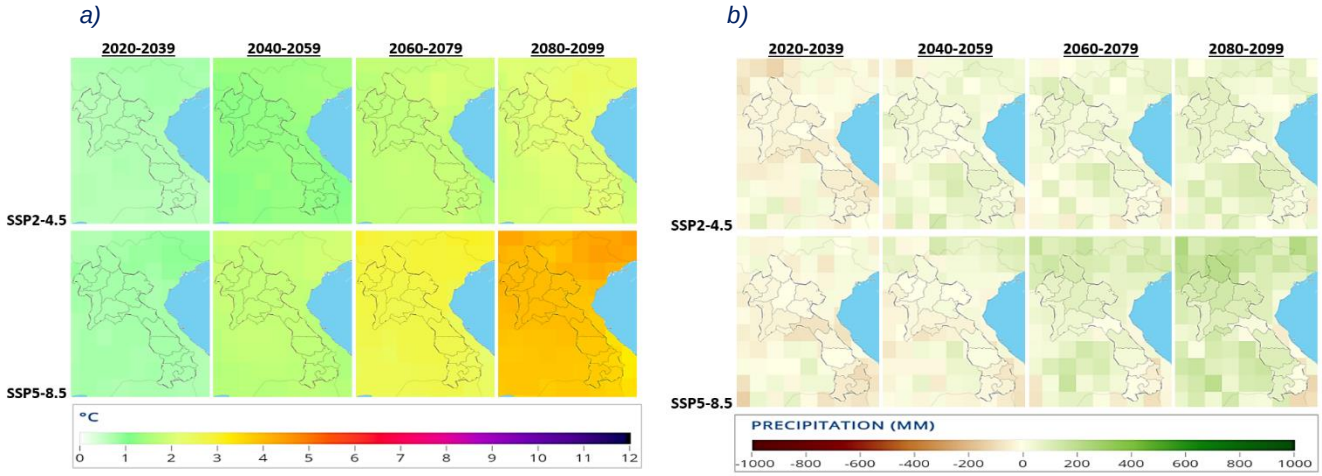


Figure 18. Projected Changes in a) Monthly Mean Temperature and b) Mean Monthly Precipitation under SSP2-4.5 and SSP5-8.5 (Baseline Data from 1986-2005)

Source: Compiled from World Bank Climate Knowledge Portal, n.d.

With the aforementioned climate change projections, climate-related hazards are also expected to increase, where "*dry seasons will get longer, there will be more intense rainfall events, and more frequent and severe droughts and floods*" (Inagaki et al., 2011 in EcoLao, 2012). In addition, forest fires are likely to become more frequent and affect a greater area (WWF Deutschland, 2017). While most fires are initiated by humans, e.g. through the use of fire for shifting cultivation, the continued use of business as usual land clearing practices is expected to trigger more fires in the future due seasonal increases in dry conditions and droughts (WWF Deutschland, 2017).

Climate change exposure, vulnerability and risk

With a ND-GAIN[30] index of 40.5 in 2021[31], Lao PDR ranked 137 among all countries for vulnerability to climate change. While there has been some improvement since the 1990s (ranking 157), much remains to be done. Sectors that are the most affected include agriculture and natural resources and water, representing the key impact pathways for the country. According to the Lao PDR draft Third National Communication to the UNFCCC (forthcoming), Northern Lao PDR includes several districts and provinces that are among the most vulnerable to climate change (Figure 19).

[29] This assessment is mostly comparable with the results that will be presented in the forthcoming Third National Communication (TNC) to the UNFCCC. Within the draft TNC, mean maximum temperatures are projected to increase by 1.3-1.5ºC in Northern Lao PDR under the RCP 4.5 scenario, experiencing the largest increases in the country during this period. In terms of precipitation, it also projects an increase in mean annual rainfall, with majority of the increase occurring in the rainy season. It further highlights Northern Lao PDR is expected to experience different trends, with parts of Sayabouri and Houaphan experiencing among the largest increases in the country with a projected increase in seasonal precipitation, yet Luang Prabang is projected to experience amongst the lowest precipitation increases in the country. More detailed information will be provided within the TNC upon its publication in 2022.; Government of Lao PDR (forthcoming). (*Draft*) Third National Communication to the UNFCCC.

[30] The ND-GAIN Index summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. It aims to help businesses and the public sector better prioritize investments for a more efficient response to the immediate global challenges ahead

[31] https://gain-new.crc.nd.edu/country/laos

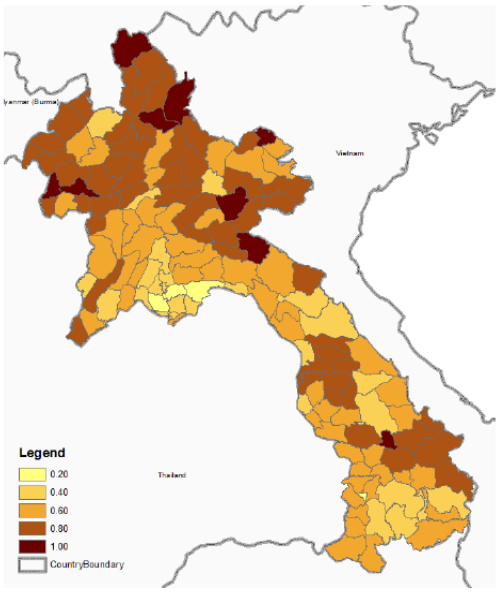


Figure 19: Vulnerability to climate change in Lao PDR (using the AR4 methodology)
Source: Lao PDR Third National Communication to the UNFCCC, forthcoming, page 24.

Exacerbated climate related hazards, as noted within the draft Third National Communication (TNC) to the UNFCCC, are projected to have detrimental impacts on local livelihoods and the ecosystems upon which local communities in the project area depend (Figure 20). Many households in Lao PDR are dependent on the highly vulnerable agricultural sector, where the agricultural sector is the primary source of employment for the majority of people in Lao PDR, with 61% of temperature, precipitation patterns and the occurrence or intensity of climate-related hazards are expected to have detrimental impacts on agro-ecosystems and smallholder farmers the working population employed in the sector in 2019 (63% of female employment) (World Bank n.d.). Northern Lao PDR is particularly exposed to climate change, where many households are dependent on upland rainfed agriculture, characterized by its low productivity, for their subsistence and livelihoods.

a) b) c)

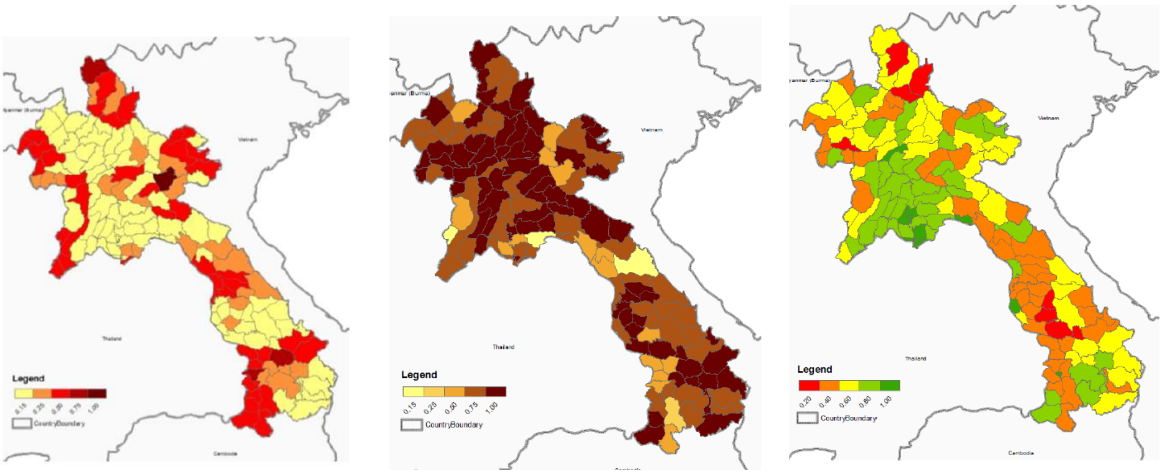


Figure 20. a) Multi-hazard exposure, b) sensitivity and c) adaptive capacity in Lao PDR (using the AR4 methodology)
Source: Lao PDR Third National Communication to the UNFCCC, forthcoming, pages 22-23

In the project area, rain-fed (lowland and upland) paddy rice, maize and vegetables are among the key agricultural crops grown.[32] Changes in temperature, precipitation patterns and the occurrence or intensity of climate-related hazards are expected to have detrimental impacts on agro-ecosystems and smallholder farmers resulting in (World Bank, 2011): changes in planting/ growing seasons, productivity, outbreaks of pests and disease, crop damage and losses, among other impacts. Focusing on some of the main crops in the region, the following impacts are projected (UNDP, 2021):

- ***Maize*****,** one of the main crops in the region, is projected to be negatively impacted by climate change. A study by UNDP found there may be short-term improvements until 2040, but afterwards there will be long-term negative impacts due to increasingly unsuitable climatic conditions for maize production, especially in Northern Lao PDR.
- ***Upland rice*** is projected to have either no changes or slightly negative changes in suitability in Northern Lao PDR, depending on the location. A study by UNDP projects a negative change in suitability especially in Houaphan Province, for both the near future and mid-century scenarios.
- ***Cassava*** is expected to have slight increases in suitability in Northern Lao PDR. A study by UNDP notes that during 2021-2040 by shifting the planting period by up to 2 months earlier it could maximize the suitability of growing conditions.

Households in Lao PDR are further highly dependent on forests for their livelihoods. Approximately 80% of the population relies on forests for their income, food, shelter, medicine and other uses (Lao PDR, 2005). As such, households will be highly exposed to any climate change induced changes on forest ecosystems (e.g. increased frequency and intensity of forest fires, biodiversity loss, changes in species composition and/ or productivity, degradation and disease, among other potential impacts; World Bank, 2011; GoL, 2010).[33]

Deforestation and forest degradation exacerbate climate risk and vulnerability in Northern Lao PDR

Northern Lao PDR is particularly vulnerable to climate change due to low capacities (coping capacity and adaptive capacity), and high sensitivity to climate change (GoL, forthcoming).[34] The forthcoming Third National Communication to the UNFCCC ranked Northern Lao PDR among the most vulnerable areas in the country. The region has a prevalence of shifting cultivation practices and is one of the poorest regions in the country (ER-PD, 2018). The mountainous terrain is highly sensitive to climate change due to its sloped terrain, which is naturally prone to erosion events and landslides (particularly in deforested or degraded areas). At the same time, high rates of deforestation and forest degradation exacerbate the northern regions' vulnerability to climate change. Six provinces in Northern Lao PDR (Bokeo, Luang Namtha, Luang Prabang, Oudomxay, Sayabouri, and Houaphan) experienced more than 40% of the country´s deforestation and forest degradation (in area terms) during the period from 2005-2015, (ER-PD, 2018) which exacerbates the risk of climate-related natural hazards (drought, flooding, forest-fires), and reduces the provision of key ecosystem services that could

[32] Agricultural Census Office 2012 in FP117 Feasibility Study.

[33] Nonetheless, it should be noted that there remain major information gaps related to the impact of climate change on forests in Lao PDR. The 2010 climate change strategy states the following on the matter: "*Due to the complexity of ecosystem interactions, there are many uncertainties in respect to the impact of climate change on Lao PDR's forestry sector*", Government of Lao PDR 2010 P. 10

[34] In terms of sensitivity the Third National Communication assessed the following variables: population density, dependency ratio, % of economically active population, sex ratio of economically active population, % of population employed off-farm, % of population who are unemployed, retired, sick or too old to work, household access to clean water, household access to sanitation, % of protected area in region. (Lao PDR, forthcoming). In terms of adaptive capacity, the following variables were assessed in the Third National Communication: literacy, educational level achieved, percentage of population with a fixed phone line or telecommunication, % of mobile phone used in districts, percentage of computer or internet used in the district, radio access in the district, percentage of television users in the district, road density, electricity access/ coverage, water pipeline coverage, coverage of health care facilities, percentage of villages with a land use plan. It should be noted the Third National Communication uses the AR4 definition of vulnerability.

otherwise strengthen the coping capacity of local ecosystems and the persons who depend on them. The situation regarding forest degradation – which encompasses reductions in forest stocking, changes in species composition and size structure, loss of wildlife and plant habitats, and declines in wildlife and plant populations – is as concerning as deforestation (Thomas, 2015). The main drivers of deforestation and forest degradation are agricultural expansion, shifting agriculture, unsustainable harvesting of wood and non-timber forest products, and infrastructure development.

Deforestation and forest degradation also impact the hydrological cycle, and limit water recharge and storage affecting both water quality and quantity for both local and downstream communities (World Bank, 2020). This not only exacerbates the risk and vulnerability to flooding, but also droughts and forest fires. Deforestation and forest degradation increase the exposure of soils to mass erosion events and landslides, given the mountainous terrain in most of the northern provinces (Thomas, 2015). Erosion contributes to sedimentation and riverbank rise, which contribute to reduced water quality (for human consumption, aquatic life), and an increased risk of flooding downstream where sediments are deposited (World Bank, 2020; GoL 2020). Healthy forests would otherwise help reduce flood peaks due to increased vegetative cover that can slow down flooding, increase soil infiltration and water detention, and reduce erosion and sedimentation), but also droughts (trees would otherwise contribute to microclimate buffering, increased water recharge, reduced soil evaporation, and improved water retention, among other benefits; World Bank, 2020).

The main risks and vulnerability caused by climate change expected for northern Lao PDR are summarized in the following list:[35]

- Increased risk of flooding due to more intense rainy seasons with severe and frequent rainfall. Flooding may lead to substantial erosion, watershed degradation and massive landslides.
- Increased occurrence of droughts and longer dryer season, as well as higher temperatures, greater frequency of heatwaves and delayed onset of rains are likely to affect key crops (such as ride, maize and cassava).
- Limitations for most crops are expected to occur through heat stress, aridity, changes in water demand and supply (evaporation and water balance), and the modification/emergence of pests and diseases. As well as changes in suitability for key crops are projected. Leading to food insecurity.
- Changes in temperature, precipitation patterns and the occurrence or intensity of climate-related hazards are expected to have detrimental impacts on agro-forestry ecosystems and smallholder farmers resulting in: changes in planting/ growing seasons, productivity, outbreaks of pests and disease, crop damage and losses, among other impacts (World Bank, 2011).
- High rates of deforestation and forest degradation exacerbate the northern regions' exposure to climate change. The mountainous terrain is highly sensitive due to its sloped terrain, which is naturally prone to erosion events and landslides (especially deforested or degraded areas).
- Less water availability leading to plants and animals that help ensure soil and forest viability degrade, increasing risk and vulnerability due to flooding, droughts, and forest fires. Water resources are affected by deforestation and degradation, as both limit water recharge and storage. Limited water recharge and storage degrade water quality and quantity for both local and downstream communities (World Bank, 2020).

[35] Information adapted from CRVA in Annex 2d

- Reduction of water quality and increased risk of flooding downstream as a consequence of erosion which causes increase in sedimentation and riverbank rise (World Bank, 2020).
- Increased forest degradation due to higher frequency of forest fires and pest and diseases triggered by higher temperatures
- Low access to safe, clean drinking water. Given that communities rely on rainfall for crop irrigation and that precipitation has decreased for the past 10 years.

The following lists some of the most serious risks posed by climate change in the project region and which will be addressed by Project 2[36]:

- **Risk of reduced agricultural production and food insecurity:** An estimated 25% of rural households in the region are food poor (Pimhidzai et al. 2014 in UNDP 2015). A major limitation for ensuring food security is the region's mountainous terrain, and limited valley space for growing rice paddy (ER-PD, 2018). Local households cultivate upland rice for subsistence; however, yields are low, cultivation requires challenging physical labour, and unsustainable practices can further exacerbate climate change vulnerability (e.g. creating conditions for landslides, mass erosion events, sedimentation, and riverbank cutting downstream etc.). At the same time, climate change poses a risk for future yields of upland rice in some Provinces, such as Houaphan. Moreover, the majority of farmers in the region are dependent on rainfed agriculture, and changes in precipitation patterns could have devastating impacts on food security and agricultural livelihoods in Northern Lao PDR, especially where key crops such as maze are posed to be negatively impacted by climate change.[37] The draft Lao Climate Change Strategy (2021) notes that droughts and floods, among other climate related hazards, are expected to cause losses and damages to agricultural production. It further highlights how flooding has affected rice harvesting, with losses of 30,000 ha (130,000 tons of rice) due to floods in 2017 (Lao PDR, 2021a; Vientiane Times, 2018). Investments are urgently needed in ecosystem-based adaptation, and climate resilient and deforestation free agricultural systems based on climate-informed and holistic planning. Such investments will help strengthen the resilience of agroecosystems and smallholder farming households, while also reducing greenhouse gas emissions and strengthening broader ecosystem resilience (given the current role of agriculture as a main driver of deforestation and forest degradation and which include forest ecosystems, agroecosystems, among others) and the livelihoods that depend on them.
- **Risk of loss of reduced provision of ecosystem services[38]:** Lao PDR´s updated NDC notes that "changes in temperatures and precipitation will trigger variations in hydrology and deteriorations of flood conditions, perturbations for biodiversity, ecosystems and ecosystems services."(Lao PDR, 2021b). The increase in temperatures may increase the frequency of forest fires, and pests and diseases that contribute to forest degradation." (Lao PDR, 2021b). Flooding may lead to substantial erosion, watershed degradation and massive landslides. It further highlights the risk of changes in climatic conditions that could affect the growing conditions and distribution of flora and fauna (GoL, forthcoming). Investments in nature-based solutions to strengthen the resilience of ecosystems,

[37] Impacts on some of the main crops in the region are as follows:

Maize, one of the main crops in the region, is projected to be negatively impacted by climate change. UNDP (*forthcoming*) notes that there may be short-term improvements until 2040, but afterwards there will be long-term negative impacts due to increasingly unsuitable climatic conditions for maize production, especially in Northern Lao PDR.

Upland rice is projected to have either no changes or slightly negative changes in suitability in Northern Lao PDR, depending on the location. UNDP (forthcoming) projects a negative change in suitability especially in Houaphan Province, for both the near future and mid- century scenarios.

Cassava is expected to have slight increases in suitability in Northern Lao PDR. UNDP notes that during 2021-2040 by shifting the planting period by up to 2 months earlier it could maximize the suitability of growing conditions.

[38] Evidence of the impact of climate change on forests and trees itself in Lao PDR is limited.

including forest landscape restoration, are needed to strengthen the resilience of ecosystems against climate change.

3.3 National Climate Goals and Priorities

Lao PDR's updated NDC (2021) puts significant weight on the forestry sector, for both mitigation and adaptation. It states that nature-based solutions shall be prioritized to counter climate-induced disasters such as floods, landslides and droughts. It further highlights that "mitigation co-benefits will be strongly considered in sectoral adaptation strategies and action plans", showing the potential to strengthen the promotion of cross-cutting measures. The updated NDC differentiates between an unconditional and a conditional mitigation target by 2030 and the conditional target also aims at climate neutrality by 2050. In terms of Land Use Change and Forestry the conditional target includes to increase forest cover to 70% through reduced emissions from deforestation and forest degradation, foster conservation, sustainable management of forests, buffer zones of national parks and other preserves, and enhancement of forest carbon stocks. The 70% forest cover target is associated with average annual emission reduction/carbon removals of 45 million tCO_2eq/year. The unconditional target does not include the 70% forest cover, although it is mentioned in a number of other plans and strategies including the updated Forestry Strategy 2030. The financing needs for the conditional mitigation target 2030 are estimated at USD 4.76 billion of which the increase in forest cover alone is estimated at USD 1.7 billion. The unconditional emission reduction target is set at 1.1 million tCO_2eq/year (Lao PDR, 2021b).

In terms of adaptation, forest, agriculture and water resources are listed as priority sectors for climate change adaptation, where there are both mitigation and adaptation benefits of implementing many of the prioritized measures:

- **Forestry**: i) Promoting climate resilience in forestry production and forest ecosystems, including in buffer zones of protected areas and other forested areas, ii) promoting technical capacity in the forestry sector for managing forest for climate change adaptation, and iii) promoting integrated land use planning, natural resources and environment management.
- **Agriculture**: i) Promoting climate resilience in farming systems and agriculture infrastructure, and ii) promoting appropriate technologies for climate change adaptation, including nature-based and circular economy solutions.
- **Water resources**: i) Strengthening water resource information systems for climate change adaptation, ii) managing surface water, groundwater and wetlands for climate change resilience, iii) increasing water resource infrastructure resilience to climate change, including through nature-based solutions, iv) strengthening early warning systems in a timely manner.

The updated NDC (2021) highlights the following barriers and challenges for building climate resilience: weak institutional capacities, absence of sectoral strategies, action plans and indicators in most key sectors, weak cross-sectoral coordination, limited information and knowledge on climate change impacts, lack of access to appropriate technologies, and insufficient finance, among others (Lao PDR, 2021b).

The **National Strategy on Climate Change** (draft 2021): Vision to the year 2050, Strategy and Programs of Actions to the year 2030 provides a comprehensive strategy for climate change adaptation and mitigation in Lao PDR to help guide the implementation of key measures across sectors to meet the country's climate change objectives. The country aims to reduce its GHG emissions and become a net zero emission country by 2050 and *"capable of preventing, resilient, adapting, reducing risks and responding and building back from climate change impacts in more effective and timely manner"*. It highlights the role of capacity building, MRV systems, international cooperation and enhance mainstreaming and readiness for Climate Change Management. Comprehensive well-planned interventions are needed that

consider the intersection of deforestation and forest degradation, and climate change adaptation. For this, the Strategy on Climate Change follows the guiding principles defined in the Decree on Climate change and has formulated three main strategies to 2030:

- Enhance Prevention, Adaptation, and Resilience to Climate Change Impacts;
- Enhance Climate Change Mitigation; and
- Create Enabling Environment, Enhance Mainstreaming and Readiness for Climate Change Management (Lao PDR, 2021b).

The programme design takes these visions into account and will contribute to achieving these goals. The following table provides information on relevant sector actions of the Lao PDR National Strategy on Climate Change.

Table 8: Relevant sector actions of the Lao PDR Strategy on Climate Change

Sector	Description of goals/ targets/actions
Agriculture	• Mainstream climate change into key sectors and enhance the adaptive capacity of the agricultural sector • Promote conservation agriculture and climate-smart/resilient agricultural practices • Improve and monitor water resources and water supply system, and rehabilitation of flood control system • Strengthen financial instruments and capacity development for farmers; support village-based adaptation measures • Enhance sector-based research on climate change adaptation • Enhance agro-climate information services, improving agribusiness value chain by increasing resilience • Develop and improve capacity for the implementation of adaption plans in agriculture sector
Forestry and Other Land Use	• Mainstream climate change in forest policy and management activities • Promote the adoption of climate-resilient practices • Enhance the adaptive capacity of forest-dependent peoples • Pursue and continue carbon market opportunities and introduction into REDD+ by developing and implementing more reforestation and afforestation programs • Identify, make use of, and develop forest ecosystem-based adaptation, land use and landscape for prevention, adaptation, resilience and mitigation of climate change and disaster risks and impacts
Water/ Hydropower	• Development and approval of the law on water and water resources was, law on meteorology and hydrology and other regulations and plans • Develop climate change adaptation strategies and warning systems to enhance resilience and adaptive capacity • Integrate climate change measures into risk management strategies and planning processes • Increase enforcement of measures for adaptation, resilience, water resources use conflicts and impacts (especially for drought and flood)

Source: Lao PDR 2021b

The **Decree on Climate Change** was approved in 2019, its sets general rules to enable mitigation and adaptation actions within Lao PDR, in order to prevent, protect and reduce potential impacts of climate change, aiming to ensure the safety of lives, health, environment, biodiversity, and infrastructure. The decree also highlights the importance of linking with regional and international stakeholders, to contribute to sustainable socio-economic development and green growth. It further encourages individuals, legal entities and organizations to participate, invest, and contribute to climate change mitigation as well as mainstreaming climate change into the national socio-economic development plans, sectorial and local strategies and plans (GoL, 2019).

The Decree on Climate Change has set five guiding principles for climate change management, which are the following (GoL, 2019):

1. To ensure mainstreaming of climate change management into periodical national and local strategies, socio-economic development plans, plans, programs and projects;
2. To ensure effectiveness and efficiency of planification and implementation of adaptation and mitigation measures;
3. To ensure systematic and timely provision of data and information on climate change to the public;
4. To ensure involvement of all stakeholders in the society in climate change activities;
5. To ensure harmonization to international agreements and treaties that the Lao PDR is the party to.

The **National REDD+ Strategy (NRS) to 2025 and Vision to 2030** guides REDD+ implementation in Lao PDR and aims to improve the quality and extent of forests nationwide to provide economic, social and environmental benefits. The NRS been integrated into the 9th SEDP 2021-2025 and other relevant development plans (MAF, 2021b) with support of Project 1. This is further aligned with the country's Forestry Strategy 2030, which includes three core elements: i) Management of forest resources use in a way that is efficient, sustainable, economical and strictly in accordance with the law ii) forest resources conservation in order to protect forests, forestland, flora and fauna, aquatic animals and wildlife, including through preventing and combatting wildfires, supporting forest restoration, and reducing deforestation and forest degradation, among others, and iii) developing the forestry and timber industry in a sustainable manner (Lao PDR, 2021a). . Together these strategies require all stakeholders, including households, communities, and the private sector, to actively participate in the reduction of deforestation and degradation, and the promotion of forest restoration and reforestation (ER-PD, 2018).

Lao PDR has been a partner country in the Forest Carbon Partnership Facility (FCPF) since 2008. Its Readiness Preparation Proposal (R-PP) was accepted in late 2010, its Emission Reductions Programme Idea Note (ER-PIN) was approved in March 2016 and its Emission Reductions Programme Document (ER-PD) was accepted into the FCPF Carbon Fund without conditions at the 18th Carbon Fund Participants Meeting in June 2018. An Emission Reductions Payment Agreement signed in December 2020 for a contract volume of 8.4 million tCO_2eq or up to USD 42 million. A key component of the ER-PD is the articulation of the government's comprehensive strategy to reduce GHG emissions and increase removals from the forest sector in the six target provinces – Houaphan, Luang Prabang, Sayabouri, Luang Namtha, Bokeo and Oudomxay – that comprise the Laos Emission Reductions Programme (ER-P) area. The GCF Projects 1 and 2 form the cornerstone of the ER-P implementation. The GCF project area is identical with the ER-P area and uses the same GHG-accounting system. This six-province strategy of the ER-P is an aggregation and synthesis of Provincial REDD+ Action Plans (PRAPs) developed for each target province in the period 2016-2018. Additionally, the NRS has set the target of reducing GHG emissions from deforestation and forest degradation accounting for 30 million tonnes of carbon dioxide equivalent (tCO_2eq) by 2025, by reducing emissions from forest/tree loss of around 21 million tCO_2eq, and the promotion of removals of around 9 million tCO_2eq through forest restoration and plantation (MAF, 2021b). The GCF Projects 1 and 2 will contribute to this objective.

National Adaptation Programme of Action (NAPA): In addition to the NDC, Lao PDR developed a National Adaptation Programme of Action to Climate Change in 2009. The NAPA notes the stark impact climate change will have on Lao PDR's socio-economic development, especially in the agriculture, forestry, water, public health and energy sectors (Lao PDR, 2009). It notes the agriculture sector will be strongly affected by the increasing severity of floods and droughts. Lao PDR's NAPA highlights the urgent need for action in key sectors, including the following priorities related to the GCF programme, among others:

Table 9: Overview of key priorities related to the proposed programme in Lao PDR's NAPA

Sector	Description of priorities
Agriculture	• Promote secondary professions in order to improve the livelihoods of farmers affected by natural disasters induced by climate change • Land use planning in hazard prone and affected areas • Technical capacities of local agricultural workers in natural hazard prone areas strengthened • Train farmers on the processing and storing of human and animal food stuffs • Promote soil improvement using locally available organic fertilizer and existing agricultural waste • Develop appropriate bank erosion protection systems for agricultural land in flood prone areas
Forestry and Other Land Use	• Strengthen capacity of village forestry volunteers in forest planting, caring and management techniques, as well as the use of village forests • Set up and further strengthen the technical capacity of forest fire management teams at provincial district and village levels • Public awareness campaign to disseminate information on forest and wildlife regulations and laws, wildlife conservation forest-fire prevention and strengthen the implementation of these regulations • Develop agroforestry systems for watershed protection and erosion reduction in steep areas • Construct bush fire barriers/ forest-fire protection buffer zones in forest conservation areas • Carry out surveys and develop forest areas suitable for supporting seed production • Promote and establish tree nurseries to provides saplings to areas at high risk from flooding or drought
Water / Hydropower	• Conservation and development of major watersheds • Repair / rehabilitate infrastructure and utilities damaged by floods in agricultural areas • Mapping of flood-prone areas • Strengthen institutional and human resource capacities related to water and water resource management

Source: Lao PDR 2009

4. Institutional, Policy and Regulatory Framework

4.1 Institutional Framework in the AFOLU Sector

The following table provides an overview of the key government and public sector organizations are relevant for the implementation of the GCF project and the management of natural resources more broadly in the country.

Table 10: Overview of relevant institutions

Name of agency	Governmental function	Relevance to Project
National Institutions		
Ministry of Agriculture and Forestry (MAF)	National-level ministry responsible for policy, management and protection of forestry and agricultural resources.	One of the two main political partners of the project and Executing Entity. Part of the project's governance structure.
National REDD+ Task Force (NRTF)	The NRTF represents diverse economic sectors, including forestry, agriculture, mining, energy and land use planning, as well as includes representatives from the Ministry of Justice, Ministry of Finance, Ministry of Planning and Investment, the Lao Front for National Development (LFND), the Lao Women's Union (LWU) and the Lao Chamber of Commerce; six Technical Working Groups covering the legal framework, land tenure, MRV/REL, safeguards, benefit-sharing, and	The NRTF acts as the Steering Committee of the project.

Name of agency	Governmental function	Relevance to Project
	enforcement and implementation of mitigation activities. The NRTF oversees the development of the National REDD+ Strategy, the Forest Reference Emission Level (FREL) and Forest Reference Level (FRL), the National Forest Monitoring System (NFMS) and the Strategic Environmental and Social Assessment (SESA). The NRTF is chaired by the MAF Vice Minister.	
Forest Protection Fund (FPF)	Hosted under the Ministry of Agricultural and Forestry (MAF). The Decree on the Forest and Forest Resource Development Fund (No. 38/PM, 2005)112 "determines principles, regulations on the establishment, management and monitoring of the Forest and Forest Resource Development Fund [since renamed FPF], aiming at raising funds from people engaged in forestry operations so that funds can be used for management, protection and development of the forest resources and contributed to the national economic and social development". The FPF, renamed from Forest and Forest Resource Development Fund (FFRDF), has a legal mandate to collect and disburse forest sector financing to the district and village levels. It funds forestry activities, including conservation and protection of watersheds and protected areas, tree planting, wildlife conservation and training.	FPF will have its capacities enhanced to mobilize, channel and monitor climate financing, especially through Component 1. This however will be contingent upon the results of the due diligence being carried out by the World Bank, whom currently have decided to pursue an alternative Fund for channelling results-based payments considered in the ERPA.
Department of Forestry (DOF)	A department within MAF responsible for policy development, management and protection of forest resources nationally. Conducts policy analysis, revision and alignment in support of PRAP objectives. Provides capacity building and technical support to PAFO for PRAP implementation. **REDD+ Division under the Department of Forestry (DOF)** - responsible for the overall implementation and coordination of REDD+ activities throughout the country. Supports the Provincial REDD+ Offices (PRO) with capacity building, policy review and revision and in its provincial management duties. **Division of Village Forestry and NTFP Management -** responsible for policy development, guidelines and technical support for the development of village-level forest and NTFP management. Provides technical support and capacity building for PAFO on the implementation of village forest management (VFM). **Production Forest Management Division -** responsible for production forest in Lao PDR.	The National Project Management Unit (NPMU) will be established within DOF

Name of agency	Governmental function	Relevance to Project
	Forest Inventory and Planning Division (FIPD) - responsible for the implementation of the National Forest Monitoring System (NFMS) in the Lao PDR. Provision of information on REDD+ results / Emissions reductions of the ER-Programme an beyond.	
Department of Forestry Inspection (DOFI)	DOFI is responsible for the inspection and law enforcement of forest and wildlife laws and regulations. Provides technical support and capacity building to POFI for provincial-level law enforcement in support of the PRAP.	Will receive support to strengthen interagency cooperation, as well as to improve monitoring and enforcement, especially under Component 3
Department of Agriculture Land Management (DALAM)	A department within MAF responsible for agricultural land management and planning. Provides capacity building and technical support to PAFO for PRAP implementation of land-use plans and land allocation.	One of the leading agencies at a national level for land use planning and activities. Important partner for the project's land use management and tenure security activities.
Ministry of Natural Resources and Environment	National-level ministry responsible for issues related to resource management and the natural environment. **MoNRE – Department of Land Management** A department within MoNRE responsible for land-use planning and allocation. Supports PoNRE – Land Management Section with land-use planning and allocation under the programme.	One of the two main political partners of the project and executing agency. Part of the projects governing structure.
Environment Protection Fund (EPF)	Established in 2005, the EPF serves as a financially autonomous organization to strengthen environmental protection, sustainable natural resources management, biodiversity conservation and community development in Lao PDR. The resources of the EPF shall only be used to finance regular and recurrent expenses of ministries, departments, agencies and any other public or private organizations and entities receiving financial support from the EPF, where these expenses relate directly to the implementation of Eligible Activities. It should be noted that Lao PDR´s Nationally Designated Authority (NDA – MONRE), nominated the EPF as an entity to undergo the GCF accreditation process to become a direct access national accredited entity under the GCF. Currently, EPF is undergoing the accreditation process.	An Executing Entity that will have its capacities strengthened to manage and monitor climate finance. EPF will also continue channelling the funds to Village Forestry and Agriculture Grant (VFAG) under Components 2 and 3 funds and will channel matching grants to agri-MSMEs to support the development of climate-resilient and deforestation free value chains under Activity 2.2.1.
Provincial Level		
Provincial REDD+ Task Force (PRTF)	Provincial cross-sectoral body with responsibility and oversight of REDD+ activities in the province. Bears ultimate responsibility for the implementation of the programme.	Will lead the Provincial Project Steering Committees
Provincial REDD+ Office (PRO)	Provincial body that executes the day-to-day management and coordination activities for the PRTF, including PRAP management and coordination with the programme.	Provides the Official REDD+ Office Reports which can be used as a means of certification for GHG emissions reduced, avoided or removed

Name of agency	Governmental function	Relevance to Project
Governors' Office	Provincial administrative office responsible for establishing provincial development goals and strategies. Provides overall guidance to the PRAP process and ensures provincial line agencies conform to PRAP objectives.	Important partner at a Provincial level, especially for participatory land use planning activities
Provincial Agriculture and Forestry Office (PAFO)	Provincial line agency to the Ministry of Agriculture. Same remit as MAF but at the provincial level. Main body to coordinate the implementation of PRAP and programme activities. **Agriculture Section -** Provincial line agency to the Department of Agriculture. Provides technical implementation support, coordination and capacity building for DAFOs for the implementation of agriculture sector-based PAMs. **Agriculture and Land Management Section -** Provincial line agency to the Department of Agriculture Land Management. Provides technical implementation support, coordination and capacity building for land-use planning and allocation under the PRAP. **Forestry Section -** Provincial line agency to the Department of Forestry. Responsible for the management and protection of three forest categories at the provincial level. Provides a critical role in the implementation of several of the Forestry Sector PAMs. **Agriculture and Forestry Research Section -** Provincial line agency to NAFRI. Supports research into alternative agricultural production methods and approaches. **Agriculture and Forest Extension Section -** Provincial line agency responsible for forest and agricultural extension services. Critical role in supporting DAFO and local communities with capacity building and training on the adoption of new agricultural and forestry production methods. **Planning and Management Section -** Administrative section of PAFO. Responsible for planning and monitoring of PAFO activities. Ensures PAFO activities achieve PRAP plans. Critical role in the M&E of the programme. **Irrigation Section -** Provincial line agency to the Department of Irrigation. Responsible for expanding access to irrigation infrastructure for agricultural cultivation, primarily for rice production. Provides technical support and capacity building for the expansion of paddy area in the province under the PRAP. **Livestock and Fishery Section -** Provincial line agency responsible for the provision of capacity building and technical support in the development of improved livestock production methods in the province under the PRAP.	Important district level partner. Will receive support for capacity development on sustainable, climate resilient and deforestation free agricultural practices, as well as climate change adaptation within village forestry.

Name of agency	Governmental function	Relevance to Project
Provincial Offices of Forestry Inspection (POFI)	Provincial line agency to the Department of Forestry Inspection responsible for the inspection and law enforcement of forest and wildlife laws and regulations. Supports the implementation of forest law enforcement measures within the programme.	Will receive support to enhance capacities related to monitoring of forest cover
PONRE	Provincial line agency to MoNRE, responsible for land-use planning and allocation under the PRAP and programme.	Will receive support to increase capacities related to climate risk and vulnerability, climate change adaptation, climate resilient, deforestation free and low-emission SLM.
Private Sector	Based on provincial planning and PAM financing protocols developed, can play a role in the execution of PAM financing and the development of innovative agricultural and forestry investments and business models.	Will receive incentives and support to invest in climate resilient and low emission activities agricultural and forestry activities.
District Level		
District Agriculture and Forestry Office	District line agency to PAFO and MAF. Responsible for the on-the-ground implementation of agricultural and forestry PAMs at the district level. Closest point of contact with local communities.	Continued support for capacity development, especially on topics of REDD+, climate change, and gender and social inclusion.
District Offices for Forestry Inspection (DOFI)	District line agency to POFI and DOFI responsible for the implementation of forest law enforcement, coordinating with POFI. Closest point of contact with local communities.	Will receive support to improve monitoring and enforcement capacities.
DONRE	District line agency to PONRE and MoNRE. Responsible for the on-the-ground implementation of land use planning and allocation at the district level in coordination with PONRE. Closest point of contact with local communities.	Will receive support to enhance capacities to continue to support and eventually replicate and scale up investments in climate resilient, deforestation free and low-emission sustainable land management.

4.2 Policy and Regulations

The importance of forest resources and their sustainable management, as well as climate action, are enshrined in the country's highest-level policies. The following sections provide an overview of the key national and sectoral policies, plans, strategies (Chapter 4.3) and laws in Lao PDR for Climate Change Mitigation and Adaptation in the Agriculture, Forestry and other Land Use Sector. The design of the GCF Project 2 is closely aligned with the development objectives and the programme will support the key governmental priorities such as:

- Transition to a middle-income developing country, with inclusive, stable and sustainable economic growth, balancing socio-economic development and environmental protection
- Sustainably develop the agriculture and forestry sectors to ensure food security and environmental protection
- **Forest cover to reach 70%** of the total land area, using forest resources sustainably, with maximum efficiency and in strict accordance with laws and regulations, contribute to boosting the country's economy and improving people's lives, protecting the environment and biodiversity.
- Forest growth to reach 1.5% per year
- Establishment of mechanisms to manage forest resources efficiently and sustainably

- Establish financial mechanisms, regulations and a database for studying, managing and reducing GHG emissions arising from deforestation and forest degradation to ensure that revenue from the forestry sector is used to restore and manage forests

Land and Forestry laws

The new **Land Law No.70/NA (2019)** is the principal legislative instrument governing the management, protection and use of land in Lao PDR. It came into force on 27 August 2020 after years in revision, replacing the Land Law of 2003**.**

Article 3 of the Land Law reaffirms Article 17 of the Constitution, through which land is under the ownership of the national village, and the State is charged with the centralized and uniform management of land, including allocation. Additionally, it sets a regulatory framework for the Land Allocation Master Plan, Land Use Strategy and Land Use Plan which shall be formulated at national, provincial and local scale (Part II). Under the *Land Law No.70/NA (2019)*, all land is classified into a category for which boundaries must be determined. The eight Land Categories are:

- agricultural land;
- forest land;
- water areas;
- industrial land;
- communication land;
- cultural land;
- land for national defence and security; and
- construction land (Land Law, 2019).

According to this Law (Article 123), Lao citizens including Lao legal entities and organization will obtain land use rights on one of the bases: i) allocation by the State; ii) transfer; iii) inheritance; or iv) sale of allocated State land use rights with determined timeframe. Land shall be utilized with minimum impacts on the environment, society and the nature. The Category of Land determines the scope of use, including allocation to the State, individuals or for lease, concessions or infrastructure development (Land Law, 2019).

The change of land from one Land Type to another Land Type can be made only if it is considered to be necessary to use the land for another purpose without having negative impact on the natural or social environment and must have the prior approval of the concerned management authorities and is in line with the Land Allocation Master Plan (Article 25). For Agricultural Land Planning (Article 34), the MAF, in collaboration with the MoNRE, other relevant ministries and local administrative authorities, should take the lead in elaborating an Agricultural Land Use Plan that is consistent with the Land Allocation Master Plan and strategy for the management of agricultural lands (Land Law, 2019).

The Forestry Law (No.08/NA, 2019), revised from the previous Forestry Law (No.06/NA, 2007), determines the basic principles, regulations, and measures for the use of forest and forestland. This includes promoting tree plantations, regenerating and increasing forest resources, ensuring protection of soil, water sources, and biodiversity, environmental protection, and sustainable economic development. The Law defines a number of terms with relevance to the programme (MAF, 2021a):

- Three categories of forest: Protection Forests, Conservation Forests and Production Forests

- Village forest area is defined as area categorized as forest that is under village management. Village forest management planning measures are prescribed in specific regulations.
- Forest regeneration through supplementary planting is defined as regeneration plus the option to plant trees in areas where there is little possibility of natural regeneration.
- The Forest and Forestland Management Organization, and local administration authorities and involved sectors, are responsible for formulating short, medium and long-term plans for forest regeneration and tree plantations in their local area.
- Utilization of forests, timber and NTFPs is classified into 4 categories as follows: i) Utilization of forests, timber, and NTFPs for public benefit; ii) Utilization of forests, timber, and NTFPs for household use; iii) Customary utilization of forests, timber, and NTFPs; and iv) Utilization of forests, timber, and NTFPs for business purposes
- A lease or concession of forestland for activities based on forest ecosystem services is allowed only in areas allocated by the Government
- The Government encourages individuals, legal entities and organizations to conduct trade in forest carbon under international mechanisms, based on agreements with the Agriculture and Forestry sector and the granting of a business license by relevant sectors.
- Natural forest and forestland is "*the property of the Lao nation community*," which is managed by the state with the participation of the people (MAF, 2021a).

Forests and trees planted by individuals and legal entities, recognized by the Forest and Forestland Management Organization, duly become the property of the individuals and entities. Article 9 of the Forestry Law further states that the state has responsibility for relationships and cooperation with foreign countries and organizations on forest and forest land (MAF, 2021a).

Within the Forestry Law and Land Law there are limited practical guidelines for implementation. There are many implementing decrees and regulations underneath the Forestry law – this makes it more complex to understand and means that the regulations need to be very clear and specific (implementable for local authorities to follow). It also means extensive formulating and updating of regulations is needed following revisions to the Law. Regulations for sustainable land use activities are at times complex, contradictory, inconsistent and/or unclear. Support is needed to continue to address such gaps and inconsistencies in the regulatory framework to create an enabling environment that facilitates and encourages stakeholders to adopt sustainable forest management, forest landscape restoration and village forestry – all key activities aligned with Lao PDR's REDD+ objectives (FCPF, 2018).

Regarding the forestry sector, Lao PDR has been a partner country in the **Forest Carbon Partnership Facility (FCPF)** since 2008. Its Readiness Preparation Proposal (R-PP) was accepted in late 2010, its Emission Reductions Programme Idea Note (ER-PIN) was approved in March 2016 and its Emission Reductions Programme Document (ER-PD) was accepted into the FCPF Carbon Fund without conditions at the 18th Carbon Fund Participants Meeting in June 2018.[39] A key component of the ER-PD is the articulation of the government's comprehensive strategy to reduce GHG emissions and increase removals from the forest sector in the six target provinces – Houaphan, Luang Prabang, Sayabouri, Luang Namtha, Bokeo and Oudomxay – that comprise the Laos Emission Reductions Programme (ER-P) area. The GCF project area is identical with the ER-P area and uses the same GHG-accounting system. This six-province strategy of the ER-P is an aggregation and synthesis of Provincial REDD+ Action Plans (PRAPs) developed for each target province in the period

[39] https://www.forestcarbonpartnership.org/carbon-fund-eighteenth-cf18-june-20-22-2018-paris.

2016-2018.[40] On December 30th the GoL and the FCFP signed the Emission Reductions Payment Agreement (ERPA) over 8.4 m ERs (FCPF, 2020).

4.3 Development Plans and Strategies

The following are the most relevant policies, plans and strategies for the project and associated sectors. Table 11 presents an overview of the key national and sectoral strategies and plans which are relevant for the proposed programme with a description of the actions, targets, and objectives related to Climate Change Mitigation and Adaptation in the Agriculture, Forestry and other Land Use Sectors.

Table 11: Overview of key national and sectoral strategies and plans in Lao PDR for the proposed programme

Strategy/ Plan	Description of actions/targets/objectives
Vision 2030 for socio-economic development[a]	• Transition to a middle-income developing country, with inclusive, stable and sustainable economic growth, balancing socio-economic development and environmental protection • Sustainably develop the agriculture and forestry sectors to ensure food security and environmental protection • Improve the effectiveness and sustainability of natural resource utilization
Strategy 2025 for socio-economic development[b]	• Graduate from LDC Status by 2025 • Economic diversification, poverty eradication, reduced population growth • Enhance agricultural productivity to promote inclusive growth • Promote environmental management to address the effects of climate change, strengthen resilience to natural disasters, and ensure that the social, environmental and economic impacts of activities in the resource sector are fully understood
National Green Growth Strategy[c]	• Forestry agenda as a priority, increase forest cover and promote green urban areas • Promote the use of economic tools to promote domestic and foreign investments in tree planting in deforested and degraded land in order to meet the 70% forest cover target • Promote agro-technological solutions to promote environmentally-friendly and climate-smart agricultural practices, as well as alternative livelihoods to shifting cultivation • Strengthen the environmental management sector, including the regulatory frameworks, capacities and standardize environmental management practices • Financial mechanisms, including environmental taxes and payments for ecosystem services (PES), are proposed to support the implementation of the strategy, alongside intentions to access concessional loans and private sector investments
Forestry Strategy to the Year 2035 (as of May 2021)[d]	• Main purpose: Contribute to the three main pillars of socio-economic development, the national green growth strategy and the Sustainable Development Goals (SDGs) In order to achieve the set targets, the forest strategy consists of 3 programs and 12 action plans: • **Management of forest resources use**: use of forests, wood and NTFPs; Manage forest land for business; Manage forests at the village level and improve the livelihoods; Ensure timber and wood products legality system; and trade in aquatic animals, wildlife and wild plants • **Forest Resources Conservation**: Survey, identify and approve forest types and forest land; Protection of forests and forest land; Conservation of tree species, NTFPs, rare and endangered wildlife; and preventing and combatting hazards and wildlife and flora crime • **Forest Development, Forestry Sector and Timber Industry**: commercial tree planting and environmental protection; rehabilitate and improve forest quality; and strengthen the forestry sector and the forest protection fund.

[40] The PRAPs are provided as Annex 22i-22n of the FP 117 package.

Strategy/ Plan	Description of actions/targets/objectives
National Biodiversity Strategy and Action Plan (2016-2025)[e]	• Protect the country´s diverse and economically important ecosystems (e.g. monitoring and enforcement of forest protection rules; increase in number of household beneficiaries from village forestry-oriented programme's in biodiversity hotspots) • Integrate the value of biodiversity to socio-economic decision-making (e.g. integrating integrated spatial planning in development/planning activities) • Strengthen the knowledge-base on biodiversity information and value • Improve communication, education and public awareness on biodiversity
National Master Plan on Land Allocation (start 2018 until 2030)[f]	• Reach and maintain a 70:30 ratio balance in terms of conservation and development objectives of land management. 1. 70% of land under conservation and protection objectives should consist largely of conservation and protection forest land, as well as reserved areas, where management objectives are set towards watershed management, biodiversity and ecosystem conservation among others. 2. 30% of land will be reserved for residential areas, industrial areas, transport infrastructure, as well as agricultural and production (commercial) forest area. • Identify land use objectives, taking into account the context on the ground to overcome barriers and challenges associated with land allocation
National REDD+ Strategy[g]	• Allocate 16.5 million ha to forestland (70% of the country's total area) • Prepare forestry staff stations to improve forest management and to develop a strict legal management system. • Guide REDD+ implementation, including with the participation of all relevant stakeholders in the country and all phases. • The target for reducing GHG emissions from REDD+ is a reduction of 30 million tCO_2eq by 2025. • Improve the quality and extent of forests nationwide to provide economic, social and environmental values • Active participation of stakeholders for strategy implementation to reduce deforestation and degradation, and promote forest restoration and reforestation
Agriculture Development Strategy to 2025 and Vision 2030[h]	• Main purpose: safeguard food security, produce competitive agricultural commodities, clean, safe and sustainable agricultural development and shift towards modernization of a resilient and productive agriculture economy. • Continue the implementation of land and forest allocation and zoning policies. • Improve agriculture and development legislation and policy to manage agriculture and forestry and manage production forest, village forest, plantation forest and other prioritized activities • Promote research in order to adapt to climate change and use biodiversity in sustainable ways. • Encourage the growth of sustainable forest utilization, including NTFPs and capacity building.
9th Five-Year Socio-economic Development Plan (2021-2025)[i]	• Guarantee food security and products for export. • Forest growth to reach 1.5% per year. • Human resource development programmes in agriculture, forestry and rural development. • Preserve, protect, and enhance the cultural heritage of the nation and ethnic communities in a sustainable manner. • Poverty alleviation in rural areas • Sustainable use of natural resources and natural risk reduction • Develop comprehensive plans for land allocation and management of natural resources and the environment, for all provinces (effective implementation of the Land Law)

Strategy/ Plan	Description of actions/targets/objectives
	• Promote the sustainable management, protection and use of community forests in order to reduce degraded forest areas Promote and encourage domestic and foreign private investment in afforestation or planting trees in degraded forestland areas to expand forest cover for climate change mitigation and to meet wood processing needs and export industries to boost economic growth, create jobs, reduce poverty and improve people's livelihoods. • Ensure the implementation of the NDC and GHG emission reduction mechanisms such as the REDD+

Sources: a) MPI 2016b; b) ; c) Lao PDR 2018; d) Lao PDR 2021 ; e) MoNRE 2016; f)Vientiane Times 2018 ; g) MAF 2021; h) MAF 2015); i) MPI 2021

Socio-economic Development Plans

While many of these documents provide the key regulatory framework and provide medium- to long-term direction for the countries development path, critical documents for short- and medium-term planning and the implementation of these strategies and visions are the country´s socio-economic development plans (SEDPs).

Government SEDPs at the national, province and district levels are prepared as 5-year plans and are the primary strategic reference for government entities to fulfil their work. Currently, the Government of Lao PDR is in the 9th SEDP planning cycle that runs from 2021-2025, which will be followed by the 10th planning cycle from 2026-2030, etc. SEDPs and sectoral plans are the basis for government budgeting, and thus it is crucial that REDD+ related interventions are integrated. They are outcome-based plans, including clear development outcomes and outputs corresponding to the sector. Provincial and district development plans should be able to show harmonization with national plans and are closely aligned with available sources of funding (including government budget, grants, loans, domestic and foreign private investments, and investments in the financial system (MPI, 2016).

The past 8th National SEDP (2016-2020) specifically mentioned the implementation of REDD+, noting the need to "enhance and develop REDD+ projects to reduce GHG emissions" as a priority action (MPI, 2016a). While this demonstrates strong government commitment to REDD+, there is a need to further incorporate REDD+ into national SEDPs (2021-2025; and 2026-2030), to specifically strengthen the link with priority actions and clear national targets, and enhance REDD+ mainstreaming across sectors, especially in infrastructure, forestry and agriculture which are closely linked to deforestation and forest degradation (MPI, 2016a).

In addition, national, province-level and district-level SEDPs tend to be inconsistent and interventions are not fully in line with the objectives of the national REDD+ Strategy and (PRAPs) that were developed in the timeframe 2016-2018. This is compounded by the fact that many provincial and district-level SEDPs do not directly mention REDD+, and thus limit the awareness of REDD+ as a priority action and limits the setting of provincial- and district-level targets as well as budget allocation for REDD+ priority measures. This has led to difficulties to monitor and enforce compliance with plans, policies and regulations, and competition between competing sectors. Thus, the weak integration of REDD+ is seen as a barrier to REDD+. Also, sub-national level plans (SEDPs and PRAPs) have not been updated since they were last formulated. Although they are still relevant at local scale, they do not take into account new guidelines, plans or laws that have been formulated or updated in recent years.

The 9th National SEDP (2021-2025) aims to translate the Resolution of the 11th Party Congress, and continue the implementation of the National Strategy on Socio-Economic Development 2025 and Vision 2030 of the country. This SEDP sets out a fundamental direction for "*creating a new turning point in socio-economic development in the coming years*" (MPI, 2021). In order to achieve its core objectives of: graduating to a middle-income country;

balance between economic, social and environmental development; and overcoming weaknesses and increasing preparedness towards emergent challenges, such as the COVID-19 pandemic and climate change, among others. The 9th National SEDP has been designed with 6 main Outcomes. The project contributes in particular to the first outcome "*Continuous quality, stable and sustainable economic growth achieved*" and forth outcome "*Environmental protection enhanced and disaster risks reduced*".

The importance of the continued implementation of the NDC and GHG mechanisms such as REDD+ projects is highlighted in order to contribute to international GHG mitigation. Additionally, climate change adaptation and community-based adaptation should be mainstreamed into sectoral development plans in order to protect people from natural disasters (MPI, 2021). For further information on National Climate Goals and Priorities see Chapter 3.3.

5. Project Baseline and Barriers

5.1 Problem Analysis

5.1.1 Problem Statement

The AFOLU sector, largely driven by deforestation and forest degradation, is the largest contributor to GHG emissions in Lao PDR. The six provinces in Northern Lao PDR (Bokeo, Houaphan, Luang Prabang, Luang Namtha, Sayabouri and Oudomxay) experienced more than 40% of the country's deforestation and forest degradation during the period from 2005-2015. Deforestation and forest degradation also exacerbate the risk of climate-related natural hazards (drought, flooding, forest-fires), and reduce the provision of key ecosystem services that could otherwise strengthen the coping capacity of local ecosystems and the persons who depend on them in Northern Lao PDR. This is a region that is already particularly at risk of climate change due to its high exposure, low capacities, and high sensitivity as villagers in the region are largely dependent on rainfed upland agriculture to maintain their livelihoods. Actions to address the drivers of deforestation and forest degradation are urgently needed for Lao PDR to be able to meet the climate change mitigation objectives outlined in the NDC and to enhance the climate resilience of persons and the ecosystems on which they rely.

5.1.2 Baseline Analysis – Need for Project 2

Project 1 developed a foundation for the transformational change in the project area, however, to fully reach the paradigm shift towards low-emission and climate resilient forest and land use practices, additional support is needed – as outlined in the programmatic approach within FP117. Project 2 is complementary and additional to Project 1. Together both projects will facilitate a paradigm shift in the forestry and land use sector in Lao PDR that will be sustained by unlocking additional sources of results-based payments, as well as public and private finance managed through national funds and institutions with strengthened capacities for mobilizing and channelling climate finance.

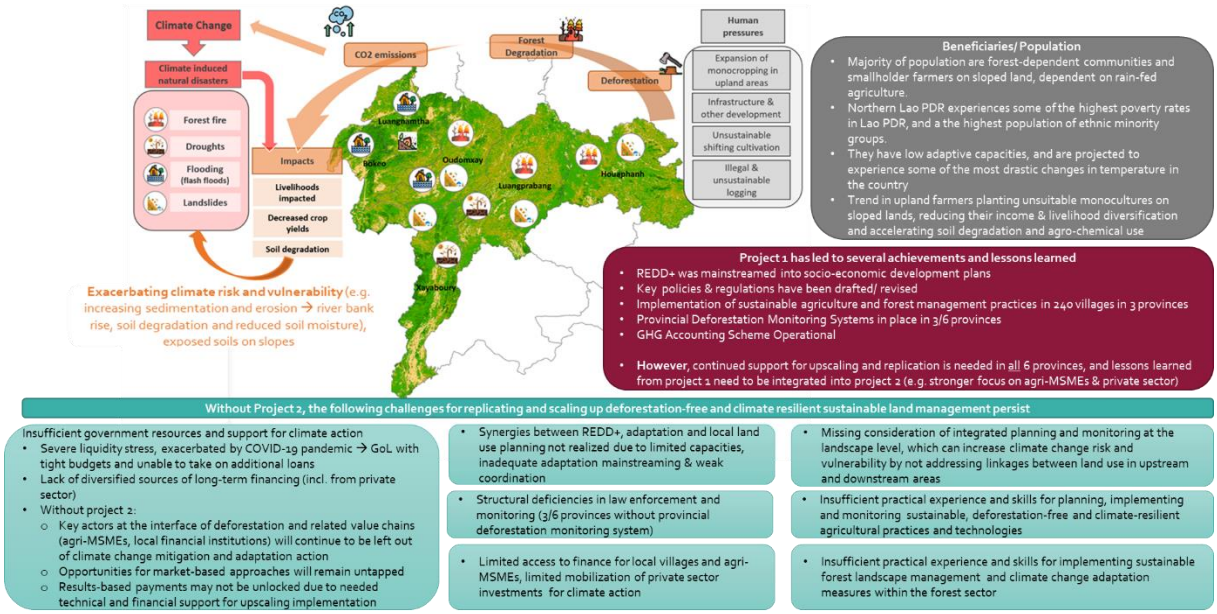


Figure 21. Scenario without Project 2

5.1.3 Gaps and Complementarity with Other Development Initiatives

Several related projects with clear synergies to Projects 1 and 2 have been and continue to be implemented in the project area. An overview of the main project with synergies is provided in the table below (Table 12), and a more comprehensive summary is provided in the appendix. Donors and implementing organizations have been consulted during the project development process, to identify opportunities for continued collaboration and to share lessons learnt. These lessons have been captured and reflected in the design of Project 2.

Table 12: Overview of complementarities with other initiatives

Project, implementation period, donors	Budget	Description and synergies
Sustainable Rural Infrastructure & Watershed Management Sector project (2020-2027) ADB, EU, IFAD, GIZ	USD 95 million	▪ Aims to address issues of productive rural infrastructure (PRI) and watershed management. ▪ Provides co-finance for Activity 2.1.3.
Partnerships for Irrigation & Commercialization of Smallholder Agriculture (PICSA) (2019-2025) IFAD	USD 85 million	▪ Aims to enhance livelihood resilience and sustainability towards inclusive local economic development ▪ Provides co-finance for Activity 2.1.3.
ProFEB Protecting forest ecosystems & biodiversity (2021-2024), BMZ implemented by GIZ	EUR 8 million	▪ Aims to implement a multi-stakeholder approach which improves the regulatory and institutional framework to conserve forests and biodiversity.
Village Forestry Management Project (2018-2026), BMZ implemented by KfW	USD 8 million	▪ Aims to improve forest ecosystems and the livelihood of the population in the project areas by the sustainable management of village forests. ▪ Provides co-finance for Component 3 implementation
Integrated conservation of biodiversity and forests (ICBF) (2015-2022) BMZ implemented by KfW	EUR 18 million	▪ Aims for the effective management of selected target landscapes (comprising national protected areas and corridors) sustaining biodiversity in forest ecosystems, while supporting livelihoods of forest-depending villages.

		▪ Activity 3.2.1 is modelled off the ICBF approach, and KfW provides co-finance for Project implementation.[41]
FCPF Carbon Fund: Lao PDR Northern Laos Emission Reductions Payments Project (2021-2025) WB	USD 42 million	▪ Projects 1 and 2 have been designed to support the implementation of the overarching FCPF Carbon Fund ER-P. ▪ Results-based payments achieved under the ER-Programme will be reinvested through Activities 2.1.4 and 3.1.2 under Project 2.
F-REDD+ 2 (2022-2027), JICA	N/A	• F-REDD 2 Project will support the GoL to promote the implementation of FS 2035 and national REDD+ strategy, national forest monitoring system, and REDD+ capacity building in Savannakhet Province. • JICA support for national level forest monitoring, and capacity building will support the sustainability of Project 2.
Land Management & Decentralized Planning (LMDP) (2015-2023) BMZ	EUR 7 million	▪ Aims to improve land management and support decentralized land use planning ▪ Geographical overlap in 3 provinces. Villages with land use plans supported by the LMPD project will be targeted by the GCF project. LMPD project does not support the implementation of the village management plans, the GCF project will fill this gap.
Scaling-Up Participatory Sustainable Forest Management Project (SUPSFM) (2013-2022) WB/IDA	USD 39 million	▪ Aims to reduce carbon emissions through participatory sustainable forest management in priority areas and to pilot forest landscape management. ▪ SUPSFM has had a strong focus on activities within production forests, which has informed the design of Projects 1 and 2.
Lao Agriculture Competitiveness project (LACP) (2018-2024) WB	USD 29 million	▪ Aims to increase the competitiveness and sustainability of selected agricultural value chains. Geographical overlap is only in Sayabouri. ▪ Strongly linked to Component 2. World Bank will oversee the implementation of Activity 2.1.4, and regular communication will be ensured (including on lessons learned and best practices)
Second Lao Environment & Social Project LENS II (2014-2022) WB/IDA, GEF, GoL	USD 42 million	▪ Aims to strengthen selected environmental protection management systems, such as protected areas conservation. Finance has been channelled through EPF. ▪ LENSII contributes to capacity building of EFP - who will serves as an EE under GCF Project 2. As WB will oversee the implementation of Activities 2.1.4 and 3.1.2, regular communication will be facilitated.
Climate Friendly Agricultural Value Chain Project (CFAVCP) (2018-2025) ADB	USD 41 million	▪ Aims to improve climate resilience of agricultural infrastructure, and improve crop productivity, diversification, and commercialization. ▪ Projects are complementary, while the ADB project focuses on infrastructure and capacity development for farmers and agribusiness, the GCF project in Component 2 will focus on private sector involvement and incentives for investments in deforestation free and climate resilient value chains. Coordination with ADB is secured through ADB's role in implementing Activity 2.1.3.

[41] Project 2 will provide additional financing after the KfW project ends to revise, implement and scale up village forest conservation agreements.

Strengthening Lao PDR's institutional capacity to comply with the Enhanced Transparency Framework under the Paris Agreement (2018-2024) Financed by GEF, with UNEP as the implementing agency	USD 1.39 million	▪ Aims to strengthen the national capacity to track progress against actions identified in its NDC for domestic and international reporting requirements under the Enhanced Transparency Framework of the Paris Agreement ▪ Project has been consulted with to ensure there is no duplication between projects. Coordination on lessons learned from project implementation, and best practices for compliance with the ETS will be ensured.
Strengthening the natural capacity of ecosystems to regulate water flows & limiting the exposure of local populations in vulnerable areas to climate effects (2019-2025) GCF project with UNDP (AE)	USD 12 million	▪ Aims to test an alternative approach to flood control in urban Lao PDR, moving away from a traditional focus on grey infrastructure and implementing EbA in urban areas. ▪ Both projects will strengthen the adaptive capacities of the population, although one focuses on urban and the other rural populations
Building the Capacity of the Lao PDR Government to Advance the National Adaptation Planning Process (2020-2024) Financed by GEF, with UNEP as the implementing agency	USD 26 million	▪ To strengthen the institutional and technical capacity of stakeholders and the government in Lao PDR to advance the NAP process. ▪ Outreach will be sought with UNDP and through the NDC to ensure lessons learned from the project can inform NAP development, and vice versa.
Lao PDR Southeast Asia Disaster Risk Management Project (2017-2024) WB	USD 31 million	▪ To reduce the impacts of flooding in target areas and enhance the Government's capacity to provide hydro-meteorological services and disaster response. ▪ Will improve climate-information in country, especially related to the provision of hydro-meteorological services and disaster response. Cooperation will be sought to share relevant climate-related information to inform Activity 1.2.2 and Components 2 and 3.
Business Assistance Facility II (BAF II), one of four components of the Lao PDR Competitiveness & Trade Project (2019-2024), Australian Aid, Irish Aid, USAID & the WB	AUD 6M; USD 13 million, EUR 360,000	▪ Aims to support eligible Lao companies to increase their competitive advantage, and thereby grow into more sustainable businesses. ▪ BAFII aims to improve the business sector of the whole. Component 2 is focuses on investments in low-emission and climate resilient value chains for agri-MSMEs.
Strengthening Agro-climatic Monitoring & Information System (SAMIS) (2016-2020) Financed by GEF, with FAO as the lead implementing agency	USD 22 million	▪ Aims to enhance monitoring, analysis, communication and use of agrometeorological data and information for decision making in relation to agriculture and food security at national and provincial levels. ▪ SAMIS developed key tools that are referenced within Activity 1.2.2.

5.2 Barrier Analysis

Moving towards low-emission and climate resilient development pathways, the following barriers need to addressed with GCF support to ensure the success of the already initiated transformational change of the forestry and land use sector in the Lao PDR:

Barrier 1. Insufficient government resources and support for climate change adaptation and mitigation

The NDC (2021c) continues to highlight the need for external support to enable the country to meet its conditional climate change targets. (Lao PDR, 2021c)[42] It specifically mentions the need to design *"innovative financial mechanisms that can blend public and private capital as a means of mitigating risks and unlocking private sector investment in climate projects"* (Lao PDR, 2021c, p. 8). There is a need to develop targeted incentives to mobilize private sector funding and enable them to invest in low-emission and climate resilient land management practices.

Barrier 2. Synergies between REDD+, adaptation and local land use planning not realized due to limited capacities and weak coordination

REDD+ in Lao PDR has predominantly focused on mitigation, although there is substantial potential to improve adaptation outcomes and strengthen cross-cutting efforts for adaptation and mitigation within the context of REDD+. The updated NDC (2021c) highlights the need to strengthen the linkages between climate change mitigation and adaptation in forest ecosystems, including improving the integration of adaptation considerations in forest planning and management. It further highlights the need for improved integrated land use planning, to ensure the dynamics between land management, climate change mitigation and climate resilience are considered. Such challenges in the public sector are accelerated due to weak cross-sectoral and vertical coordination among sectors and government levels and limited human resources to coherently implement and enforce regulations and programs (Lao PDR, 2021c).

Barrier 3. Structural deficiencies in law enforcement

There continues to be weak policy coherence and cross-sectoral coordination policies continue to place emphasis on land use activities that support economic growth (e.g. cash crop cultivation, energy, etc.), while policies to safeguard forests and strengthen resilience to climate change are not given the same prominence and are not widely enforced. Law enforcement agencies such as the forest inspectorate are under-staffed and under-equipped, lacking up-to-date maps and GPS equipment, for example, and even lacking vehicles and budgets to travel to the field.

Barrier 4. Missing consideration of integrated planning within landscapes, which can increase climate change risk and vulnerability by not addressing linkages between land use in upstream and downstream areas

The absence of a clear classification and zoning of land uses and consequently a lack of tenure security in many villages is a major underlying cause for deforestation from shifting cultivation and expansion of unsustainable land use activities (e.g. expansion of annual monocropping activities). Uncertainty regarding land uses and border demarcation often leads to unclear rules and gradual encroachment into forests. Village-level participatory land-use plans need to be climate-informed, harmonized into larger scale village cluster (*kumban*) plans, considering watershed protection and biological corridors, and integrated into spatial planning exercises at district level in order to equilibrate upstream and downstream impacts, dynamics and interactions. This is particularly important for building resilience to climate change. [43]

Barrier 5. Insufficient practical experience and skills for implementing sustainable, deforestation free and climate resilient agricultural practices and technologies

Land use practices in Laos, especially in the uplands, are characterized by low productivity and often don't qualify as good agricultural practices (GAP) (World Bank, 2018). While traditionally sustainable, the alteration of shifting cultivation practices (especially of cycling intervals) to fit the needs of current market systems and modern life, has led to many complications (Dressler, et al., 2017). Policy implementation to stabilize shifting cultivation was

[42] The focus in the updated NDC is on conditional mitigation targets, however it notes that more detailed assessment of adaptation financing needs will be included within the sectoral adaptation strategies.

[43] The approach was validated by GIZ and stakeholders from Project 1. For more information refer to the stakeholder engagement plan (Annex 7).

largely unsuccessful, due to both, lack of means and diverging political priorities between local and national governments (Ramcilovic-Suominen & Kotilainen, 2020). But also the promotion of cash crops to provide more profitable livelihoods to upland farmers and the increased competition for land suited for commercial agriculture, shifting subsistence crops (upland rice, vegetables, etc.) and smaller scale cash crop production to less suitable upland areas, has resulted in a wide range of problems, including soil nutrient depletion, erosion (of sometimes disastrous dimension), soil destabilization (risk of landslides), ecosystem degradation (e.g. biodiversity loss, reduced total biomass), and the disruption of ecosystem services, most importantly those related to water balances (Southavilay, et al., 2013; Valentin, et al., 2014). Thus, upland systems have in many areas become unsustainable, while the dependence on agricultural activities is still high and has, combined with population growth, put additional pressure on forests. This is further fuelled by a lack of effective agricultural extension services, and poor access to information and knowledge through other means, resulting in ineffective agricultural management practices (Jones, et al., 2017; Nampanya, et al., 2017)and driving agricultural area expansions into forest land, rather than intensifying production on existing plots, which is often also constrained by a lack of access to irrigation. In consequence, villagers' awareness of sustainable land use and management practices (e.g. soil conservation measures, climate-smart practices) and alternative business and income generating models is limited, though insights from their own experiences and an understanding of the lack of sustainability of their situation are growing (Madan, 2020).

A major constraint is the limited engagement of the private sector in promoting sustainable land use activities, such as GAP and FLR, through training and incentives (Madan, 2020). This is sometimes a result of a lack of access to finance, often also a matter of competition, in which some actors are more focused on short-term profits than sustainability, with little impediments to this business approach on national or international level.

Barrier 6. Limited incentives for local villagers and agri-Micro, Small and Medium enterprises (MSMEs) to adopt and invest in more sustainable, climate resilient and deforestation free practices and support value chain development:

Poverty and lack of alternative livelihood opportunities (e.g. off-farm employment) have resulted in a high dependence on land and forests for household income in the project area. Most of the rural population practice a mix of subsistence agriculture with marketing of selected cash crops to local traders and agri-MSMEs. These small private sector companies either market unprocessed commodities (e.g. maize, cassava, rubber, cardamom) to markets in China, Vietnam and Thailand depending on demand, or are involved in some kind of value addition. The current focus on low value raw products and the promotion of monocropping systems without sufficient quality management over the final products is indirectly fostering the expansion of unsustainable agricultural activities into forest zones. It further makes farmers particularly vulnerable to climate shocks, as they are dependent on non-diversified value chains with limited practices to strengthen their resilience against climate change. Value adding in terms of sorting, processing, packaging and general quality improvement by the local agri-MSMEs remains an exception. There is a notable absence of incentives (including financing opportunities) for villagers and for micro, small and medium-sized enterprises to invest in sustainable forestry, agro-forestry, and climate resilient agriculture activities, due to the various factors, including (among others):

- Many financial institutions in Lao PDR have limited penetration in rural areas, making it physically difficult for remotely located individuals and businesses to reach bank branches.
- Some banks are highly reluctant to lend to MSMEs in general.
- Agri-MSMEs often do not even have bank accounts and many do not maintain reliable financial statements, which makes it very difficult for banks to understand the firm's profitability, cash flows, and ability to meet loan repayments.

- Agri-MSMEs lack proper business and financial planning. Micro enterprises tend to lack the financial literacy required to understand the types of lending products that are available, how to develop a business plan, and how to go through the process of applying for a loan.
- Agri-MSMEs are also discouraged from applying for a bank loan if they are uncertain about their future revenue stream, or if they perceive that financial institutions do not cater to their type of business, or are unable or unwilling to comply with the Lao PDR's high collateral requirements (typically land and buildings).

Barrier 7. Insufficient practical experience and skills for implementing sustainable forest landscape management:

Weak policy coherence and limited coordination between competing policy priorities is a key barrier to the sustainable management of Lao PDR's forest resources, as is the illegal clearing and degradation of forested lands driven by inappropriate agricultural practices, insufficient land use planning and weak law enforcement (see above barriers). The new forest law includes provisions for villagers to economically benefit from the sustainable management of their forests, including through the sale of sustainably harvested forest products. While seen as a major advancement for local villagers and as an additional incentive for the sustainable management of village forests, there are often low timber stocks and limited experiences in supporting VFM groups with this commercial element (e.g. including mainstreaming this into VFM plans and ensuring adequate implementation and monitoring).

6. Project Design

6.1 Project Objective

The aim of this project is to support the Government and people of Lao PDR in further changing the present-day use of forests and landscapes and to ensure a transition to sustainable and climate-resilient management at scale. This will reduce approx. 4.6 million tCO_2eq over the duration of 4 years of Project 2 and directly increase the resilience of more than villagers

6.2 Project's Approach to Address Barriers

The GoL is committed to implementing the policies and strategies mentioned under chapters 3 and 4 and moving towards low-emission and climate resilient development pathways. The barriers described in chapter 5 need to be addressed with GCF support to ensure the success of the already initiated transformational change of the forestry and land use sector in the Lao PDR during the implementation of Project 1. Table 13 summarises the activities that address the barriers.

Table 13: Overview of how barriers are addressed

Main Barriers	Activities that Address Barriers
Barrier 1: Insufficient government resources and support for climate change adaptation and mitigation	
• The NDC highlights the need for external support to enable the country to meet its conditional climate change targets (Lao PDR, 2021c).[44] • Highlights the need to design "innovative financial mechanisms that can blend public and private capital as a means of mitigating risks and unlocking private sector investment in climate projects". • Need to develop targeted incentives to mobilize private sector funding and enable them to invest in low-emission and climate resilient land management practices	• Project 2 will continue scaling up efforts to mobilize and channel climate public and private climate finance. Including from other voluntary REDD+ initiatives. • Addressed by Outputs: 1.1, 1.2, 2.1, 2.2, 3.1, and 3.2.
Barrier 2: Synergies between REDD+, adaptation and local land use planning not realized due to limited capacities and weak coordination	
• REDD+ in Lao PDR has predominantly focused on mitigation, although there is substantial potential to improve adaptation outcomes and strengthen cross-cutting efforts for adaptation and mitigation within the context of REDD+. • NDC highlights the need to strengthen the linkages between climate change mitigation and adaptation in forest ecosystems, including improving the integration of adaptation considerations in forest planning and management. • Need for improved integrated land use planning, to ensure the dynamics between land management, climate change mitigation and climate resilience are considered. • Weak cross-sectoral and vertical coordination among sectors and government levels (i.e. central to local) and limited human resources to coherently implement and	• Project 1 was a mitigation only project, and thus Project 2 needs to strengthen cross-cutting synergies within project design related to measures in the agriculture and forestry sectors, and ensure adaptation is mainstreamed across outputs and activities. • Addressed by outputs: 1.1, 1.2, 2.1, 2.2, 3.1, and 3.2.

[44] The focus in the updated NDC is on conditional mitigation targets, however it notes that more detailed assessment of adaptation financing needs will be included within the sectoral adaptation strategies.

Main Barriers	Activities that Address Barriers
enforce regulations and programs among the different level (Lao PDR, 2021c).	
Barrier 3: Structural deficiencies in law enforcement	
• Weak policy coherence and cross-sectoral coordination: policies continue to place emphasis on land use activities that support economic growth (e.g. cash crop cultivation, energy, etc.), while policies to safeguard forests and strengthen resilience to climate change are not given the same prominence and are not widely enforced. • Law enforcement agencies such as the forest inspectorate are under-staffed and under-equipped, lacking up-to-date maps and GPS equipment, for example, and even lacking vehicles and budgets to travel to the field.	• Project 1 developed standard operational procedures and established Provincial Deforestation Monitoring Systems (PDMS) in 3 out of 6 provinces. Nonetheless, there is a need for continued support with capacity building for the operationalization of these systems, harmonizing local approaches for law enforcement, and scaling up PDMS and capacity building efforts to the additional 3 provinces covered under Project 2. • Addressed by Outputs: 1.2, 3.1, and 3.2
Barrier 4: Missing consideration of integrated planning within watersheds, which can increase climate change risk and vulnerability by not addressing linkages between land use in upstream and downstream areas	
• Absence of a clear classification and zoning of land uses and consequently a lack of tenure security in many villages is a major underlying cause for deforestation from shifting cultivation and expansion of unsustainable land use activities (e.g. expansion of annual monocropping activities). • Uncertainty regarding land uses and border demarcation often leads to unclear rules and gradual encroachment into forests. • Village-level participatory land-use plans are not climate-informed, and need to be harmonized into larger scale watershed management plans, and integrated into spatial planning exercises at district level in order to equilibrate upstream and downstream impacts, dynamics and interactions. This is particularly important for building resilience to climate change.	• Project 1 developed a comprehensive Participatory Land Use Planning process (PLUP 2.0), based on lessons learned from other land use planning processes piloted in Lao PDR, and is implementing this approach in 240 villages in 3 provinces. Project 2 will cover additional provinces. • Addressed by Outputs: 1.2, 2.1, 3.1 and 3.2
Barrier 5: Insufficient practical experience and skills for implementing sustainable, deforestation-free and climate resilient agricultural practices and technologies	
• Low productivity of agricultural practices in the target area. • Increased competition for commercial agricultural lands is shifting subsistence agriculture (upland rice etc.) and certain cash crops (e.g. maize, Job's tears and cassava) to less suitable forested upland areas. Crop rotations and fallow periods for soil regeneration are reduced leading to loss of soil fertility and weed infestation. • Producers seeking out more productive land turn to forest areas for the expansion of agricultural production, which is leading to further deforestation and forest degradation. • Poor access to irrigation exacerbates the low productivity of agricultural production, as does the limited availability of government agricultural extension services. • A reliance on few cash crops also increases farmers' vulnerability to climate change (i.e. higher dependency	• Project 1 developed an approach to facilitate the Promotion of Sustainable Agricultural Production (PSAP), which is being implemented in 240 villages in 3 provinces. Further support is needed to strengthen agricultural extension and capacities on climate change (related risks) and best practices for deforestation free and climate resilient agricultural practices, and ultimately scale up the PSAP approach throughout the entire project area. • Addressed by Outputs: 2.1, 2.2, 3.1 and 3.2

Main Barriers	Activities that Address Barriers
on few crops, where their livelihoods can be greatly impacted by changes in climatic conditions and climate-related natural hazards).	
Barrier 6: Limited incentives for local villagers and agri-Micro, Small and Medium enterprises (MSMEs) to adopt and invest in more sustainable, climate resilient and deforestation free practices and support value chain development)	
• Poverty and lack of alternative livelihood opportunities result in a high dependence on land and forests for household income in the project area. • Most of the rural population practice a mix of subsistence agriculture with marketing of selected cash crops to local traders and agri-MSMEs. • Small private sector companies either market unprocessed commodities (e.g. maize, cassava, rubber, cardamom) to markets in China, Vietnam and Thailand depending on demand, or are involved in some kind of value addition. • Focus on low value raw products and the promotion of monocropping systems without sufficient quality management over the final products is indirectly fostering the expansion of unsustainable agricultural activities into forest zones. • Value adding in terms of sorting, processing, packaging and general quality improvement by the local agri-MSMEs remains an exception. • Notable absence of incentives (including financing opportunities) for villagers and for micro, small and medium-sized enterprises to invest in sustainable forestry, agro-forestry, and climate resilient agriculture activities.	• Project 1 did not include a targeted activity to support agri-MSMEs on agricultural land, but instead focused on village-based agroforestry activities in production forest areas. Under Project 2 targeted support for engaging agri-MSMEs within broader agricultural value chains is needed to incentivize the adoption of more sustainable practices that enable this critical actor to support the development of climate resilient and deforestation free value chains. • Addressed by Outputs: 2.1, 2.2, 3.1 and 3.2
Barrier 7: Insufficient practical experience and skills for implementing sustainable forest landscape management	
• Weak policy coherence and limited coordination between competing policy priorities is a key barrier to the sustainable management of Lao PDR's forest resources, as is the illegal clearing and degradation of forested lands driven by inappropriate agricultural practices, insufficient land use planning and weak law enforcement (see above barriers)	• Project 1 mainstreamed FLR into VFM guidelines, and supported the implementation of sustainable village forest management in village forests and within national protected areas in 3 provinces. Continued support is required under Project 2 to scale up the development and implementation of robust VFM plans and village forest conservation agreements, resulting in SFM and FLR, in all six provinces. • Addressed by Outputs: 1.2, 3.1 and 3.2

6.3 Envisaged Paradigm Shift in the Sector

To overcome path dependencies and support a paradigm shift, Project 2 will continue the initiated changes in current land and forest management practices of Project 1, and expand the approaches (based on lessons learned during implementation of Project 1) to 3 new provinces. Elements contributing to the overall paradigm shift in the project area, include the following (see also Figure 22 below):

- **Implement climate-informed participatory land use planning and measures to strengthen tenure security, improve land use planning, and implement these land use plans**: Project 2 will continue to scale up the PLUP 2.0 approach, with a strengthened focus on climate change adaptation,[45] to 290 villages, including the integration of participatory land use plans into broader village cluster level plans, to facilitate holistic planning, promote watershed protection, and address upstream and downstream interlinkages between land use and land use change, and climate risk to stabilize the mountainous shifting cultivation landscapes of Northern Laos.
- **Scale up investments in sustainable, climate resilient and deforestation free agricultural practices:** The proposed GCF project specifically focuses on investments at village level in both agriculture and forestry. Based on the new forest law, villagers can use timber for commercial purposes, providing an additional incentive for the sustainable management of village forests. With investments through VFAG for the implementation of VFMPs, VilFoCA and PSAP (white list), options and incentives to change current business practices towards deforestation free, low emission and climate resilient practices are provided. This is further aided by strengthening linkages with private sector actors in support of the development of climate resilient and deforestation free agricultural value chains that that not only provide climate benefits, but also provide predictability of demand for sustainable agricultural production and reduce pressure on forests. This includes agri-SMEs and sustainability-oriented agroforestry companies, as well as actors in the Lao National Chamber of Commerce and Industry. Beyond this, Project 2 supports the implementation of the NDC to through nature-based climate change solutions, while strengthening synergies between adaptation and mitigation in the forestry and agricultural sectors. Adaptation measures have been strengthened within Project 2, recognizing the interlinked dynamics between land use and land use change and climate risk/resilience, and the potential to strengthen cross-cutting measures with both adaptation and mitigation benefits for local forest-dependent communities and ecosystems.
- **Catalyse private sector investments in value chains with incentives to transition towards climate resilient, low-emission and deforestation free value chains in the AFOLU sector:** The project's jurisdictional approach bridging agriculture, forestry and financial sectors and business activities is critical to enable real land use changes and more sustainable forest and food systems. The project is also supporting the development of sustainable value chains by linking agri-MSMEs to producers adopting deforestation-free agriculture with the aim of facilitating market access for sustainably produced products at village level. Agri-MSMEs committed to the sustainable transformation and processing with offtake agreements from capacitated local producers are key to enable a paradigm shift towards low-emission and climate resilient land and forest management.
- **Scale-up investments in sustainable and climate resilient forest landscape management, and watershed protection:** Project 2 will continue to work on watershed protection through activity 2.1.3 co-financed by ADB as well as with village forestry and NPAs to prioritize sustainable management, while generating livelihood opportunities for local forest-dependent communities to benefit from the sustainable management of forest resources. This will include supporting the planning and implementation of VFMPs and VilFoCA to enable communities to benefit from provisions under the new forestry law, which enables communities to receive additional benefits for the sustainable management and utilization of forest resources. By conducting climate-informed PLUP, VFMPs and NPA management plans will build on these processes, and create a more holistic and harmonized planning approach facilitating improved forest landscape management, reflected in the plans developed, implemented and monitored by the project.

[45] Climate change adaptation supplement to be developed to ensure adaptation is integrated within the PLUP 2.0 approach, with related capacity building on climate change, including risks and resilience building, to be conducted for government staff and local villagers. For more information refer to the detailed activity sheets in Section 6.6.

- **Strengthen law enforcement and monitoring:** Project 2 will continue to bridge national strategies with regional realities, where the revised and improved legal and regulatory framework for forestry (supported under Project 1) will be applied at scale within the project region, improving the enforcement of new regulations. Project 2 will also establish PDMS in the 3 additional provinces and support the operationalization of these systems (and related institutional strengthening) in all 6 provinces. A strengthened emphasis in Project 2 will be placed on ecosystem-based adaptation, and how forest management can strengthen the resilience of forest ecosystems and forest-dependent communities.

Improve the mobilization and monitoring of sustainable finance for investments in climate resilient and deforestation free sustainable land management:

- *Ensure climate finance is accessible to local beneficiaries:* The Climate Change Funding Window brings concrete benefits to local beneficiaries, incentivizing villages to develop climate-informed village development plans with a vision of change. Its set up further ensures there are clear incentives for performance and is transforming how climate finance is mobilized to local villages within Lao PDR.
- *Strengthen institutional capacities for mobilizing and channelling climate finance:* Continued capacity building for EPF and FPF will support Lao PDR to improve the mobilization and channelling of funds for climate action (including from international funds, through the future GCF accreditation of EPF, and through additional results-based payments for REDD+, among others).
- *Development of additional incentives to mobilize private sector finance and facilitate a transition towards more sustainable value chains:* The project's matching grant-scheme targets agri-MSMEs, a key actor at the interface of production and markets, to support the development of sustainable value chains and the transition towards deforestation free and climate resilient agriculture and agroforestry value chains (Activity 2.2.1). This activity will reward private sector enterprises, agri-MSMEs, and provide capacity building in sustainable agricultural practices and markets, which could potentially reduce the need to expand the agricultural frontier and therefore protect vital forest ecosystems.
- *Increase mobilization of additional climate finance*: Project interventions are further expected to increase access to finance, and mobilize additional funds for climate action. The project includes measures to facilitate improved access to international climate finance, including mechanisms related to the implementation of Article 6 of the Paris Agreement, as well as from voluntary REDD+ initiatives, with cross-cutting adaptation benefits (reflecting lessons learned from strengthening cross-cutting benefits from REDD+ within this project), based on market and non-market mechanisms.[46] Domestic government revenues may also potentially increase from fees, royalties, fines and taxes.

[46] The project will strengthen opportunities for REDD+ finance to contribute to cross-cutting interventions, with both climate change mitigation and adaptation benefits (e.g. FLR in degraded forest areas, climate resilient and deforestation free agriculture).

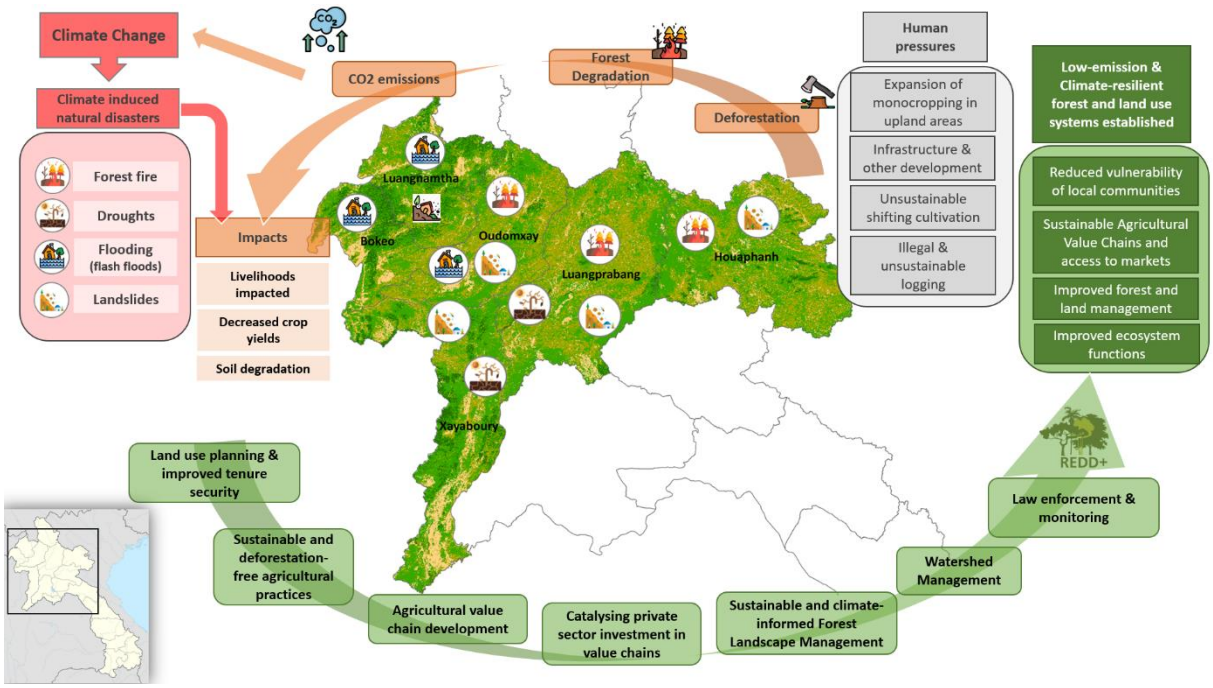


Figure 22. The Project's Envisioned Paradigm Shift

The following Figure 23 shows how the overarching Programme will result in a shift in the forest transition curve, and support forest recovery.

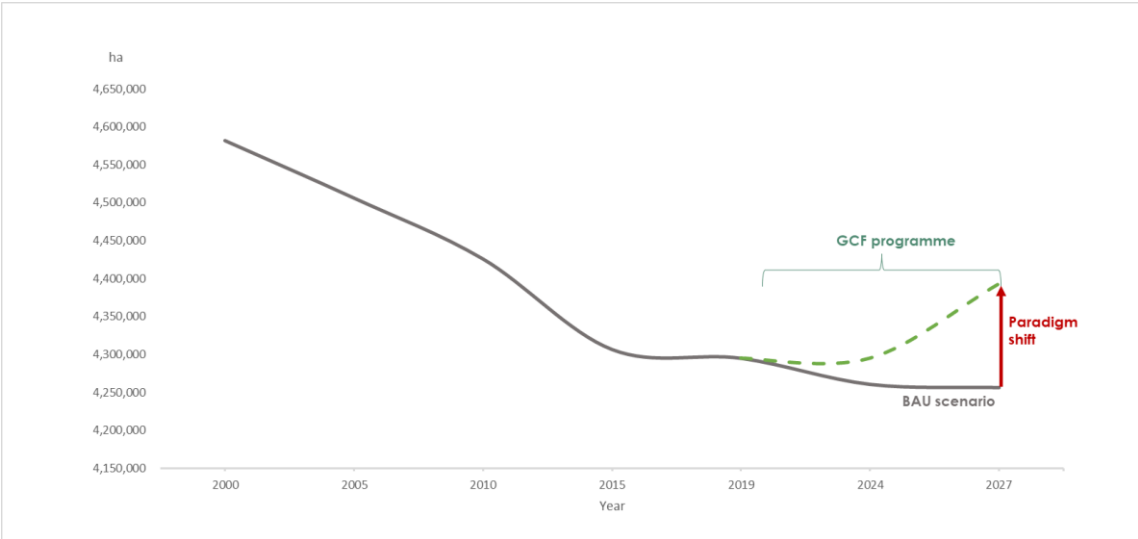


Figure 23. Forest Transition Curve for the ER-Programme Area

As described in Section 5.2, there are diverse barriers limiting transformation towards low-emission, deforestation-free and climate-resilient development pathways in Lao PDR. Nonetheless, this project builds upon the lessons learned from Project 1 (see Annex 2c to the Funding Proposal) and past projects and proposes a holistic approach. The implementation of Project 1 will lead to efficiency gains, where much of the guideline and training module development, policy support and climate mainstreaming has been completed. Capacity building of key government and local actors will further strengthen replication and upscaling in the context of Project 2.

Potential for scaling-up and replication

The ER-Programme provides the basis for investments at scale to initiate the anticipated transformational change, and overcome the barriers facing Lao PDR to transition towards low-emission, deforestation free and climate resilient development pathways. This project aims at scaling up successful approaches, and linking them to private sector engagement to mobilize additional finance for climate action, and ensure the long-term sustainability of project-supported investments.

The Programme (Project 1 and 2) is already ambitious in its scale, impacting approx. 30% of Laos' annual GHG emissions, reaching over 700,000 people in six provinces (many of whom are poor and live in remote areas) and covering approximately 35% of the national territory, 32% of the country's forest cover, and where around 40% of the country's deforestation and degradation occurs. Deforestation and forest degradation exacerbate the vulnerability of local villagers and the ecosystems to climate change, and action is urgently needed in this region of Lao PDR to strengthen the resilience of ecosystems and local livelihoods to a changing climate. Beyond this, the project provides the basis for scaling up REDD+ and climate resilient and deforestation free sustainable land management, facilitating a cross-cutting approach, beyond the project's six provinces to ten additional provinces, in order to cover the entire country.

For Laos, essential enabling pre-conditions, both for the success of the project, and also for future replication and up-scaling in other provinces, are: (a) human and institutional capacities, and (b) sustainable financing. Both are cornerstones of the project's Theory of Change, which focuses on capacity building, institutional strengthening and unlocking additional public and private financing streams for transforming the sector.

Potential for knowledge and learning

Project 2 has a knowledge management plan with comprehensive actions that will be applied for this project as well (see Section 7.5). The GCF project is providing relevant tools to enable policy makers, provincial governments and local communities to understand and learn the benefits of REDD+, and climate-resilient land management approaches in order to change the business-as-usual model, and s and facilitate scaling up public and private investments in climate change mitigation and adaptation. The project is also giving attention to comprehensive communication and exchange of information to build awareness and capacity development on the revised forest regulations to ensure their proper application, as well as awareness on climate risks and best practices for climate-resilient agriculture, ecosystem-based adaptation and gender equality and social inclusion. The project aims to increase the use of climate information in decision making processes and ensure that land use is climate-informed to strengthen adaptive capacities, and the overall resilience of ecosystems and local livelihoods to climate change. Collaboration with national universities will be sought involving them in REDD+, and climate resilient AFOLU related activities.

To facilitate the adoption of climate-informed, sustainable agricultural and forest practices the project will develop training of trainer (ToTs) programs involving the extension staff of District Agriculture and Forestry Offices (DAFO) at the district level. This will help to ensure continued capacity building and knowledge transfer after project completion. In addition, a special emphasis will be given to:

- Improving information systems and mapping,
- Generation and application of climate change information (including climate risk and planning, implementing and monitoring suitable risk reduction practices)
- Applying guidelines, with a strengthened emphasis on climate change adaptation
- Training individuals able to use remote sensing data and generate maps to enable Provincial Offices of Forestry Inspection (POFIs) and District Offices for Forestry Inspection (DOFIs) to continuously monitor deforestation and forest degradation, and
- Best practices for climate resilient and deforestation free agriculture, sustainable land management, SFM, FLR and EbA

Contribution to the creation of an enabling environment

The programmatic approach, through Projects 1 and 2, aimed to create an enabling environment for sustainable land and forest management and REDD+ in a systemic manner, helping to unlock results-based payments through support to the FCPF Emission Reductions Programme. The Programme gives special attention to support in policy and regulatory reform for forestry and land use planning.

Project 1 advanced substantially with the revision of the regulatory framework, establishment of SOPs (e.g. for law enforcement and monitoring), and REDD+ mainstreaming within socio-economic development plans. As such, these activities have been removed from Project 2 (although Project 2 will benefit from these advancements and will continue to raise awareness to facilitate compliance with the regulatory framework). In addition, Project 1 facilitated the development of key guidelines that will continue to be used for Project 2, which will facilitate a streamlined implementation of Project 2 (e.g. PLUP 2.0, VFAG and VFM guidelines).

Project 2 dedicates the entire Component 1 to improving the enabling environment for sustaining the project's activities and impacts beyond its duration (see Section 6.6 for details). It addresses (among others):

- Gender equality and social inclusion (from planning to implementation and monitoring)
- Sustainable financing for SFM and FLR in order to permanently close a structural funding gap for transforming the forest sector towards net zero emissions in 2050 (see below), while also strengthening resilience of vulnerable ecosystems and production systems, and the rural households who depend on them for their livelihoods,
- Law enforcement and monitoring to ensure compliance with the regulatory framework, and safeguard the project's social and environmental impacts,
- Establishment of PDMS in the 3 additional provinces, and operationalization of PDMS in all 6 provinces
- Participatory climate-informed land use planning, following PLUP 2.0 and the Project 2 supported climate change adaptation supplement, which will serve as the foundation for scaling up deforestation-free and climate-resilient investments in the AFOLU sector,
- Socio-economic development planning in order to strengthen the authorities' mandate to scale-up sustainable land management practices (with both mitigation and adaptation benefits) across the country and receive public budget resources for doing so,
- Strengthening of village land use and natural resources management capacities, including by the creation of the VFAG management committees,
- Capacity building of EPF and FPF to mobilize, channel and monitor sustainable climate finance,
- Capacity building of EPF to receive GCF Accreditation as a Direct Access Accredited Entity, and develop high-quality proposals to mobilize additional climate finance and
- Development of management plans for 4 NPAs, 1 NP, and 290 village forests, which will provide clear plans for inclusive and transparent forest management that generates livelihood benefits for local forest-dependent communities, while reducing deforestation and forest degradation.

Contribution to the national / local regulatory framework and policies

A strategic component of the GCF Programme is to strengthen the policy and regulatory framework. The GCF Project 1 focused on 6 areas: (i) mainstreaming REDD+ into socio-economic development plans (SEDPs); (ii) strengthening the regulatory framework (revision, modification and drafting of relevant laws, decrees and regulations) to enable sustainable forest management and private sector investment in village-based agroforestry development;

(iii) strengthening law enforcement and compliance monitoring; (iv) support land use planning and measures to improve tenure security; and (v) strengthening the forest and forest carbon MRV system. Project 2 will build upon the work already being implemented under Project 1 and will continue to strengthen, amongst others, law enforcement, land use planning and tenure security of local village communities.

With support of the GCF Project 1 and other development partners the regulatory framework has improved substantially, especially for forest management, and Laws such as the Land Law and Forest Law have been revised. Subsequent policies are being revised but often sub-national agencies still lack the capacities to fully apply these. Therefore, Project 2 will not support further revision of policies and the regulatory framework, but instead will focus on the coherent implementation of the regulatory framework through capacity building and implementation of sustainable deforestation-free, climate-resilient and low-emission investments and activities.

In addition, the programme continues to support Lao PDR to meet their climate targets. It will support Lao PDR with the implementation of their updated NDC, which puts a strong emphasis on the forestry and agricultural sectors for both mitigation and adaptation (see Section 3.3). A strengthened focus on adaptation has thus been integrated into this project's design, and the project is committed to building on synergies with ongoing and planned projects on climate change adaptation and disaster risk reduction.

6.4 Theory of Change

The objective of the overarching programme is to support the Government and people of Lao PDR in further changing the present-day use of forests and landscapes and to ensure a transition to sustainable and climate resilient management at scale. This will reduce approx.11.7 million tCO_2eq over the duration of 7 years of Project 1 and 2 and directly increase the resilience of more than 273,700 villagers.

Project 2 goal statement: If the capacities of government institutions and respective staff are strengthened to train, steer and effectively monitor forest and agricultural land management, village communities are capacitated and incentivized to implement (village) forest management plans and villagers and agri-MSMEs are trained in sustainable, climate informed and deforestation free agricultural value chains, then the resilience to climate change of forest and agroecosystems and the vulnerable village communities who depend on them will be increased because local communities will manage forests and agricultural land sustainably and benefit from improved, climate resilient agricultural production and sustainable forest management. Specifically, Project 2 is anticipated to result in emission reductions of approximately 4.6 million tCO_2eq over its duration of 4 years and strengthen the resilience of 273,000 direct beneficiaries and 2,112,000 ha of ecosystems.

Outcomes and outputs: The project builds on Project 1 and has been designed to address the barriers described in section 5.2 to achieve its goal, as well as the overarching programme objective. The project outcomes, components and activities are detailed in Section 6.6.

Project 2 co-benefits: Project 2 aims to generate two main co-benefits, namely: 1) improved food security, and 2) enhanced conservation of biodiversity.[47] Food security will be improved through improved participatory land use planning, and targeted support under Component 2 to promote climate resilient and deforestation free agricultural practices, while consciously enhancing co-benefits related to food security and nutrition. Biodiversity will be strengthened through the project again through integrated PLUP, and through interventions in Components 2 and Component 3 that reduce deforestation and forest degradation and implement FLR in biodiversity hotpots, including National Protected Areas (NPAs) and national parks that provide important habitats for diverse species including the black gibbon, among others. Gender

47 Additional SDG benefits associated with the project are described in Section 9.

equality and social inclusion are also at the core of the project's approach, and have been mainstreamed throughout all project activities

Assumptions and risks: The project design is based on the following assumptions:

- National and sub-national government officers are committed to improve planning processes in a participatory manner with local communities, guide the implementation of forest management plans, support villagers in engaging in improved agricultural production, and enforce rules and regulations.
- Agri- MSMEs are willing to develop sustainable, climate resilient and deforestation free agricultural value chains, and collaborate with villagers in a fair and equal manner.
- Vulnerable local communities are willing to implement jointly developed (village) forest management plans and engage with agri-MSMEs to shift current land and forest management practices.

These assumptions were informed and validated during the development of this feasibility study and the market assessment (annex 2j to the FP) and during a cooperative project development process together with the Government of Lao PDR and other project partners, as well as extensive stakeholder consultations conducted for the ER-Programme development, the development of the overarching programmatic approach under Project 1, and more recently during the Project 2 development process (see the Stakeholder Engagement Plan in Annex 7). Project risks related to technical and operational, credit, governance and legal risks, among others, are described in Section 10, and environmental and social risks are described within the Environmental and Social Impact Assessment (Annex 6a), Environmental and Social Management Plan (Annex 6b), and Ethnic Group Development Plan (Annex 6d).

Theory of change diagram

The following Figure 24 depicts the project's theory of change:

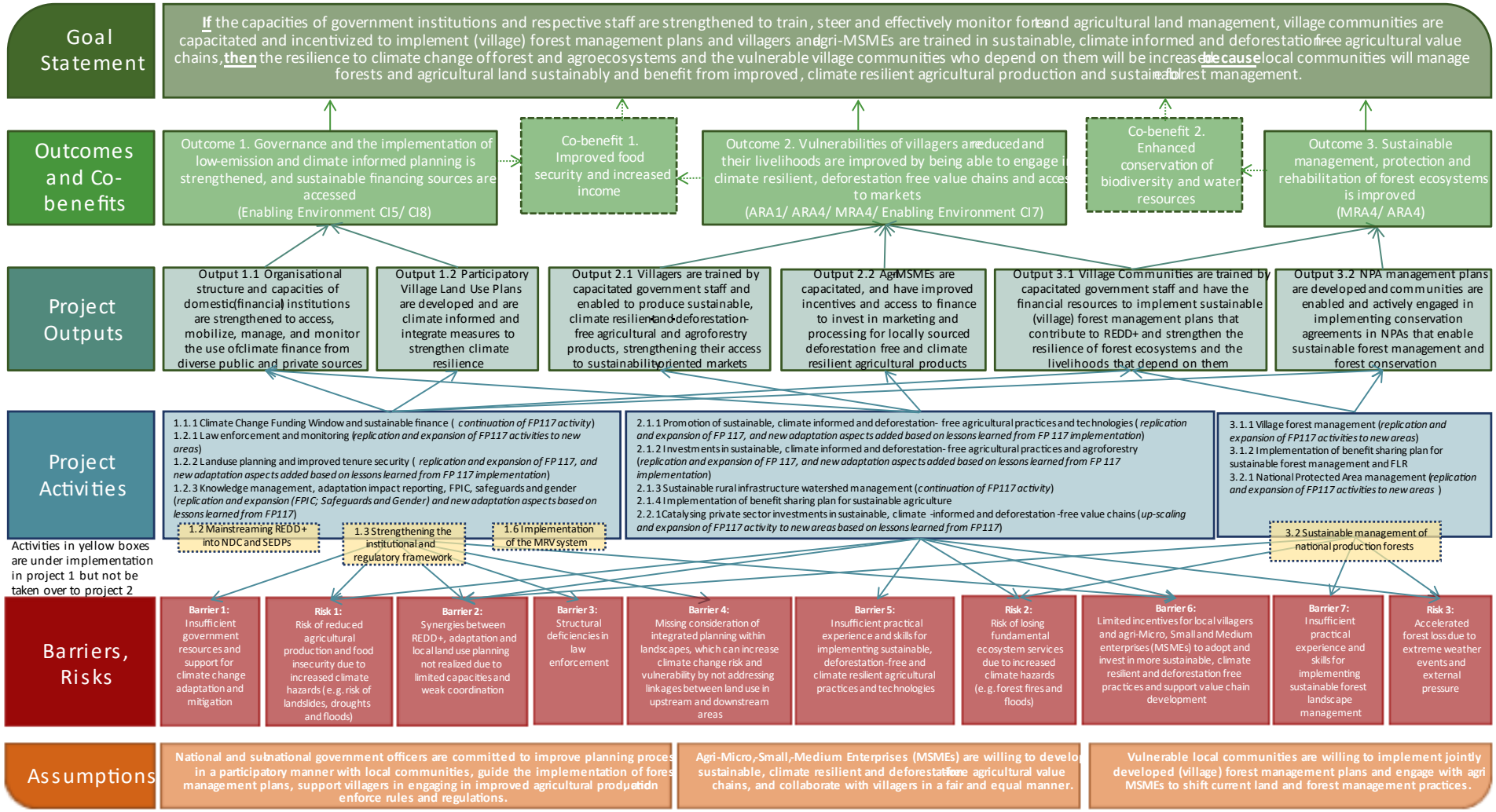


Figure 24. Theory of Change

6.5 Exit Strategy and Sustainability

The exit strategy of the project is predicated on the strategic use of GCF grant financing that will enable the GoL to: (i) initially and temporarily close the structural funding gap for transforming the forest sector through the provision of GCF grant finance, and (ii) permanently close the structural funding gap by unlocking and increasing additional financing streams for the sector. The key elements of the exit strategy are:

- **Enable access to REDD+ results-based payments to facilitate the upscaling of cross-cutting measures for sustainable land management**: Project 2 will build on the advances from Project 1, and continue to scale up necessary activities that build up an enabling environment for REDD+ and sustainable land management (e.g. climate-informed, participatory and integrated land use planning, strengthened law enforcement and monitoring), while scaling investments in deforestation free and climate resilient agriculture practices, sustainable forest management and forest landscape restoration. These measures will continue to help deliver emission reductions that enable Lao PDR to access REDD+ RBP – initially, and most concretely, through the FCPF Carbon Fund and later through other potential (e.g. UNFCCC) channels.[48] The project's focus on strengthening adaptation will also help channel mobilized funds for REDD+ into activities and investments with clear adaptation benefits.
- **Attract increased private sector investment:** The project is designed to facilitate greater (and more sustainability-oriented) private sector investment in the forestry and agriculture sectors. Project 2 activities specifically devoted to private sector development (Component 2) will mobilise new and additional investment and provide targeted investment support for agri-MSMEs – an often-overlooked actor with substantial potential to facilitate a transformational change in the target sectors. By developing and deploying tailored matching grants for agri-SMES, the project will mobilize at least EUR 1.8 million for supporting the development of climate resilient and deforestation free value chains increasing the predictability of demand for producers adopting PSAP promoted farming models. The enabling environment for facilitating additional private sector investment be further strengthened by improved capacities on sustainable forest and agricultural land management, as well as advancements in law enforcement and monitoring that will create an improved investment climate by strengthening the implementation of the revised regulatory framework (supported under Project 1) and ensuring transparency and accountability for sustainable land-based investments.
- **Mobilise national and international sustainable finance for sustainable and climate resilient land management and REDD+:** With GCF support, the structural funding gap will be closed by unlocking and increasing additional national and international financing streams for the forest and agricultural sectors. Matching grants for agri-MSMEs will catalyse private sector investments in deforestation free and climate resilient agricultural value chains. The implementation of sustainably planned VFMPs will take into account new provisions under the forest law, enabling villagers to benefit from the commercial use and sale of timber and NTFPs from village forests, providing direct income to villagers, and providing revenue to the Forest Protection Fund through forest licensing fees, and taxes. The project will also

[48] Double counting of emission reductions – understood to involve an emission reduction being counted more than once towards a mitigation pledge – will be avoided through the transparent reporting and accounting of emission reductions using UNFCCC (e.g. BUR technical annex), NDC and FCPF accounting protocols. Once the Government of Lao PDR receives FCPF payments for emission reductions, those emission reductions will be retired so that they cannot be 're-used'.

help identify suitable new funding sources and actively facilitate that Laos gains access. Project 2 (specifically Activity 1.1.1) will further explore additional and suitable sources of long-term finance, including (among others):

- Alternative REDD+ results-based payments for ERs generated in excess of the contract volume of the FCPF Carbon Fund. This will include potential market- and non-market voluntary initiatives such as the Lowering Emissions by Accelerating Forest Finance Coalition or participation in broader voluntary carbon markets demanding ERs from jurisdictional programs. The project will provide overall support for facilitating conformance with the methodological requirements (accounting and safeguards) of market-oriented carbon standards such as ART/TREES[49] or others.
- Market and cooperative approaches under Article 6 of the Paris Agreement, where Lao PDR will be supported on developing its approach to define eligible land use programs, projects, and units within their NDC; adherence to integrity principles, and with capacities to meet the requirements of an enhanced transparency framework to address issues related to corresponding adjustments.

Overall support to the NDA to develop a financing strategy to identify and fundraise climate finance to meet conditional NDC targets and the climate change adaptation investment needs outlined in the NDC and that considers domestic government revenues as well potential strategies to work with private impact investors active in the region[50]. Figure 25 below provides an overview of the main financing mechanisms the project plans to utilize to achieve its impact, contribute to a paradigm shift, and ensure the overall long-term sustainability of the project.

- **Develop the capacities of EPF and FPF to mobilize and channel climate finance:** The project will continue to strengthen the capacities of the EPF, which acts as an EE, to manage parts of grant financing for the project. The project will continue to channel GCF grant financing (in a staggered, performance-based manner) through the Climate Change Funding Window to participating villages and stakeholders for implementing SFM, FLR and deforestation free agriculture as well as matching grants to agri-MSMEs.[51] Project 2 will further build the capacity of EPF as it undergoes its GCF accreditation process (aligned with their 2nd GCF Readiness Grant), eventually enabling EPF to develop and implement their own GCF projects. Project 2 will also continue to support capacity building of FPF, in close coordination with the World Bank, to help them to meet the necessary international standards required for them to take over fund management and disbursement (including REDD+ results based payments), and realize their legal mandate to collect and disburse forest sector financing to the district and village levels.
- **Strengthen the provision of alternative livelihood opportunities that facilitate a transition towards low-emission, deforestation free and climate resilient livelihoods and land use:** Additional income and livelihood opportunities, in conjunction with capacity building, extension support, participatory land use planning

[49] The close link to the ER Programme ensures that excess ER are compatible with emerging market-based approaches like the LEAF programme that was initiated by the Governments of Norway and UK to bring more private sector finance into REDD+ while maintaining high environmental integrity (https://leafcoalition.org/). The Methodological Framework of the Carbon Fund allows fungibility of ER with the ART/TREES (https://www.artredd.org/) with limited adaptation (5 year reference period for the FREL). ART/TREES is anticipated to be the main standard for high integrity market transactions for jurisdictional and national REDD+ programs and shall also inform the development of any mechanism under Article 6 of the Paris Agreement. Thus, continued performance in reducing emissions even after the expiry of the CF ERPA opens the opportunity to access to international financing sources for REDD+.

[50] The few impact investors active in the country are predominantly invested in renewable energy and the provision of financial services. (Prasad, Bauer, Gokhale, Borthakur, & Reddy, No date)

[51] For more information on the financing modalities, please refer to the relevant activity sheets. .

and reasonable law enforcement, will create a cascading effect and maintain the low-emission development trajectory triggered by the project. Project 2's strengthening of adaptation measures, including integrating planning in a landscape approach and scaling up climate resilient investments (among others), will further facilitate strengthened resilience of local livelihoods and the ecosystems upon which they depend. The financial and economic analysis (Annex 3) demonstrates that the proposed interventions are viable in the long-run, with positive net present values as well as many other social, economic and environmental co-benefits.

- **Ensure alignment with national policies and development plans:** The project is closely aligned with, and explicitly supportive of government policies and plans. By aligning the project with key national climate policies, priorities and commitments, the changes of continuity of impacts and activities after the GCF investment ends are very high.

In the long-term, it is the responsibility of the Government of Lao PDR, including the National REDD+ Task Force, MoNRE (including EPF) and MAF, to monitor and ensure that the structural funding gaps for low-emission, deforestation free and climate resilient land use will be closed. The National REDD+ Task Force, with its given mandate, will follow-up with and provide guidance to the Provincial REDD+ Task Force, chaired by the respective governors, to ensure the sustainability of the GCF financed paradigm shift pathway. In addition, strengthened capacities of EPF and FPF, as described above, will further facilitate improved monitoring, mobilization and channelling of public and private climate finance.

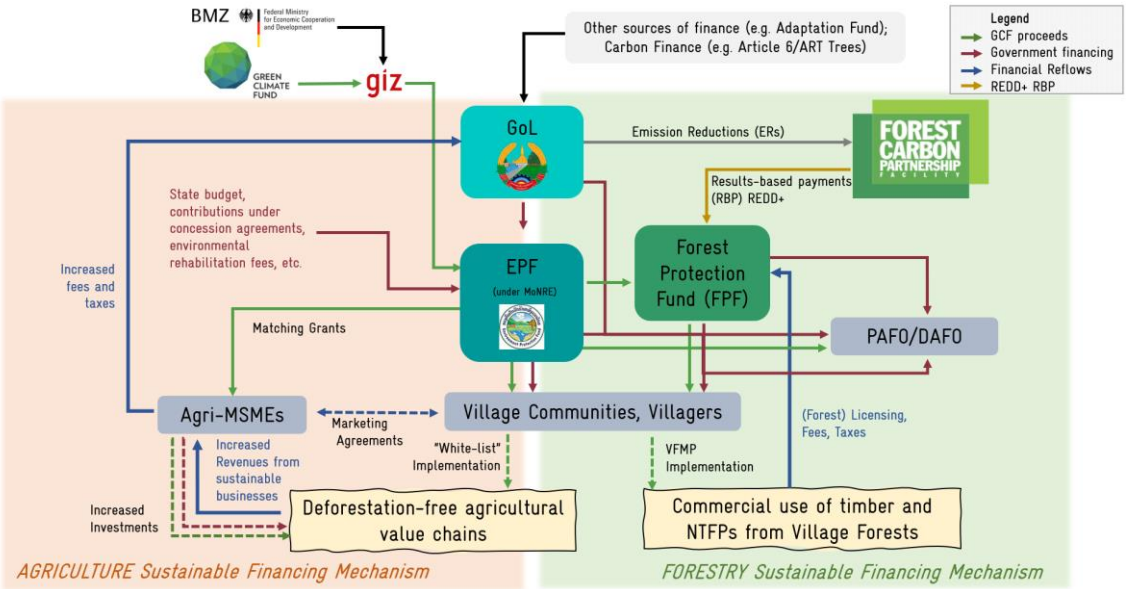


Figure 25. Overview of the complementary financing mechanisms utilized by the project to contribute to the project's long-term sustainability

6.6 Project Structure and Rationale

Project 2 aims to further advance and consolidate the programme's objective of supporting the Government and people of Lao PDR transition to sustainable and climate

resilient management of forests and landscapes at scale. Project 2 is comprised of three components (see Figure 26 below):[52]

Component 1 – Creation of an enabling environment for REDD+ implementation

Component 1 addresses barriers at the national and sub-national levels, including measures that aim to scale-up climate-informed participatory land use planning, strengthen land tenure security, improve forest law enforcement and monitoring, and scale-up and ensure access to sustainable financing for the AFOLU sector.

Financing volume: EUR 6. 9 million GCF and EUR1.8 million co-finance

Component 2 – Market solutions for agricultural drivers of deforestation: Implementation of sustainable and deforestation-free agricultural practices

Component 2 builds on the enabling environment (Component 1) and addresses key drivers of deforestation and degradation within the agricultural sector. It delivers emission reductions at scale through reducing the expansion of agricultural activities into forested landscapes and promotes climate resilient agricultural practices that increase the resilience of local farmers and agro-ecosystems.

Financing volume: EUR 14.1 million GCF and EUR 23.5 million co-finance

Component 3 - Climate change mitigation and adaptation action through forestry

Component 3 builds on the enabling environment (Component 1),[53] and will reduce emissions and strengthen the resilience of local livelihoods and forest ecosystems through sustainable forest landscape management and the promotion of Forest Landscape Restoration (FLR), with a focus on village and conservation forests.[54]

Financing volume: EUR 8.05 million GCF and EUR11.3 million co-finance

[52] Note: Project 1 used the term 'outputs' instead of components. In order to ensure alignment with the GCF Integrated Results Management Framework and new Funding Proposal Template, the term 'component' is applied under Project 2. Outputs under GCF's IRMF are "Changes delivered as a result of project/programme activities that contribute to the achievement of outcomes." – GCF. 2022. Guidance Note to support the completion of the IRMF elements of the revised funding proposal template for PAP and SAP, p. ii.

[53] Specifically, Activities under Component 3 that are subject to Component 1 deliverables are:

For Activity 3.1: Village Forest and Agriculture Grants (VFAG) must be in place after Village Forest Management (VFM) planning is concluded, to provide funds for the implementation of annual plans; Land use planning and improved tenure security – Land Use Plans have to be in place as a precondition for VFM, ensuring full compliance with the project's Environmental and Social Management Plan (ESMP), Ethnic Group Development Plan and Gender Action Plan. Free, prior and informed consent (FPIC) is required, where the procedures are outlined in detail within the ESMP located in Annex 6b of the Funding Proposal.

For Activity 3.2: Identification of existing and/or establishment of new VFAGs to channel climate finance to target villages – VFAGs must be in place after National Protected Area (NPA) management planning is concluded, to provide funds for the implementation of annual plans. Again full compliance with the ESMP and FPIC procedures are required.

[54] Conservation forests will focus on 5 national protected areas (NPAs) and 1 national park within the project area.

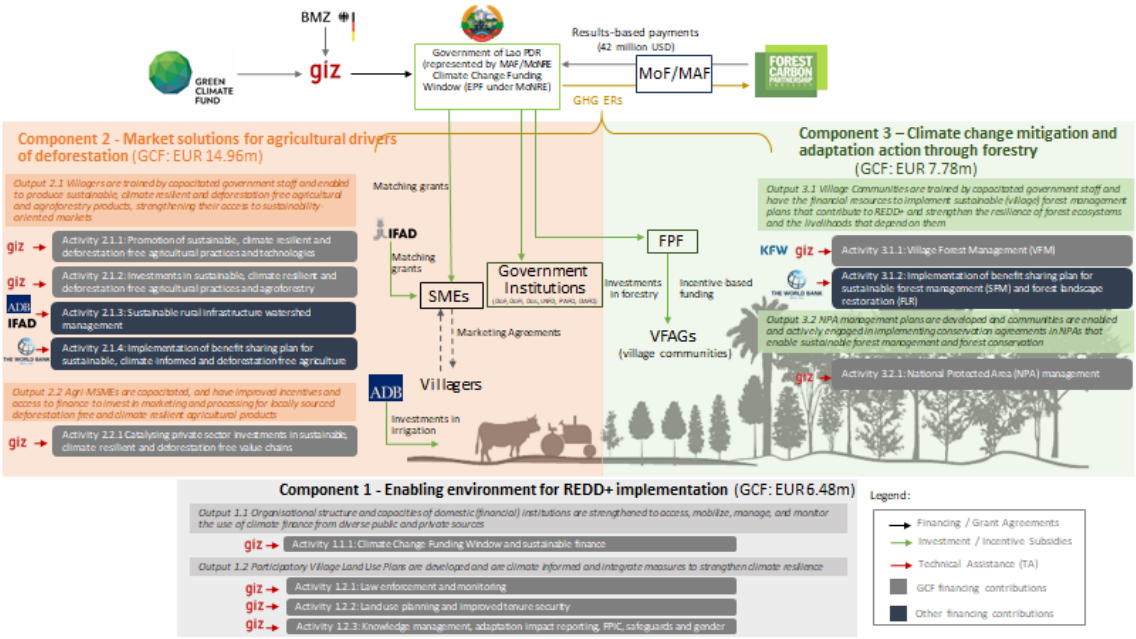


Figure 26. Overview of Project 2 components and activities

In comparison, to Project 1 there have been some adjustments in the project design, including:

Progress made under Project 1, where some activities were successfully completed, including policy mainstreaming and improvements to the regulatory framework. These achievements will also lead to efficiency gains in the context of Project 2, where targeted efforts have strengthened capacities and the overall enabling environment (e.g. updated guidelines, built capacities, training modules, etc.).

The Government of Lao PDR's updated NDC (2021), which highlights the need to create and strengthen clear links between adaptation co-benefits and climate change mitigation in the agriculture and forestry sectors.[55] As such, the project has been re-positioned as a cross-cutting project, and the design adjusted to ensure adaptation is cross-cutting throughout the project's activities. Attention is paid to strengthening the adaptive capacities of villagers through ensuring climate-informed land use planning and investing in climate-resilient and deforestation-free agriculture and sustainable forest management. Adaptation and considerations for resilience building have been mainstreamed across all activities, and additional support provided to update guidance and build capacities on understanding and factoring in climate risk and building the resilience of ecosystems and the local livelihoods who depend on them.

EPF's nomination by the NDC in Lao PDR to start the GCF accreditation process, where Project 2 will provide support as they undergo the accreditation process. Lessons learned from Project 1 and other ongoing projects and initiatives, as well as stakeholder feedback. One example is the increased focus on agri-MSMEs and private sector, which was developed based on consultations with private sector actors and other stakeholders.[56]

55 Due to these adjustments, Project 2's implementation process at village level has been slightly adjusted in terms of terminology and the additional role of EPF in channelling matching grants to agri-MSMEs.
56 An overview of the main changes between the projects can be found under Annex 2c. The project's Stakeholder Engagement Plan provides further information on how stakeholder feedback has been integrated into the project (Annex 7).

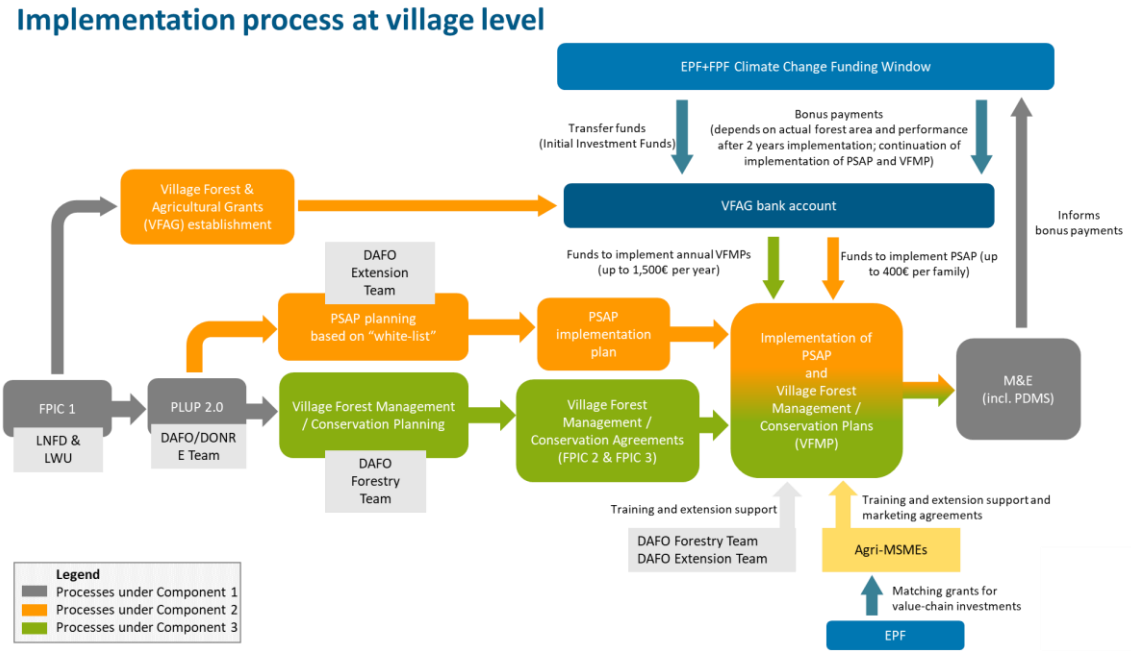


Figure 27. Project implementation process at village level

The following section provides a detailed overview of the 3 Components, Activities and Sub-Activities of Project 2. Each Activity and Sub-Activity is described in detail, including the contribution to the project Component, the budget allocation, the baseline, the deliverables, the technical justification, and the institutions involved.

Component 1 – Creation of an enabling environment for REDD+ implementation

Output 1.1 Organizational structure and capacities of domestic (financial) institutions are strengthened to access, mobilize, manage, and monitor the use of climate finance from diverse public and private sources

Activity 1.1.1: Climate Change Funding Window and sustainable finance

Activity 1.1.1: Climate Change Funding Window and sustainable finance	
Contribution to project output	Lao PDR's potential to raise substantial, long-term climate finance remains partially untapped. Project 1 and Project 2 are designed to support Lao PDR to unlock REDD+ results-based payments (RBP) from the FCPF[57]. Project 1 already supported the establishment of the Climate Change Funding Window[58] at the Environment Protection Fund (EPF). This activity under Project 2 will focus on continuing to support the strengthening of the enabling environment to facilitate the shift from business as usual agricultural and forest land management towards low-emission, deforestation-free and climate resilient practices. It will further explore additional sources of public and private finance for both climate change adaptation and mitigation investments, in line with the country's NDC (2021). Additional sources of finance could include (among others): alternative REDD+ results-based payments (e.g. under the UNFCCC) and markets, including the participation in voluntary market mechanisms or market mechanisms under Article 6 of the Paris Agreement, domestic government revenues (fees, royalties, fines and taxes) and international impact investment attracted by the combination of climate and social benefits that the Lao forestry and agriculture sectors offer. Under this activity the capacities of the two existing Lao funds - the Forest Protection Fund[59] and the EPF, to mobilize, channel and monitor sustainable climate finance will be further strengthened. This will contribute to ensuring the sustainable management and disbursement of existing climate finance sources as well as of potentially new ones (e.g. Climate Change Funding Window, REDD+ results-based payments under the FCFP, GCF, Adaptation Fund and other sources). The following sub-activities are included in Project 2: ▪ Sub-activity 1.1.1.1 Enhancing the capacities of EPF & FPF to manage and monitor climate finance, including results-based payments ▪ Sub-activity 1.1.1.2 Options assessment and action plan for securing long-term financing for NDC implementation in the AFOLU sector
Budget/ Co-finance	**Total Activity Cost: 1,706,635 EUR** ▪ GCF finance: 1,643,720 EUR ▪ Co-finance: 62,915 EUR
Sub-activity 1.1.1.1 Enhancing the capacities of EPF & FPF to manage and monitor climate finance, including results-based payments	

[57] Lao PDR and the World Bank's Forest Carbon Partnership Facility (FCPF) have signed in December 2020 the Emission Reductions Payment Agreement (ERPA). Within this agreement the World Bank commits to make payments between 2021 and 2025 to Lao PDR for verified reductions of up to 8.4 million tonnes of carbon dioxide emissions in northern Laos (equivalent to up to USD 42 million).

[58] Named as REDD+ Funding Window in the FP 117 under Project 1. The name was changed during project implementation preparation initiated by the EPF in order to be able to position themself more broadly to ensure considering various sources of climate finance and not only the forestry sector.

[59] currently not operational and fundamental issues would need to be resolved for the FPF passing due diligence and becoming functional

Description	Under this sub-activity the capacities of the two existing Lao funds - FPF and the EPF, to mobilize, channel and monitor sustainable climate finance will be further strengthened. This will contribute to ensuring the sustainable management and disbursement of existing climate finance sources as well as of potentially new ones (e.g. Climate Change Funding Window, REDD+ results-based payments under the FCFP and other sources – see Sub-Activity 1.1.1.2 below for additional information). **EPF** EPF is undergoing the GCF accreditation process and aims to become a direct access AE in 2023. Thus, the project will also provide EPF with valuable experiences to strengthen their capacities and prepare them to develop, implement and monitor their own projects in the future. EPF will also manage the matching grant mechanism under Project 2, and this Activity will support them to build their capacities to work with matching grants targeted at the private sector. Capacity building will focus on providing support on the following topics: • Management and monitoring of matching grants (linked with Activity 2.2.1.2). Where support will focus on the preparation, execution, and closing of contracts as well as in the overall monitoring of the matching grants. • Integration of climate adaptation considerations into their decision making – this will include building capacities and tailored approaches for identifying, screening, assessing, and managing climate risks • Overall support to rollout the best practices under Project 1 in terms of: ○ Strengthening internal control mechanisms such as spot check procedures[60], and working towards EPF being able to deliver internal audits • Knowledge management so that EPF can capture the lessons learnt from different projects. • An overall HR strategy that helps EPF reduce staff turnover and the associated loss of capacity. **FPF** Project 2 will support FPF with targeted capacity development measures focused on delivering on-the-job training and on capturing knowledge and experience from the implementation of the project with the objective of getting them prepared for the eventual management of results-based payments under the FCPF or other sources of climate finance. Under the project resources will be provided for the FPF to accompany and support the VFAG monitoring process managed by the EPF (under Activity 2.1.2), the PSAP team (DAFO), and the NPMU. This support is complementary to the technical assistance delivered by World Bank under the *GFLL FPF Capacity Building Plan,* nevertheless there will be coordination to ensure that support to FPF ultimately contributes to the objective of strengthening the capacities and standards of the fund to be able to manage international climate finance. GIZ as EE will hire and supervise international consultants to support the capacity development measures for EPF. It will also support the practical training to FPF.

[60] This may include: selecting a random number of expenditures within a specific period of project implementation; and verify all relevant documentation for each transaction ensuring that it adheres to established procedures; expenditures are according to established operational and work plan; verify that the transactions are reflected in the Fund's accounting records and relevant bank statements.

Baseline	**EPF** Established in 2005, the EPF serves as a financially autonomous organization to strengthen environmental protection, sustainable natural resource management, biodiversity conservation and community development in Lao PDR. The resources of the EPF shall only be used to finance regular and recurrent expenses of ministries, departments, agencies and any other public or private organizations and entities receiving financial support from the EPF, where these expenses relate directly to the implementation of Eligible Activities. Project 1 has supported the EPF in establishing the Climate Change Funding Window to channel funds from GCF and other climate finance. In addition, Project 1 is operating via the EPF, where EPF acts as a national Executing Entity for the project. Lao PDR´s Nationally Designated Authority (NDA –MONRE), nominated the EPF as an entity to undergo the GCF accreditation process to become a direct access entity under the GCF. Currently, EPF is undergoing the accreditation process. EPF received 2nd GCF readiness grant for accreditation support. The first readiness grant supported the development of manuals for project management, strengthened fiduciary standards, environmental and social safeguards & gender and the M&E system was updated to meet GCF requirements. The second GCF readiness grant seeks to support finalization of the accreditation process to the GCF, including support entering the Accreditation Master Agreement and also seeks to support the development of project concepts for eventual development and submission of projects to the GCF. There is no specific support on climate risk screening or adaptation monitoring considered within the 2nd readiness proposal further which is why further support from Project 2 will be provided. During the implementation of Project 1 a few organizational capacity gaps of EPF have been identified (KM, HR internal control) that if addressed can increase the efficiency of the fund. **FPF** Hosted under the Ministry of Agricultural and Forestry (MAF). The Decree on the Forest and Forest Resource Development Fund (No. 38/PM, 2005)112 "*determines principles, regulations on the establishment, management and monitoring of the Forest and Forest Resource Development Fund [since renamed FPF], aiming at raising funds from people engaged in forestry operations so that funds can be used for management, protection and development of the forest resources and contributed to the national economic and social development*". The FPF, renamed from Forest and Forest Resource Development Fund (FFRDF), has a legal mandate to collect and disburse forest sector financing to the district and village levels. It funds forestry activities, including conservation and protection of watersheds and protected areas, tree planting, wildlife conservation and training. Project 1 explored channelling finance through the FPF, however it was determined FPF has insufficient capacities and systems in place to meet international fiduciary standards. As such, funds were channelled through EPF under Project 1. FPF was initially considered for channelling of REDD+ results-based payments from the FCPF Carbon Fund for USD 3 million in form of an upfront payment and as well as for the anticipated mid-term payment expected by

	2023 of approx. USD 14 million. However, findings from World Bank assessments, conducted during support missions for the implementation of the Readiness Grant and the ERPA from the 30.06-01.07.2021, show that the FPF does not yet meet the required fiduciary standards. Support from the World Bank has resulted in some, but overall insufficient, progress in strengthening the standards and procedures of EPF. Given this, it was necessary to invoke the contingency plan for the advance payments and possibly for the results-based payments. As stated in the draft Benefit Sharing Plan (BSP) (Government of Laos PDR, 2021, p. 45), "*the activation of the contingency plan puts the DoF as the modality to receive and disburse the advance and results-based payments under the ERPA, while committing to improve the FPF's capacity to meet World Bank's fiduciary requirements. Under this modality, the REDD+ Division under the DoF will oversee funds disbursement and reporting*". Once FPF is deemed ready to take-over fund management by DoF, the WB will conduct a complete and comprehensive fiduciary assessment. Tentatively this assessment by World Bank is expected by late 2022 or early 2023, and the final decision on the operational capacity of the FPF would be expected by 2023. Project 1 included some funds to build the capacities of FPF, however it has not yet started to implement capacity building as there is a need to closely coordinate first with other donors (World Bank) to ensure support is complementary and builds on synergies.
Deliverables	EPF • Guidelines for managing matching grants to agri-MSMEs under Activity 2.2.1 • Knowledge management and human resource strategy that allows EPF to capture knowledge and experience generated from the implementation of different international grant finance projects as well as reduce capacity drain • Basic guidelines for identifying, assessing, and managing climate risks FPF • Reports on progress of capacity development measures
Justification	The NDC estimates that an additional USD 1.7 billon are needed for the period 2020-2030 for the country to be able to meet the conditional mitigation target in the AFOLU sector (increasing forest cover to 70% of land area). In addition to mobilizing additional sources of finance (supported under Sub-Activity 1.1.1.2 below), there is a need to strengthen the capacities and improve the systems of national institutions (EPF and FPF) to channel funds efficiently and effectively, while ensuring compliance with international fiduciary and E&S standards. Also, for Lao PDR to attract more funds, it is necessary to facilitate the accreditation of national funds to directly access international climate finance, and build the capacities of national institutions to design, implement and monitor projects. In order for the EPF to become a GCF accredited entity and to independently design, implement and monitor future projects, more time is needed and further capacities have to be built (especially related to monitoring and evaluation [M&E]), but also related to overall organizational support. Under Project 2, EPF will be also responsible for channelling matching grants to agri-SMEs (Activity 2.2.1) for which specific support on efficient contracting, procurement, overall management of the financial process, and monitoring the investments is required.

	In terms of the FPF, while they have made some progress in fulfilling their legal mandate to manage forest sector finance, their progress is slower than initially expected and significant time and effort would be required to bring the FPF to an operational stage. This is the reason why the capacity development under this activity focuses on the provision of practical training.
Institutions involved	The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. With regard to the specific actions outlined above: GIZ as EE and international consultants will support the EPF with the capacity development measures described above. GIZ as EE will support the capacity development measures for FPF and ensure their quality during the implementation of VFAG approach.
Sub-activity 1.1.1.2 Options assessment and action plan for securing long-term financing for NDC implementation in the AFOLU sector	
Description	This sub-activity will support the Lao PDR government to identify suitable new long-term climate sources. It will also support the government to assess the readiness actions necessary to be able to gain access to market-based approaches that emerge in the context of Article 6 of the – including support on decisions related to the eligibility of programmes, projects, and units under the country's NDC; adherence to relevant integrity principles; and capacities to meet potential requirements related to an enhanced transparency framework and addressing issues related to corresponding adjustments. Additionally, under this sub-activity, the gaps and pathway to conformance with the requirements of the standards required by REDD+ voluntary initiatives will be assessed alongside options to allow Lao PDR to access results-based finance for ERs generated in excess of the FCPF Carbon Fund contract volume . This will include emerging market and non-market-based approaches (such as the Lowering Emissions by Accelerating Forest Finance Coalition or broader voluntary carbon markets). Finally, support will be provided to Lao PDR in exploring, identifying, and fundraising from funding sources (e.g. Adaptation Fund) that support the Lao PDR government with financial backing for meeting the conditional NDC implementation targets and adaptation investment needs. The NDA and DCC (Department of Climate Change) will be supported to mobilize and channel climate finance to enable the Lao PDR to fulfil its ambitious NDC. Analyses will be supported by national and international consultants, with an expertise in Article 6, compliance, and voluntary carbon markets. In addition, workshops will be held with Lao PDR government staff (MAF and MONRE) to ensure recommendations made are well tailored to the national circumstances.
Baseline	▪ Lao PDR and the FCPF Carbon Fund signed an ERPA in December 2020 for RBPs up to a maximum of 8.4 million tCO_2eq for the period 2019-2024 ▪ Actions for assisting the Government of Laos (GoL) in developing a strategy for long-term REDD+ financing have been taken. This included

	supporting the development of implementation arrangements for the Emission Reductions Programme, which enables GoL to access result-based payments from the FCPF Carbon Fund. Other actions such as analysing the situation of forest sector, production, private sector activities and other financing streams to outline recommendations for actions to increase sector financing from other sources, such as timber fees, potential new domestic sources such as payments for ecosystem services (PES) from the hydropower industry; international climate finance from other donors and market mechanisms are planned under Project 1, but have not yet started.
Deliverables	▪ Gap assessment and action plan for enabling the participation of Lao PDR in market mechanisms under Article 6 (6.2 and 6.4 pathways), including options to address issues related to corresponding adjustments ▪ Viability assessment for Lao PDR participation in existing REDD+ voluntary market and non-market mechanisms (e.g. the LEAF Coalition) for ERs generated in excess of the FCPF Carbon Fund contract volume ▪ Conformance plan to meet the requirements (accounting, safeguards, etc) of "*The REDD+ Environmental Excellence Standard"* (TREES) and/or other market-oriented standards (e.g. VERRA's Jurisdictional Nested REDD+ standard) ▪ Financing strategy and implementation plan for the NDA to identify and fundraise climate finance to meet conditional NDC targets and the climate change adaptation investment needs outlined in the NDC
Justification	The NDC estimates that an additional USD 1.7 billon are needed for the period 2020-2030 for the country to be able to meet the conditional mitigation target in the AFOLU sector (increasing forest cover to 70% of land area). Additional sources of finance are required to further support the transition to deforestation-free and climate resilient development pathway. Lao PDR has the potential to raise substantial, long-term climate finance from future REDD+ results and for REDD+ results achieved in excess of the contract volume of the FCPF Carbon Fund. One option to access additional results-based finance comes from REDD+ voluntary initiatives such as the LEAF Coalition – a public private coalition aiming to halt tropical deforestation with USD 1 billion for results-based finance – or from broader voluntary carbon markets where issues around environmental integrity of project-based approaches are increasing buyer interest in jurisdictional REDD+ programmes. To participate in these voluntary initiatives, however, Lao PDR would have to adopt new market-oriented standards (such as TREES or VERRA JNR). Technical support is required the implications of the participation in voluntary REDD+ initiatives (e.g. implications for the country's NDC); the technical gaps meeting the requirements of market-oriented REDD+ standards and developing action plans for meeting them. The Paris rulebook was finalised during COP26 in Glasgow. Article 6 will create opportunities for developing countries to access additional climate finance from market and non-market-based approaches. However, several key decisions at country level, with long-term implications, will need to be made (amongst others, whether to follow the track for Article 6.2 or 6.4; eligibility criteria of programmes, projects, and units under the NDC; the adherence to relevant carbon integrity principles; assessments of the capacities and resources needed to be able to continuously monitor emissions, develop a register, and deal with issues related to corresponding

	adjustments). Technical support is required to inform and assess the implications of different decisions from the Lao PDR government. For climate adaptation, the NDC also highlights that there is a *"lack of diversified sources of long-term financing. It is hard to secure private sector financing in this area in particular, so public sector funding including ODA and other development assistance are a primary source."* Thus, the project aims to support Lao PDR to mobilize additional public and private climate finance and improve the channelling of finance through national institutions (EPF and FPF).
Institutions involved	The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. GIZ as EE will hire and oversee consultants supporting the NDA and DCC in developing the gap assessment for participation in Article 6, viability of country participation in REDD+ voluntary initiatives, conformance plans with REDD+ market-oriented standards, and fundraising options for climate change adaptation.

Output 1.2 Participatory Village Land Use Plans are developed and are climate informed and integrate measures to strengthen climate resilience

Activity 1.2.1: Law enforcement and monitoring

Activity 1.2.1: Law enforcement and monitoring	
Contribution to project output	Strengthened law enforcement is a key measure needed to support Lao PDR's commitment to REDD+, as well as other high-level initiatives including PMO 15 and the FLEGT-VPA. Illegal logging and unauthorized clearing of forest land still exist and are a challenge for provincial and district authorities to address due to limited budgets and technical capacities as well as understaffing. Project 1 supported the revision of standard operating procedures, the strengthening of systems, and provided trainings on Provincial Deforestation Monitoring Systems (PDMS), while supporting the implementation of PDMS in 3 provinces (Houaphan, Sayabouri, Luang Prabang). It further strengthened the regulatory framework, supporting revisions in the Decree on Protected Areas (ongoing), Forestry Strategy 2021-2035 the National REDD+ Strategy (April 2021), technical guidelines for village forest management planning (June 2021), among others, which have created a stronger basis for reducing deforestation and forest degradation – including forest law enforcement and monitoring. Project 1 implementation has shown the current approach to strengthen law enforcement and monitoring is effective and well-tailored to the local context. However, despite the advancements under Project 1, continued support is needed to address outstanding barriers related to forest law enforcement and monitoring. Project 2 will build on the aforementioned achievements under Project 1, and will continue to train relevant monitoring and law enforcement staff, especially the Department of Forest Inspection and its sub-national line agencies, in all six provinces (Sub-Activity 1.2.1) , scale PDMS to the three other provinces within the ER-Programme area (Sub-Activity 1.2.2), and support the harmonization of local approaches and improve knowledge management for strengthened law enforcement (Sub-Activity 1.2.1.3).

Budget/ Co-finance	**Total Activity Cost: 1, 1,584,039 EUR** • GCF finance: 1,508,895 EUR • Co-finance: 75,144 EUR
Sub-activity 1.2.1.1: Training to facilitate implementation of enhanced law enforcement	
Description	Relevant government staff, including Department of Forest Inspection staff and their respective sub-national line agencies among others,[61] will be trained using detailed and consistent information on PDMS and best practices for forest monitoring and law enforcement. This will include trainings for targeted individuals (with intermediate experience on GIS/mapping) to use remote sensing data, generating maps and supporting monitoring of deforestation (via PDMS) to support POFI and DFIU with monitoring deforestation and forest degradation. Training modules and information will be developed by the project and used for training and knowledge exchange, including educating new staff. It will train staff on standard operating procedures and best practices, building on current advancements under Project 1, ensuring a consistent standard for law enforcement is applied across the ER-Programme area.[62]
Baseline	Forest monitoring and law enforcement has been a challenge in Lao PDR due to low capacities, lack of suitable monitoring systems, governance challenges, and budget limitations. Lao PDR has made important strides in recent years by improving the legal and regulatory framework (e.g. new forest law, Decree on Protected Areas (ongoing), Forestry Strategy 2021-2035 the National REDD+ Strategy (April 2021). This has been further strengthened by activities under Project 1 related to the national deforestation monitoring system (implemented by JICA), and regulatory strengthening. Project 1 further developed Standard Operating Procedures (SOPs) for forest monitoring and law enforcement. These advancements have helped facilitate and DOFI staff and their respective sub-national line agencies in Houaphan, Luang Prabang and Sayabouri have been trained on SOPs and PDMS, and continue to be trained on best practices for forest monitoring and law enforcement. Bokeo, Luang Namtha and Oudomxay do not have PDMS, and will need such a system to facilitate provincial-level monitoring and improve forest law enforcement.
Deliverables	▪ DOF, PAFO, PONRE, DONRE, DOFI staff and their respective sub-national line agencies in all 6 provinces trained on SOPs, PDMS and best practices for forest monitoring and law enforcement.
Justification	Illegal logging and unauthorized clearing of forest land still exists and is a challenge for provincial and local districts to address due to limited budgets, technical capacities and staff resources. Enforcement is often limited to driving along main roads; many offices are understaffed and have insufficient equipment and resources. Some offices note that they do not have permanent access to GPS equipment, and often have to borrow from PAFO. Others note that, at times, they do not have sufficient budgets to investigate infractions (e.g.

[61] Including members of rapid response teams: PAFO, DAFO, POFI, DOFI, PONRE, DONRE, and Provincial Wildlife Enforcement Network, military, police, customs officials.

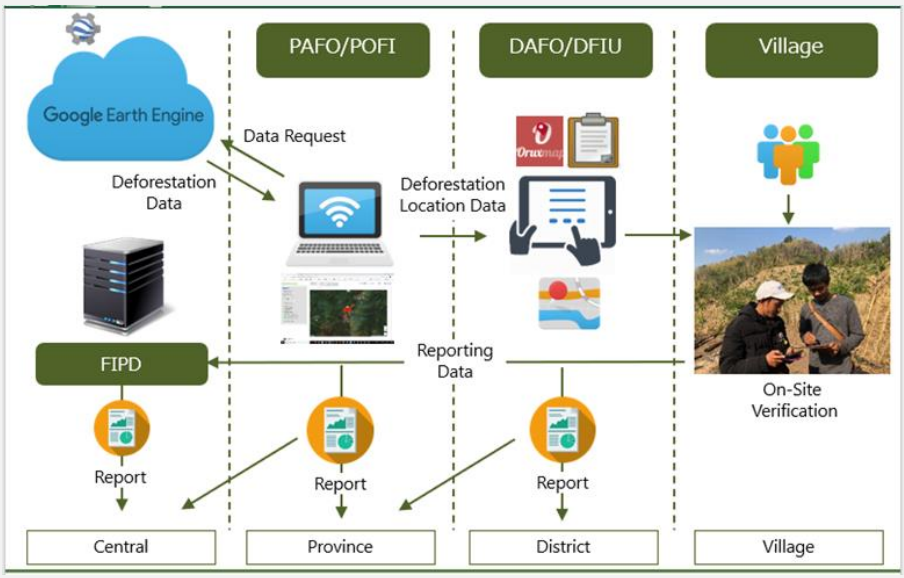
[62] All knowledge (revisions to roles, clarified reporting chains) will be clearly documented and disseminated using diverse communication approaches (written, oral presentations, posters, and radio programs) to reach a diverse audience. Where appropriate, materials will be translated into local languages. This will ensure that the knowledge and procedures remain within organizations even if staff change.

	to pay for fuel for vehicles). Majority of provinces do not consistently use spatial technology to support Forestry Law enforcement and monitoring. Many donor projects have supported improved law enforcement in Lao PDR. In SUFORD-supported provinces (Sayabouri, Luang Namtha, Bokeo and Oudomxay), it was noted that while law enforcement staff have established basic skills and established a systematic enforcement programme, a major challenge is to ensure sufficient funding given budget constraints. While the use of new tools has been initiated (e.g. national forestry reporting system, internal monitoring system, document management system, budget planning system and the Department of Inspection information management system), it is noted that further support is needed to "ensure that the use of these management tools becomes a routine activity" (DOF/MAF 2013, pp. 48-49), Thus, the lack of PDMS in 3 provinces and capacity gaps in all 6 provinces are a major barrier, and this activity aims to facilitate consistent, transparent and high-quality forest monitoring and law enforcement in all 6 provinces. This sub-activity will facilitate the institutionalization of trainings and enhanced knowledge management through training trainers, and develop trainings to scale capacity building efforts across all 6 provinces. Stakeholder consultations during the development of Project 2 highlighted that while the trainings and support under Project 1 have been helpful, that capacities are low and further support is needed within Project 2, including on-the-job training in all 6 provinces.
Institutions involved	▪ The implementation of this Activity will be led by the NPMU and the PPMUs in close coordination with MAF and MONRE (for nature conservation forest areas and protected forest categories), DOFI and POFIs (for production, protection and unclassified forest categories). ▪ Implementation of the law enforcement activities is integrated within the individual actions under Component 3. ▪ Capacity development and trainings will be delivered by the NPMU and PPMUs, in close cooperation with Government authorities.
Sub-activity 1.2.1.2: Operationalization of provincial deforestation monitoring system (PDMS)	
Description	This sub-activity will support the development and operationalization of the PDMS in the 3 additional provinces covered under Project 2 (Bokeo, Luang Namtha and Oudomxay), and the continued operationalization of PDMS's in Project 1 provinces as it expands to cover additional villages (Sub-Activity 1.2.1).[63] This will involve on-the-job training and technical support for Provincial Deforestation Monitoring Teams, who will be set up in each Province. PDMS involves near real-time deforestation monitoring.[64] It is a remote-sensing based tool combined with field verification to monitor land use and forest change within village forest boundaries using Sentinel 2 Satellite imagery. It has been designed considering the local context, and involves a user friendly approach with minimal equipment.[65] It involves the following main steps: • **Extraction and display of deforestation areas:** Provides a weekly deforestation monitoring using Google Earth Engine (GEE) Script in Web Application online within PDMS (take 1 – 2 Days). The result are

[63] PDMS have been set up in Project 1 in Houaphan, Luang Prabang and Sayabouri. They have not yet been set up in Bokeo, Luang Namtha and Oudomxay. Capacities in Lao PDR remain low, and additional support is necessary to support Government staff working on law enforcement and forest monitoring to operationalize PDMS.

[64] The PDMS approach was developed by JICA under their F-REDD programme. Project 1 found the approach to be suitable.

[65] Necessary Equipment require only 1 laptop PC with internet environment for Province and a tablets for field investigation per District. Need Basic computer and mobile device skill (it does not require technical knowledge and skills on GIS and satellite image analysis).

	REFERENCE (before) and TARGET (after) satellite images, where the Forest Loss Area can be semi-automatically displayed on Web-application running on a computer. Based on this information, POFI/PAFO staff select the site for field investigation based on the Forest Loss Area from GEE and register the site polygons and send it to the tablet for the onsite verification. • **On-site verification/ administrative guidance:** Based on the deforestation area displayed on the tablet, DFIU/DAFO staff investigate the area where deforestation occurred in the field together with villagers. They will record the information on deforestation area in the tablet. Following send the information from ODK to Sever in the Forest Inventory and Planning Division (FIPD). • **Reporting and information management:** The input data on the tablet is semi-automatically transferred to the National Forest Monitoring Systems (NFMS) server, which then creates the reporting and statistical information for each level. Procedures, tools and best practices for the PDMS and forest law enforcement will be applied based on advancements of Project 1,[66] ensuring operational PDMS follow a clear standard for monitoring and law enforcement.  *Figure 28. Overview of Provincial Deforestation Monitoring Systems*
Baseline	▪ PDMS systems established and operational under Project 1 in 3 provinces (Houaphan, Luang Prabang and Sayabouri). ▪ Regulatory framework strengthened under Project 1, resulting in more clear regulations. Awareness raising on these regulations continues, and should be mainstreamed across activities in Project 2. ▪ Project 1 implementation has shown the current approach to strengthen law enforcement and monitoring is effective and well-tailored to the local context. However, consultations highlighted further on-the-job capacity building support is needed as PDMS are operated, as they are a new initiative in Lao PDR.

[66] E.g. Standard operating procedures (SOPs), improved investigative procedures, whistle-blower systems and improved anti-corruption safeguards established under Project 1.

Deliverables	▪ PDMS established and operational in all 6 provinces
Justification	As described in Chapter 3 and under the previous sub-activity, weak governance and insufficient law enforcement are underlying causes of deforestation. PDMS facilitate improved monitoring at the provincial level, creating increased transparency and accountability to detect unplanned deforestation and facilitate improved forest law enforcement.
Institutions involved	▪ The implementation of this Activity will be led by the NPMU and the PPMUs in close coordination with MAF and MONRE (for nature conservation forest areas and protected forest categories), DOFI and POFIs (for production, protection and unclassified forest categories). ▪ Implementation of the law enforcement activities is integrated within the individual actions under Component 3. ▪ Capacity development and trainings will be delivered by the NPMU and PPMUs, in close cooperation with Government authorities.
Sub-activity 1.2.1.3 Harmonization of approaches and improvement of knowledge management for strengthened law enforcement	
Description	This sub-activity facilitates the harmonization of approaches for local law enforcement across the project area.[67] Specifically, it will support knowledge exchange workshops and finance ongoing knowledge management measures to ensure approaches are harmonized and lessons learned are fed back into training, guidance materials and PDMS design and management.
Baseline	▪ Project 1 implementation has improved knowledge management and strengthened law enforcement within the 3 provinces where it has been implemented. However, consulted sub-national authorities mentioned the need to further harmonize approaches, as there is still substantial variation in the implementation of PDMS and law enforcement practices among provinces.
Deliverables	▪ Recommendations for harmonizing approaches, which can be mainstreamed into PDMS supported documents and trainings (including training trainer programs). Documentation will follow the project's knowledge management plan.
Justification	This activity responds to the lesson learned from Project 1, where government officials highlighted that additional support was needed to share lessons learned, success factors, and best practices among all 6 provinces to facilitate harmonization of approaches and improved knowledge management. As PDMS will be new in 3 provinces, this is timely to ensure consistent implementation of PDMS and application of best practices for forest monitoring and law enforcement.
Institutions involved	▪ The implementation of this Activity will be led by the NPMU and the PPMUs in close coordination with MAF and MONRE, DOFI and POFIs ▪ Workshops to engage diverse actors involved in forest law enforcement in each of the 6 provinces and project districts (e.g. PAFO, DAFO, POFI, DOFI, PONRE, DONRE, and Provincial Wildlife Enforcement Network, military, police, customs officials, local villagers) to share their lessons learned, and support improved harmonization of approaches and knowledge sharing and management.

[67] Feedback from Project 1 highlighted there was a need for improved harmonization of approaches and sharing of best practices, lessons learned and experiences from across the six provinces.

Activity 1.2.2: Land use planning and improved tenure security

Activity 1.2.2: Land use planning and improved tenure security	
Contribution to project output	Participatory Land Use Planning (PLUP) is an essential prerequisite and forms the base for VFMP, FLR, watershed protection activities (with a focus on EbA) and the Promotion of climate-resilient, sustainable and deforestation-free agricultural practices. The leading agencies for the land use planning activities at national level are the Department of Forestry (DoF), the Department of Agricultural Land Management (DALaM), both under Ministry of Agriculture and Forestry (MAF) and the Department of Land (DoL) under Ministry of Natural Resources and Environment (MoNRE). At provincial and district level, the supervision, coordination and implementation of land use planning is shared between PAFO and PoNRE or DAFO and DoNRE respectively. Project 1 supported the development of an improved PLUP process (i.e. PLUP 2.0), which clarifies village boundaries, categorizes and separates agricultural land use from forest zones, defines future land use changes taking into consideration traditional knowledge, strengthens village forest and land management and leads to clearly defined village land use regulations. Furthermore, PLUP 2.0 also emphasizes harmonization of land use plans at landscape level in support of forest and landscape restoration (FLR) and watershed management. All PLUP 2.0 documents need approval by the majority of villagers and are officially approved by the District Governor. This activity under Project 2 will support the development of a "climate change adaptation supplement" to the PLUP 2.0 guideline and related capacity building efforts, building on the updated guidance developed under Project 1 while strengthening the use of climate information and climate change adaptation measures within PLUPs. It will further ensure the scaling up of this strengthened PLUP 2.0 process in all six provinces (240 villages in Bokeo, Oudomxay and Luang Namtha, and 50 villages in Houaphan, Sayabouri and Luang Prabang). In addition, PLUP 2.0 will also lead to broader discussions within adjacent villages and kumbans, focusing on land use compatibility (including upstream and downstream dynamics), ecosystem-based adaptation to strengthen resilience to flooding (e.g. riverbank stabilization, riparian buffer zone restoration), forest and landscape restoration, the design and designation of eco-corridors, among other factors. The following sub-activities are included in Project 2: ▪ Sub-activity 1.2.2.1: Mainstreaming climate change adaptation into land use planning manuals and guidelines, and training district officers on climate risk and vulnerability and suitable interventions to strengthen climate resilience ▪ Sub-activity 1.2.2.2: PLUP in target project districts (linked with Activity 1.2.1 and Components 2 and 3) in hotspot areas[68] ▪ Sub-activity 1.2.2.3: Monitoring and enforcement of land use plans.
Budget/ Co-finance	**Total Activity Cost: 3,815,171 EUR** ▪ GCF finance: 2,162,763 EUR ▪ Co-finance: 1,652,408 EUR

[68] In some district and target villages, donor-funded initiatives such as the GIZ LMPD project have supported land use planning. These land use plans will not require a new land use planning exercise and the programme will build upon and support their implementation and monitoring

Sub-Activity 1.2.2.1: Mainstreaming climate change adaptation into land use planning manuals and guidelines, and training provincial core PLUP trainers on climate risk and vulnerability and suitable interventions to strengthen climate resilience	
Description	This sub-activity will focus on mainstreaming climate change adaptation within the PLUP 2.0 process, through the development of an "adaptation supplement", which can be integrated within the PLUP 2.0 process and guideline. This approach will build on the critical advancements made under Project 1, including capacity building efforts of provincial and district PLUP teams. In particular, this sub-activity will support the: ▪ Development of materials reflecting the results from the project´s climate risk and vulnerability assessment (see Chapter 3 of this Feasibility Study and Annex 2d for the CRVA), and other useful existing materials and tools including:[69] ○ Government of Lao PDR´s Land Resources Information Management System:[70] This tool includes information on national agro-ecological zoning (NAEZ, considering climate change and biophysical analysis), which would be particularly helpful in strengthening the use of climate information in PLUP processes and decision making.[71] ○ Lao Climate Services for Agriculture tool: This tool is useful for providing climate information to PAFO and DAFO, and farmers as it includes agro-met services and advisories. While also useful for communication to farmers and extension staff under Component 2, its seasonal forecasts and climate information could inform the process (combined with other information such as the resources listed above, and those within the PLUP 2.0 guideline). ▪ Development of training materials for training trainers within provincial and district PLUP teams. ▪ Elaboration of informative materials for villagers on climate change, climate risk and vulnerability, and resilient land use practices.[72] ▪ Mainstreaming of climate change adaptation-related considerations within PLUP monitoring processes and procedures (that are implemented under Sub-Activity 1.2.2.3). This will include, i) screening that climate change adaptation is mainstreamed in submitted PLUPs, and they are of sufficient quality (also screening for maladaptation

[69] It should be noted there is no "one" tool to mainstream climate information in land use planning in Lao PDR. As outlined in the CRVA, there are substantial data gaps that persist, and while various programs/ projects are starting to develop tools they are still being developed and improved. Regardless, Project 2 presents an opportune moment to contribute to experiences in strengthening climate change adaptation through PLUP processes. To the greatest extent possible, GIZ will cooperate with FAO, and will aim to build on the proposed FAO GCF project "Scaling up climate-responsive planning and decision making for resilient agriculture and livelihoods in Lao PDR" which is under development. FAO´s project aims to further improve the Land Resources Information Management System and the Lao Climate Services for Agriculture tool. Particular attention will be paid to tapping synergies linked with improved climate information and strengthened tools to facilitate climate-informed decision making and advisory services in the agriculture and land use sector. For more information on other relevant ongoing and planned donor initiatives, refer to the appendix.

[70] This tool includes FAO supported climate-informed agro-ecological zoning maps on land and crop suitability. Maps consider diverse factors and conditions, including: climate, soil, hydrology, land use, market access, protected areas, populated areas, terrain, livestock, models (crop water requirements, thermal screening, crop simulation, biomass calculations, and evapotranspiration), constraints (climate, soil and terrain). Maps provide insight into potential suitability, estimated yields and optimal crop cycles, among others. Suitability maps exist for some key crops in the project area, including: coffee, maize, cassava, and rice. For more information on the map development process, refer to FAO. 2021. Agro-ecological zones. Assessing alternatives for future cropping systems. Part of the Land Resources Information Management System (LRIMS). Vientiane, Lao PDR.

[71] FAO, the Department of Agricultural Land Management, the National Agricultural and Forestry Institute (NAFRI), the Department of Meteorology and Hydrology (DMH) and CIAT South East Asia, arx iT and the University of Utrecht/ CCAFS and others continue to support the government for policy options and risk zoning- hotspot maps. The project will follow up with them at project start to identify if there are further maps and resources that could inform the PLUP process.

[72] This was emphasized by CSO stakeholders during the project development process.

	risks/ unsuitable activities or practices), ii) FPIC 2.0 including additional survey questions on climate change adaptation, and iii) ensuring monitoring reports reflect on climate change impacts and adaptation. To support these processes, international and national consultants will be hired to support adaptation mainstreaming and the development of the PLUP 2.0 adaptation supplement and related supporting materials and trainings. Budget will also be provided to print informative materials to support the PLUP 2.0 process (for district PLUP teams and villagers), and for training provincial core PLUP trainers from PAFO, PALaM and PoNRE on climate change and the PLUP 2.0 adaptation supplement.
Baseline	Land use planning in Lao PDR builds on over 20 years of experience in donor-funded projects (e.g. KfW, GIZ, German AgroAction and SIDA, Tabi, AgriSud, among others) and national initiatives to conduct land use planning. Project 1 involved the development of a comprehensive guideline, building on the lessons learned from other land use planning processes in Lao PDR. The PLUP 2.0 process has made the following advances (see also PLUP 2.0 Guideline in Annex 2h, pages 7-9): ▪ Ensuring land use planning includes a broader landscape orientation ▪ Integrating forest landscape restoration within PLUP processes, with a focus on watershed functions, connectivity of protected areas, and more integrated land uses. ▪ Clarifying institutional arrangements, roles and responsibilities throughout the PLUP process (from planning to implementation to monitoring and evaluation) ▪ Creating a clear procedure for monitoring approved PLUPs ▪ Training of provincial level core trainers in 3 provinces to facilitate replication ▪ Strengthening of gender equality and social inclusion within PLUP ▪ Digitalizing and storing finalized PLUP 2.0 maps in the Land Use Information System (LUIS), a platform managed by the Natural Resources and Environment Information Centre (NREIC), the Department of Land within MONRE, and the Department of Agricultural Land Management (DALaM) in MAF ▪ Improved harmonization of land use planning processes through LUIS and improved coordination with donors. However, an area for further improvement is related to climate change adaptation, and the consideration of climate risk and vulnerability within the PLUP process. While there are topics with synergies for climate change adaptation (improved matching of conditions and land use activities, forest landscape restoration, and more harmonized and integrated land management approaches), neither climate change risks and vulnerability nor climate change adaptation are explicitly mentioned nor systematically addressed within the PLUP 2.0 guideline.
Deliverables	▪ Adaptation supplement to the PLUP 2.0 Guideline ▪ Training of provincial PLUP trainers on PLUP 2.0 and the adaptation supplement ▪ Training of district PLUP teams on PLUP 2.0 and the adaptation supplement ▪ Training materials developed to accompany local trainings, with a focus on awareness of climate change, related risks and resilience building measures.

Justification	Lao PDR's NDC (2021) highlights the priority to promote integrated land use planning, natural resources and environment management, which in turn can facilitate the adoption of resilient AFOLU practices that are well suited to the local context. However, until now, there are limited experiences piloting the systematic integration of climate change information and adaptation into these processes in Lao PDR. Within the PLUP 2.0 guideline, there are several areas where there are synergies with climate change adaptation and resilience building (e.g. increased emphasis on aggregation and consideration of upstream/ downstream impacts, forest landscape restoration, river bank/ protected forest restoration, among others), however the PLUP guideline could be strengthened to include a more systematic and explicit approach to i) raise awareness on climate change, including climate risk and vulnerability and best practices to strengthen the resilience of local livelihoods and ecosystems, and ii) ensure that such considerations are reflected within the PLUP design process and approved plans. Given the substantial efforts made to raise awareness, build capacities and scale up the PLUP 2.0 approach, and considering the project will be implemented over 3.5 years, it is recommended that a PLUP 2.0 "Adaptation Supplement" is developed. This approach is considered favourable because: ▪ The supplement can be integrated within the PLUP 2.0 process and guideline. This ensures the process builds on capacities built and approaches tested under Project 1. ▪ It will further ensure the efficiency of the implemented process, as the PLUP 2.0 has been designed with sustainability in mind, with a reasonable budget that facilitates replication and upscaling.
Institutions involved	GIZ as EE will hire and oversee consultants supporting climate change adaptation mainstreaming. Provincial and district level PLUP teams will be trained on the climate change adaptation supplement and PLUP 2.0 guidelines.
Sub-Activity 1.2.2.2: PLUP in target project districts (linked with Activity 1.2.1 and Components 2 and 3) in hotspot areas	
Description	PLUP will be implemented in selected target villages to improve planning to increase the efficiency, resilience and productivity of land use, while also promoting the sustainable management of forest areas. The PLUP approach will follow the PLUP 2.0 guideline (initially developed under Project 1), and adaptation supplement (developed under Sub-Activity 1.2.2.1). This sub-activity will focus on the implementation of PLUP in target districts, while sub-activity 1.2.2.3 will focus on the monitoring and enforcement of these plans. Key stages and actions following the PLUP 2.0 process are briefly outlined in the following Table 1 (for detailed procedures refer to the PLUP 2.0 Guideline in Annex 2h). In total, the project will replicate the PLUP 2.0 approach or the updating of existing land use plans by district teams in 240 target villages in Luang Namtha, Bokeo and Oudomxay, and 50 villages in Houaphan, Sayabouri and Luang Prabang provinces. *Table 14.* Overview of the project´s participatory land use planning process

Stage	Brief description
1. Preparation	▪ Collecting important equipment, materials and tools (e.g. laptops, printers, LCD projectors, flipcharts, digital cameras, GPS receivers, high resolution satellite image printouts and-or aerial photography), ▪ District PLUP team trainings on PLUP 2.0 and the adaptation supplement. Additional GIS trainings will be provided for the PLUP team.[73] ▪ Preparations in the office (work plan development, budget plans, time schedules) ▪ Preparation of field work (notifying villagers and making precise appointments, inviting representatives from neighbouring villages for meeting on village boundary delineation)
2. Village orientation meetings	▪ 1st Village Meeting: Inclusion of women and men without exclusion of people from sub-villages or hamlets. Introduction of the team and clear message of PLUP 2.0's objectives and stages or activities. Engage in a dialog and discussion on general issues or problems faced by the villagers. PLUP team should inform the attendees about the next steps and about the invitation to representatives of neighbouring villages to clarify village boundaries. ▪ Election of VLFMC[74]: confirm if a committee is active or needs to be re-elected/newly-elected. VLFMC memberships must consider: gender balanced, ethnic groups, age groups and social status. Elected members are responsible for forest and land use management within village boundaries. VLFMC works in cooperation with PLUP, PSAP and VFMP teams on all aspects of planning, implementation, and monitoring and evaluation. The committee is directly responsible for "*jap jong din*"[75]. ▪ Village Base Map: Map depicting village boundaries and geographical features of the region (residential areas, sub-villages and hamlets, rivers, mountain ranges, dams, irrigation systems, others). It should be a participatory process with an encouraged presence of Elders and women. ▪ Village Boundary Delineation and Agreements: The village boundary is the administrative line that defines the village management area and it results in boundaries between villages that are fully connected geographically. If there are any boundary uncertainties or conflicts, the PLUP team should coordinate with VLFMC members to solve them along with the presence of the responsible person of the district home affairs. For disputed areas, joint surveys should be carried out with representatives of the villages with uncertain boundaries. A written and signed boundary agreement should be produced at the end of the surveying process. PLUP members will act as facilitators and if boundary conflicts cannot be resolved, the PLUP team mark the results of the GPS-based field survey on a map, showing the conflict area. For unresolved boundary conflicts a meeting at district level -chaired by the district Governor, will be arranged with all VLFMC members of the involved villages.

[73] All GIS and mapping activities will be conducted as much as possible at provincial level.
[74] Village Land and Forest Management Committee (VLFMC)
[75] Jap jong din: control and supervision of land claiming and land allocation.

	3. Socio-economic, land and forest data collection	▪ Data collection of socio-economic, land and forest data. Through this process it is important to distinguish between data that will be used for future land use zoning during PLUP and data that will be used for PSAP and VFMP. ▪ All data collection is done through group interviews - not at household level, and the groups should be separated by gender, although both groups will be presented with the same interviews. ▪ The following topics will be covered in the interviews: problem census, population growth, upland rotational land use (shifting cultivation), permanent agriculture, large livestock, forest use, and NFTP and wildlife.
	4. Current land use and forest cover mapping (CLUFC)	▪ PLUP team will make use of the stage 2 products (e.g., base map and village boundary delineation) and -either- satellite image or aerial photo map to produce a map of the current use of forest and agricultural areas of the village. ▪ CLUFC will document current land use rights and tenure status of land use zones. It will also record recent changes in upland fields, expansion paddy fields or other annual cropping, and new houses or buildings. PLUP team should not interfere or change any area or areas identified by the participants. ▪ The final map will be presented to the villagers in a plenary village meeting, along with FLUMZ map and draft village regulations.
	5. Future land use management zones (FLUMZ)	▪ PLUP team and VLFMC will develop scenarios, options and opportunities to let villagers decide what best suit their needs and priorities in terms of future land use management zones. ▪ New satellite or aerial photo maps will be compared with the CLUFC to identify relevant areas and features. ▪ To generate the new land use mapping, a standardized set of 49 categories and over 200 subcategories have been developed by FALUPAM. These 49 categories aggregate up into the standardized 9 land types used by state planners. ▪ The following key elements that have priority to enter the transition from present land use to future land use zoning are current use, traditions/customs, villagers' wishes/priorities, topography and water supply, natural and socio-economic potentials, and tenure rights. ▪ The next elements/zones to be mapped/marked on the FLUMZ are: settlement areas and their possible expansion zone (it can be copied from the CLUFC), fixed agriculture zones (annual and permanent agriculture), upland agriculture use zones, forest zones, and livestock grazing zones. ▪ Other elements to be considered in FLUMZ mapping are: i) aspects of planning at landscape level: when there are land use zones that have transboundary functions, then the following elements should be considered: watershed protection, creation of corridors between existing forest patches, aggregation of agricultural plots, and creation of transportation corridors to access markets; and, ii) land tenure.
	6. Village regulations	▪ Village regulations provide rules and regulations on how the FLUMZ zones can be used or managed. These regulations are village specific to respect and

		fit traditional customs and social practices. Village regulations must be in line with national laws and policies. ▪ The exact allowed and restricted uses for each zone must be written in a document, which it will be the basis for the VLFMC to monitor the use of the zones, enforce regulations and to manage the village territory. The document will state possible rules for use and regulation of: waterbodies, NTFP collection and hunting, domestic livestock, any other village rules, and what happened with collected fines.
7.	Final meetings, documentation, approval and data storage	▪ Final Village Meeting for Approval: VLFMC will present the Village Boundary Agreements, CLUFC map, FLUMZ map, and the draft of Village Regulations. ▪ PLUP team, VLFMC and villagers will review, improve/adjust and agree on all the conditions for each land use zone described in the FLUMZ map and Village Regulations. ▪ PLUP 2.0 Report: PLUP team must work on the report to avoid losing data or documents. The CLUFC and FLUMZ maps must be digitized and finalized by PAFO's GIS team or PoNRE at provincial level. ▪ Quality Control of PLUP 2.0 Results: It will be carried out by PLUP supervisors at provincial level and CliPAD/I-GFLL. ▪ Approval of PLUP Documents: All PLUP documents will remain as provisional until PSAP and VFMP have been completed in the village. This must occur within 6 months from the PLUP 2.0 work. CLUFC and FLUMZ maps and PLUP 2.0 report are submitted to the District Authorities for official approval. After final approval, VLFMC will receive printed and laminated copies of the maps and village regulations. A metal signboard, showing FLUMZ results, will be erected at the village entrance or in front of the community hall. ▪ Data Storage: PLUP 2.0 data and maps need to be securely stored as soft and hard copies at district and provincial level. The standard folder structure is described in the 2010 PLUP Manual or the FALUPAM manual. A set of copies need to be shared with DAFO and PAFO for permanent digital storage. All land use plans established under CliPAD/I-GFLL must be integrated into the national Land Use Information System (LUIS) at NREIC.
8.	Link to subsequent activities of PSAP and VFMP	▪ In CliPAD/I-GFLL, the data and maps from PLUP 2.0 will be used for PSAP and VFMP. The specialized agriculture and forestry teams from PSAP and VFMP will use the data and maps as baseline information for further socio-economic and agriculture data collection at household level, soil analysis and GPS field surveys/demarcation of zone boundaries. ▪ PSAP and VFMP will produce annual activity plans for agricultural development and forest management. In the long term, these efforts will be needed to form the basis for land registration activities and land titling/tenure rights.
9.	Monitoring and evaluation	▪ Monitoring and evaluation of approved land use plans (see Sub-Activity 1.2.2.3 below)

Source: Summarized from PLUP 2.0 guidelines (2020), developed under Project 1

Baseline	Land use planning has a long tradition in Lao PDR, dating back to the 1990s. Several different approaches and methodologies have been applied over time with varying objectives and results. Overall, many land use planning exercises have remained one-time exercises without any monitoring, follow-up activities or local development effects. Under Project 1, the following advances have been made related to PLUP: - New guidelines for a revised PLUP 2.0 approach have been finalized on the basis of a thorough review of all land use planning methodologies applied in Lao PDR over the past 20 years including evaluations and assessments. The new guidelines strengthen the participatory, gender-sensitive planning process and mainstream the guiding principles of FLR and watershed protection requirements. - Based on the new guidelines PLUP 2.0 Training of Trainers (ToT) has been conducted in 3 provinces. - Trained District staff (DAFO and DoNRE) started the PLUP 2.0 work in 45 villages in all 3 target provinces. - PLUPs have been elaborated in 70 target villages in Houaphan. - PLUP 2.0 activities will be conducted in an additional 125 target villages across 15 districts in Houaphan, Sayabouri and Luang Prabang provinces. For villages in Project 2, many villages do not have land use plans. In those where there are land use maps, they may be old and/ or support may not have been provided to facilitate their implementation. Thus, the project will support them to develop land use plans that are linked with implementation support under components 2 and 3, and which are compliant with LUIS requirements and best practices.
Deliverables	▪ District PLUP teams trained on PLUP 2.0 and climate change adaptation supplement in all six provinces ▪ Land use plans developed and under implementation in 240 target villages in Luang Namtha, Bokeo and Oudomxay, and 50 villages in Houaphan, Sayabouri and Luang Prabang provinces.
Justification	Land use planning is a critical approach in Lao PDR to improve climate-resilient, low-emission and deforestation free planning and integrated sustainable land management (as outlined in the NDC, as well as other government strategies and plans – see Chapter 4.3). As mentioned under Sub-Activity 1.2.2.1 above, the PLUP approach within Project 1 has been developed considering the lessons learned and best practices from various initiatives in Lao PDR over the past 20 years (see PLUP 2.0 Guideline Table 1 in Annex 2h for a comparison of land use planning methods and lessons learned). It has a stronger focus on integrated land use planning, and includes measures to address prior barriers related to budget, capacities, implementation and monitoring. The strengthened focus on adaptation within Project 2 will further strengthen PLUP, while also ensuring the approach does not over-burden villagers nor PLUP teams at the provincial and district level. Experience from Project 1 shows that this approach is effective and should continue to be applied. Adjustments under activity 1.2.2.1 will be included,

	however the overall stages (including clear FPIC process) will be maintained.
Institutions involved	The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. Other institutions involved include: ▪ District PLUP Teams will be trained by provincial level core trainers and GIZ experts in all 6 provinces on the PLUP 2.0 process and climate change adaptation supplement. ▪ The team of provincial supervisors will report directly on PLUP activity progress to the PPMU and NPMU, will be directly responsible for an initial quality control of PLUP reports and will coordinate all monitoring activities. Additional quality control will be conducted by GIZ experts. ▪ Dedicated and fixed PLUP Teams will be set up in every target district, composed of trained DAFO and DoNRE technicians.
Sub-Activity 1.2.2.3: Monitoring and enforcement of land use plans	
Description	Once land use plans are established (under Sub-Activity 1.2.2.2) and under implementation, they need to be monitored and enforced to ensure compliance with planned land use. However, in practice the lack of capacities, equipment and budget often limit monitoring and enforcement, which can then lead to unplanned / unapproved clearing of forested areas. This sub-activity will support ongoing monitoring (forest-related enforcement linked with Activity 1.2.1), supported by technical assistance, capacity building and equipment procurement, closely aligned with the implementation of activities under components 2 and 3. Some monitoring opportunities are already offered by the PSAP and VFMP activities, as during the processes designated agricultural and forest areas are submitted to additional scrutiny during the PSAP planning of agricultural interventions and village forest action planning. The monitoring of land use plans will be based on the following three actions:[76] 1. **Quality control of PLUP process (during the first year of PLUP implementation):** This quality control is done at two levels, first by the trained provincial PLUP supervisors and secondly by the GIZ. Draft PLUP documents, like the CLUFC and FLUMZ maps and the PLUP report are submitted to them to check whether these are complete, of acceptable quality and have covered all steps and standards mentioned in PLUP 2.0 guidelines. This quality control exercise should also include an assessment of the overall participation of villagers (men and women) in the PLUP 2.0 process. 2. **Joint FPIC 2 Sessions (1 year after PLUP 2.0 start):** Approximately one year after the start of PLUP 2.0 in every village, Lao National Front and LWU staff will jointly conduct a FPIC 2 session in the village. While the objective of doing FPIC 2 is mainly related to checking the acceptance of VFMP activities, some questions asked will also refer to PLUP 2.0 activities. Through FPIC 2, neutral outsiders (LNF and LWU)

[76] For more detailed information on the process, refer to the PLUP 2.0 Guidelines (November 2020), Stage 9, pages 36 and 37.

	will get a first-hand impression on whether the PLUP 2.0 and the VFMP activities supported by the project have been accepted or appreciated by the villagers. It is really a satisfaction survey. This also provides feedback on the performance of the PLUP team in their field activities. 3. **Full monitoring and evaluation missions (starting 2 years after the initial PLUP 2.0 exercise and repeated on an annual basis):** The District PLUP Team should conduct a full monitoring and evaluation mission to the village and then step by step to all villages in the village cluster. During this monitoring and evaluation exercise, which will then be repeated every year, the first objective is to assess together with the villagers and VLFMC the overall compliance with the PLUP results. The impact of the various PLUP activities on the land and forest resources management will be evaluated, including attention to deforestation and climate change resilience, among other factors. Ideally, the PLUP Team members will have access to new satellite images again (e.g. Sentinel satellite images, which are free of charge), in order to compare the original situation compared to the current situation. Monitoring and evaluation visits by the PLUP Team must be conducted in every target village not only in selected sample villages. Separate funds will be made available under the project for such monitoring and evaluation visits. After the field work of 2-3 days, the PLUP team will prepare and submit a Village PLUP 2.0 Monitoring Report (see template in **PLUP 2.0 Guideline Annex 13**). In their report, the PLUP Team must also specify whether they classify the overall compliance with PLUP 2.0 as very high, high, mixed or poor, depending on the evaluation based on the satellite images or during field surveys and an assessment of contraventions against the village regulations. A protocol to determine the level of compliance is also presented in **the PLUP guideline**. Monitoring and evaluation visits provide the first real opportunity to revise the FLUMZ map and the village regulations. If adjustments are required, the PLUP Team will hold working sessions with the VLFMC and the entire villagers (similar to Stages 5 and 6 within the PLUP). The revised documents will be submitted for approval, following the same procedures as described under sub-activity 1.2.2.2.
Baseline	▪ At the time of project preparation, 70 villages had LUPs developed under Project 1, and an additional 152 are planned. Trainers have been trained on monitoring practices in 3 provinces (Sayabouri, Luang Prabang and Houaphan). The PLUP 2.0 guideline notes the monitoring of PLUP 2.0 results needs to be conducted at least after two years and thereafter every year with sufficient budget set aside for these activities. Given many LUPs have only recently been developed, land use plan monitoring efforts are just commencing under Project 1. As lessons learned become more apparent, these lessons should be shared with Project 2 and integrated into training modules and training of trainer curriculum. Where possible, harmonized approaches should be developed through regular exchange and knowledge sharing between the districts and provinces. ▪ There are limited experiences in developing, monitoring, and enforcing land use plans using the PLUP approach in the newly added provinces and districts under Project 2. Training is needed for trainers in Bokeo, Oudomxay and Luang Namtha.
Deliverables	▪ Evidence of quality control processes feeding into approvals (During the first year and PLUP review and approval process)

	▪ FPIC 2.0 reports/ documentation (1 year after the PLUP 2.0 started) ▪ PLUP Monitoring reports (Starting 2 years after the initial PLUP 2.0 exercise, and repeating on an annual basis)
Justification	Regular monitoring of PLUP results has been the exception in the past. Through the analysis of past land use planning processes, GIZ found only the FALUPAM approach under the TABI Project has systematically conducted monitoring missions after 1.5 to 2 years. Attention has been paid in the design of this sub-activity to ensure sufficient budget, capacities and tools are in place to support monitoring, replicating the approach developed under Project 1. The PLUP 2.0 guidelines developed under Project 1 developed a phased approach to monitoring, with different actions throughout the PLUP process (during the planning and approval process, 1 year after planning, and 2 years + after the process). These guidelines have been developed based on best practices, and provide clear guidance to institutionalise monitoring activities. They will further facilitate improved knowledge management and learning, including the identification of best practices, lessons learned that can continually improve land use planning processes. This is particularly relevant for the implementation of Project 2, where lessons learned from monitoring under Project 1 will be considered and communicated via the NPMU and PPMU to District PLUP teams.
Institutions involved	The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. With regard to the specific actions outlined above: ▪ GIZ and trained Provincial PLUP Supervisors will ensure quality control ▪ Lao National Front and Lao Women's Union staff will conduct the FPIC 2.0 process, and will provide feedback to GIZ and trained Provincial PLUP supervisors on the district PLUP team and process, in addition to other feedback from villagers. ▪ District PLUP Teams will conduct the monitoring and evaluation visits

Activity 1.2.3: Knowledge management, adaptation impact reporting, FPIC, safeguards and gender

Activity 1.2.3: Knowledge management, FPIC, safeguards and gender	
Contribution to project output	This activity will facilitate comprehensive communication and exchange of information about topics of relevance for land users, policy-makers and the broader public to understand the purpose and benefits of REDD+, climate risks and best practices for climate risk reduction in the agriculture and forestry sectors, and the need for behavioural change of business-as-usual land use. This activity will further ensure compliance with FPIC and safeguards through supporting the implementation of the of the Environmental and Social Management Plan (ESMP, Annex 6b) and Gender Action Plan (GAP, Annex 8b). In addition, the project will support the Lao NDA in NDC implementation monitoring and reporting with a special focus on the AFOLU sector in terms of both mitigation and adaptation.

	Implementation shows the current approach under Project 1 effective and well-tailored to the local context in the project area. As such, Project 2 will follow the same approach as Project 1, and no substantial changes are envisaged. The following sub-activities are included in Project 2: ▪ Sub-activity 1.2.3.1: Knowledge management and communication ▪ Sub-activity 1.2.3.2: Implementation of the Environmental and Social Management Plan (ESMP) and Gender Action Plan (GAP), and ensuring compliance with FPIC and safeguards.
Budget/ Co-finance	**Total Activity Cost: 1,245,483 EUR** ▪ GCF finance: 1,165,403 EUR ▪ Co-finance: 80,080 EUR
Sub-Activity 1.2.3.1: Knowledge management and communication	
Description	○ Lessons learned and information sharing will be conducted at the political level to inform national stakeholders and policy-makers on Project 2 progress and the key lessons learned that can support the implementation of national REDD+. ○ The implementation of 3 campaigns – on awareness-raising of laws and the regulatory framework pertaining to the forestry and agricultural sectors (closely linked to the strengthened regulatory framework supported under Project 1), on establishing REDD+ awareness in local media (local newspapers in all target districts in the 3 additional provinces included under Project 2),[77] and on forestry and land use awareness in schools. ○ Communication and collaboration with national universities on key lessons and relevant education materials, and to support the universities in developing/acquiring research projects related to REDD+, climate-resilient agriculture, and sustainable land management. ○ Development and management of a project website.
Baseline	As mentioned above, the implementation of this activity under Project 1 found the proposed approach is effective. The following are some of the current achievements and planned sub-activities under Project 1: - Inception workshops with all stakeholders - policy makers, government staff, civil society, cooperation and development partners - organized at national level as well in the 3 target provinces (Houaphan, Luang Prabang and SayabourI). - Project steering and management structures at national level as well as in the 3 provinces and 15 districts established. - FPIC 1 has been completed in all 170 new target villages of Project 1 - A Safeguard monitoring team has been established and a Grievance and Redress Mechanism developed and introduced to all target villages.

[77] i.e. Bokeo, Luang Namtha, and Oudomxay

	- A planning, reporting and M&E system is in place. A cloud-based data bank has been developed, which allows real-time reporting and monitoring of all project activities. - Annual and quarterly plans are being developed and implemented, based on the project plan of operation - Project website developed, maintained and regularly updated - Lessons learned and information sharing ongoing. Annex 2c to the FP outlines the main advances and lessons learned from Project 1 at the time of Project 2 development. In the three additional provinces under Project 2 (Bokeo, Oudomxay and Luang Namtha), the same processes conducted under Project 1 are needed to establish the necessary structures and cooperation for project management, knowledge management, and stakeholder engagement and communication.
Deliverables	• Establishment of project steering and management structures in the additional 3 provinces and 12 districts covered under Project 2. • Continued operation of project steering and management structures in the original 3 provinces (from Project 1). • Continuation of knowledge management and dissemination. • Support the Lao NDA in NDC implementation monitoring and reporting.
Justification	This activity is required to support overall project management, as well as the implementation of the project's knowledge management plan and stakeholder engagement plan. Knowledge management and stakeholder engagement are at the core of the project's approach, and will contribute to the overall paradigm shift by raising awareness, building capacities, facilitating ongoing learning and improvements, and setting a strong foundation to facilitate upscaling and replication.
Institutions involved	The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual The Action will be managed and coordinated by the NPMU and PPMUs. PPMUs will be responsible for coordinating with the province- and district-level partners. Communication and awareness-raising actions will be closely aligned with the remaining project implementation activities and, wherever possible, integrated into implementation.
Sub-Activity 1.2.3.2:	
Description	Sub-activity 1.2.3.2: Implementation of the Environmental and Social Management Plan (ESMP) and Gender Action Plan (GAP), and ensuring compliance with FPIC and safeguards. The ESMP is provided in Annex 6b; the gender assessment is provided in Annex 8a; the GAP is provided in Annex 8b.
Baseline	The approach under Project 1 has been effective, and will be continued under Project 2. The following are the main advancements under Project 1 (note Project 1 focused on Luang Prabang, Houaphan, and Sayabouri): - **FPIC 1** has been completed in all new 170 villages plus the 70 previous CliPAD villages, out of which 1 village rejected being included in the

	project. **FPIC 2 and 3** trainings for the provincial FPIC team have been completed. Implementation of FPIC 2 and 3 for 169 villages was delayed due to COVID 19, and related restrictions. - The **Grievance Redress Mechanism** has been fully conceptualized, all respective tools (handbook, training materials, posters) finalized and approval from the Lao Front for National Development (LFND) obtained. Relevant stakeholders are being trained on applying the system in practice. The Project Owners will soon inform the beneficiaries about the mechanisms to file a grievance, and display the durable "GRM" posters in all I-GFLL target villages. - A consulting team was hired to **ensure that environmental and social safeguards** are enforced, and **gender is mainstreamed.** - The main ESMP topics have been included into trainings for Project Owners; all major guidelines have been reviewed and it has been ensured that gender is fundamentally embedded into the approaches of all village level activities through specific processes and quotas. Project Owners are advised to include as many women as possible into their implementation teams. Women are included in all respective committees and women's participation is promoted in all village meetings. The respective numbers of women vs. men participants/members are included into the monitoring system and regularly analysed. (for example, for FPIC1, 54% of the 15000 participants in the consultations were women). That said, for Project 2 efforts have been made to make the ESMP more user-friendly and to take into account the now established systems and approaches by Project 1, many of which are expected to be also reflected in Project 2. These changes include both, changes in the so-called "Actions" of the ESMP, which guide the implementation of the ESMP by the Safeguards team, but also other details of the ESMP text and a clearer 'logic' of the safeguards system, aiming to avoid certain issues to happen in the first place, then monitoring their occurrence and mitigating any found problems. - In addition, the **Lao Women's Union and/or the Lao Front for the National Development** are part of the implementing teams in most of the main implementation approaches of the project (FPIC, PLUP, VFM, PSAP). As Project 2 works in 3 additional provinces, training and awareness raising on safeguard processes and mechanisms (including the GRM) are needed, as described in the ESMP.
Deliverables	▪ Conduct FPIC in the additional 290 target villages covered by Project 2 (including villages described under Activity 1.3 in all six provinces) ▪ Introduction of the Safeguards monitoring and GRM to all new target villages ▪ Implementation of the ESMP and GAP for Project 2.
Justification	This sub-activity ensures compliance with FPIC and safeguards through supporting the implementation of the of the Environmental and Social Management Plan (ESMP, FP Annex 6b), Ethnic Group Development Plan (EGDP FP Annex 6d), and Gender Action Plan (FP Annex 8b). These documents have been developed based on detailed analyses (see the

	ESIA in FP Annex 6a, and the Gender Assessment in Annex 8a), and are in compliance with GCF's Indigenous Peoples Policy, Gender Policy and Environmental and Social Policy.
Institutions involved	The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. The NPMUs' safeguards and gender personnel will be responsible for the implementation of the ESMP and the gender action plan, and will ensure that programme implementation integrates gender actions and social and environmental safeguards.

Component 2 – Market solutions for agricultural drivers of deforestation: Implementation of sustainable and deforestation-free agricultural practices

Output 2.1 Villagers are trained by capacitated government staff and enabled to produce sustainable, climate-resilient and deforestation-free agricultural and agroforestry products, strengthening their access to sustainability-oriented markets

Activity 2.1.1: Promotion of sustainable, climate resilient and deforestation-free agricultural practices (PSAP) and technologies

Activity 2.1.1: Promotion of sustainable, climate resilient and deforestation-free agricultural practices and technologies	
Contribution to project output	To achieve the desired paradigm shift in the forest and land-use sector of Lao PDR, fundamental changes in the perception of agricultural landscapes by stakeholders and related priority-setting needs to take place. The establishment of practices that are specifically suited to the local environmental conditions and include the careful and thoughtful management of natural resources to strengthen climate resilience and climate change mitigation, is in all its implications a difficult concept to many Lao communities and local government officials, given that they have only gained traction over the last decade. With a focus on prioritizing potential economic gains, concepts of sustainability and climate change adaptation and mitigation are often vague and even if the theory is clear, how practical implementation could be achieved is often unclear. Strengthening understanding of key concepts behind deforestation-free and climate-resilient sustainable agricultural practices and related value chains, and presenting options that can support the approach is thus the foundation for a long-term commitment to the ideas behind the ERP. The technical approach for this Activity, referred to as the Promotion of Sustainable and Deforestation-free agricultural Practices and Value Chains (PSAP) approach, has been tested and refined in Project 1 (FP117), which supported similar interventions in Houaphan, Sayabouri and Luang Prabang provinces. In contrast to the original proposal of Project 1, the good agricultural practices approach was complemented by a specific definition of deforestation-free agricultural practices directly supported by the project, and the target beneficiaries were better defined (mostly swidden upland farmers), in order to have the desired impact. Adjusting the approach to a more specific promotion of sustainable agricultural practices (PSAP) by using a White List (see Annex 2g), which defines suitable deforestation-free models, was developed and rolled out in Project 1, and will be replicated under Project 2. While the

approach is nearly identical, some adjustments have been made based on the lessons learned from Project 1 and recommendations from the Project 2 Feasibility Study team, namely: strengthening climate change adaptation within the approach (building on improved climate-informed planning under Activity 1.2.2), hiring a dedicated international agricultural expert to support implementation, and strengthening the extension support that is provided to farmers for the adoption of whitelisted production practices and technologies. Project 2 will continue to put an emphasis on women and vulnerable groups and promotes the participation of female-headed households in the development of deforestation-free practices and value chains. In community meetings related to PSAP under Project 1, on average 47% of the participants have been female.

This activity is built on the efforts undertaken in Project 1, scaling up PSAP to 12 districts in three new provinces (Bokeo, Luang Namtha, and Oudomxay) with a total of 240 selected target villages and expanding the programme reach to 50 additional villages in Project 1 provinces (Houaphan, Sayabouri and Luang Prabang). Activity 2.1.1 builds on the participatory land-use planning (PLUP) undertaken as part of activity 1.2.2. It is also closely linked to activity 2.1.2. The funding for the implementation of the PSAP investment plans developed and implemented under this activity will be channelled through the VFAGs established under activity 2.1.2 (see Figure 29).

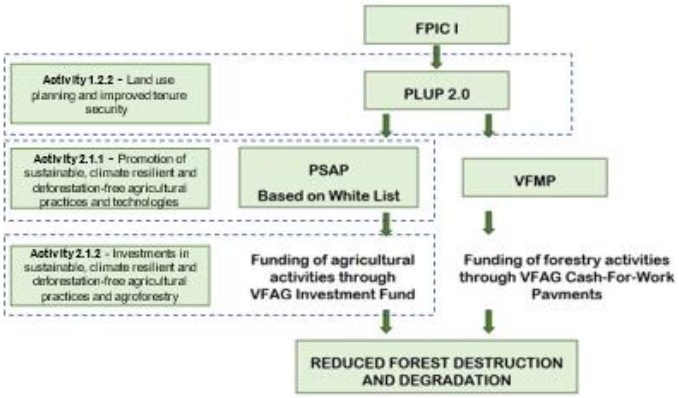


Figure 29. Overall workflow in target villages

Source: adapted from Guidelines on the Promotion of Sustainable and Deforestation-free Agricultural Practices and Value Chains (PSAP).

The following sub-activities are included in Project 2:

- Sub-Activity 2.1.1.1 Capacity building and knowledge management for sustainable, climate resilient and deforestation-free agricultural practices and technologies
- Sub-Activity 2.1.1.2 Scaling of PSAP planning approach to 290 villages
- Sub-Activity 2.1.1.3 Implementation of PSAP Agricultural Activity and Investment Plan

Budget/ Co-finance	**Total Activity Cost: 8,216,077 EUR** ▪ GCF finance: 4,493,299 EUR ▪ Co-finance: 3,722,778 EUR

Sub-Activity 2.1.1.1: Capacity building and knowledge management for sustainable, climate

resilient and deforestation-free agricultural practices and technologies	
Description	Under this sub-activity adaptation considerations will be integrated into PSAP training materials through the development of supplements on climate change adaptation. This will also be used for providing guidance and refresher trainings to PSAP teams under Project 1 that will be undertaking the PSAP process in 50 additional villages in Houaphan, Sayabouri and Luang Prabang under Project 2. PSAP activities are based on key concepts and documents, most of which have been developed or refined in Project 1. These include the PSAP guidelines, VFAG guideline, White List for Sustainable Agriculture, Monitoring, Reporting and Verification (MRV) for performance-based payments - Standard Operating Procedures, etc. While some of these documents are well tested and refined already, others have been developed more recently and may still require adjustments to local realities of Oudomxay, Bokeo, Luangnamtha and to the 50 additional villages of the Project 1 provinces. As such, periodic revisions, based on consultations with DPMU and the PPMU team will take place to optimize processes and approaches. Further, the sub-activity will focus on providing PAFO and DAFO staff in the 3 new Project 2 provinces (Bokeo, Luang Namtha, and Oudomxay) with training on sustainable, climate-resilient and deforestation-free agriculture to facilitate the implementation of the PSAP planning (activity 2.1.1.2) and implementation process (2.1.1.3) while ensuring implemented practices are among the most suitable for the given climatic and environmental conditions, and household priorities (building the resilience of local livelihoods and agro-ecosystems). The White List should get special attention in this context. It will be carefully assessed with respect to possible linkages to companies eligible for matching grants or value chain support (activity 2.2.1), which must be built upon principles of production support and a commodity specific business relationship. As such, this activity will be in a feedback loop with the extension tasks described under 2.1.1.3. To build the required capacity for the implementation of project activities, the PAFO supervisors and technical specialist team as well as the PPMU are initially trained in a training of trainers (ToT) on PSAP/White List, climate change issues, adaptation needs and opportunities, and extension approaches, including training on gender-sensitive extension. Training materials will be reviewed by the gender and safeguards specialist before implementation. The training will be provided by GIZ agricultural experts and external consultants. From each PAFO 4-5 trainers will receive capacity building together in one location for the 3 provinces. The PAFO teams will then provide, separately for each province, a similar training with the support and under the guidance of the GIZ Agriculture Team to the 12 DAFO PSAP teams, which are to be formed in the new provinces of Project 2. A training series will be used to further local government officials' understanding of climate change, related risks, and risk reduction options, such as suitable cultivation methods which reduce risks of erosion, or impacts of flooding, drought, or pest and disease outbreaks. This capacity building will be founded on the PSAP principles and promote and explain the project's White List. It will extend into technical assistance training, providing especially DAFO staff with the knowledge and tools they need to effectively help farmers overcome barriers to transition towards more sustainable, deforestation-free and climate change resilient agriculture. Per district, 4 DAFO staff will be trained on the following topics to become members of the new PSAP Teams:

Table 15: Overview of capacity building measures for PSAP teams

Topics	Recipient	Provider
Technical training on the crops and cropping systems to be promoted under PSAP. The training will present the practices included in the White List and introduce the PSAP technical extension sheets. It will include a special session on climate change adaptation and risks, the principles behind them and how the White List options address them. The training will also make use of additional technical extension documents available through MAF or other donor-funded projects. Furthermore, it will address land suitability assessments for various crops and practices.	DAFO staff in target provinces	NPMU and PPMU expert team
Extension and facilitation skills of PSAP team members will be honed with a specific focus on the promotion of sustainable and climate-resilient agricultural practices for farming communities. Visualization techniques, moderation of group discussions, ranking exercises, interview and communication techniques will be practiced in a workshop setting.	DAFO staff in target provinces	NPMU and PPMU expert team

The training courses for district PSAP teams will be conducted by trained PAFO experts, supported by GIZ experts together with specialised national consultants. In each province two selected PAFO staff will be responsible for coordinating and supervising PSAP activities across all target districts. Apart from being co-trainers in the initial training for PSAP teams, they will assist the PSAP teams with work planning, conduct regular coaching of PSAP teams in the field and will support the teams with documentation such as the drafting of agricultural activity and PSAP investment plans in each village. The average introductory training for district staff will take 4-5 days, plus guided hands-on experiences in the target villages.

Where possible DAFO staff from Project 1 districts, who have performed well will be included as trainers in the training of new district PSAP teams, to provide incentives for good performance and commitment, and create new linkages between different DAFO offices across provinces that may lead to further exchange and soft support (e.g. exchange of good practices, experiences, and project documents, among others).

Baseline

Project 1 provinces

- PSAP guidelines, VFAG guideline, White List for Sustainable Agriculture, Monitoring, Reporting and Verification (MRV) for performance-based payments - Standard Operating Procedures developed
- Technical Extension Sheets for the 31 models exist
- PSAP and technical training on the 31 models have been provided for trainers at provincial level.
- 15 PSAP teams at district level in Houaphan, Sayabouri and Luang Prabang provinces have been trained.

Project 2 provinces

- DAFO staff and farmers in new target areas have limited and scattered knowledge on climate-resilient practices and options for deforestation-free

	agriculture. ▪ No project related training programmes have been implemented in the new target areas in Bokeo, Luang Namtha, and Oudomxay ▪ While many of the White List approaches are at least partly known to farmers, they are currently not perceived as especially sustainable or linked to deforestation prevention. ▪ The White List is currently comprised of 31 production systems. ▪ While initial data have been gathered, no comprehensive link between production system/commodity and local value chain opportunities has been specified.
Deliverables	The immediate impact of this sub-activity is to provide local GoL partners with the understanding and skills necessary to implement related project activities (2.1.1.2) adequately. On the medium and long term, the insights and approaches conveyed, are likely to affect perceptions and future actions and priorities of the involved stakeholders, and thus promoting sustainable land management approaches on a broader scale. The adjustment of operational documents (where desirable or needed) is expected to lead to smoother operations, better targeting, and a higher likelihood of meeting project targets. The White List takes a central role, as it is the basis for a link between the production component of PSAP and the market links sought under Output 2.2. Indicators: Indicators: ▪ Updated training materials that integrate climate adaptation and gender considerations ▪ A minimum of 48 DAFO and 12 PAFO staff trained in each of the above topics (4 DAFO staff per target district). ▪ Workplans for all districts have been developed by DAFO staff and approved by PAFO, national consultants, and/or the GIZ team. ▪ All DAFO teams are able to plan and carry out PSAP activities independently. ▪ The operational documents support a smooth and effective project implementation that leads to the desired outcomes. ▪ Good practice in implementation is shared across PSAP teams based on consultation meetings with DPMU and PPMU. These are used to identify implementation difficulties and potential improvements of project procedures.
Justification	Sub-activity 2.1.1.1 is a necessary precursor for the following groundwork with villages, enabling local partners to act as self-reliant project implementors. The approach has been tested and successfully used on Project 1 and all training materials and qualified personnel is ready for its implementation, allowing for a fast start after project initiation Additional support on the ground was recommended for the implementation of the agricultural activities, requiring an additional international agricultural

	expert (full time) to support the implementation of this measure. The current operational documents, especially the White List, have been developed in Project 1, but data on their suitability is still limited, given that the project is still in progress and has a high degree of complexity. Adjustments of procedures will focus on increasing their efficiency and effectiveness during implementation in the 240 villages in Oudomxay, Bokeo, Luang Namtha, and the 50 additional villages in Houaphan, Sayabouri and Luang Prabang, while many of the White List measures would be considered as climate-resilient practices, climate change adaptation was not explicitly considered when drafting the White List. Thus, additional materials will be developed to raise awareness on climate change adaptation and strengthen the capacities of government staff and local villagers on resilience building measures (building on efforts to strengthen climate change adaptation within the PLUP).
Institutions involved	The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. At the provincial and district level, PAFO and DAFO are responsible for implementation. A partnership agreement will be implemented at the provincial and district level, including PAFO and DAFO. An activity plan including a list of activities, expected results and budget will be developed, and supported by the PPMUs. At all levels, technical assistance will be provided by the NPMU and PPMU expert team, including (international and national) technical experts. The revision of training materials and integration of climate change adaptation considerations should be carried out by the NPMU or an associated expert team with support by GIZ and based on feedback from and discussion with primarily the DAFO PSAP teams, but also PAFO teams and the DPMUs/PPMUs.
Sub-Activity 2.1.1.2: Scaling of PSAP planning approach to 290 villages	
Description	After villages have been identified and have undertaken the PLUP 2.0 process (Activity 1.2.2), trained local staff teams (sub-activity 2.1.1.1), consisting of 4 DAFO staff, will start the PSAP implementation village by village. To ensure the quality of the process, the NPMU and PPMU expert teams (2 people per team) and 2 to 3 PAFO staff will assist the PSAP teams in their first 3 to 4 village assessments. Later on, the teams will conduct the work independently and implement the PSAP approach in the target based on green extension activities as defined in the White List. Under Project 2, this process will be conducted in 290 target villages, of which 240 villages will be from the 3 additional provinces under project 2 (Bokeo, Luang Prabang and Oudomxay), and 50 villages will be from Houaphan, Luang Prabang and Sayabouri.[78] As in Project 1, the approach aims specifically at replacing deforestation-prone practices, such as pioneering shifting cultivation[79] (which is less common now)

[78] These 50 villages from the Project 1 provinces are additional to those covered by Project 2.

[79] The terms *shifting cultivation*, *swidden*, and *rotational agriculture* are all used to refer to a *farming* system in which relatively short periods of cultivation are followed by relatively long periods of fallow. Where population density and agricultural/economic activity has not changed, such systems have often been stable for centuries. When changes occur,

	and rotational shifting cultivation, with more diversified and climate-resilient agricultural production on selected plots where customary land use rights are established. The primary impact pathway is to break the cycle of shortening regenerative fallows and resulting soil fertility degradation, leading to lower yields and ultimately the need to compensate for these by opening up new cultivation areas. To this end, a variety of perennial production systems are promoted that stabilize local agri-ecosystems and contribute to increased landscape resilience, while also leading to increased income generation for the participating families. The 50 additional villages in Project 1 provinces will be chosen strategically to strengthen the results achieved under Project 1. To this end, they will be selected based on an extended set of criteria that include, among others, value chain aspects and take into consideration the location of PSAP hotspots with the aim of: ▪ strengthening the connection or integration of PSAP zones, and strengthening the resilience of agro- and forest ecosystems; ▪ strengthening of PSAP specific value chains, supporting the formation of critical production mass that makes a location less likely to abandon PSAP activities, and increases the interest of specific traders to build long-term relationships with producers; ▪ significantly increasing the resilience of agri-based livelihoods and agro-ecosystems to climate change by improving the overall land management of a location (e.g., mountain ridge areas that belong to several villages, and in some instances supporting income diversification). Selection will be based on an initial situation analysis, also considering the climate-informed PLUPs developed under Activity 1.2.2, followed by careful assessment of the best options, including criteria such as proximity to existing project sites and integration potential into newly established or strengthened value chains (e.g., through addition to collection points, farmer associations, trader networks etc.). Based on the PSAP Guidelines developed under Project 1, farmers will be offered suitable choices from the White List) and will be supported in finding the option that best fits their circumstances. The PSAP team will conduct a village meeting in which all families have to be represented to again explain the whole approach, and present all the elements in the White List, the various models, and the selection criteria for families. On day two, villagers register their choices. Then the PSAP team splits up to collect basic household data that can be used to assess eligibility criteria. Subsequently, the plots that villagers want to assign to the activity will be visited to assess the suitability for the chosen activity (e.g. climatic conditions, slope, proximity to areas at risk of climate-related natural hazards, labour requirements etc.), and record the plot location. Once this has been carried out for all families, the PSAP team will present all the registered families to the gathered community and selects together with the VFAG committee (see activity 2.1.2) the 27-30 that closest meet the eligibility criteria defined in the PSAP Guidelines. The final result is the village PSAP plan (for a detailed description see below and Annex 2g to the FP).

however, expansion into thitherto uncultivated natural areas takes place (pioneering shifting cultivation), often in conjunction with shortened rotational cycles. In consequence, not only does this lead to increased deforestation, but the fertility of existing plots also diminishes over time, requiring further opening-up of new agricultural areas. This can lead to a destructive spiral of large-scale deforestation. From: Carl Folke, Johan Colding, (2001). Traditional Conservation Practices. (edt Simon Asher Levin). Encyclopedia of Biodiversity, Elsevier, Pages 681-694,

The offered production models follow a number of strategies, such as planting under existing forest cover, planting tree crops, mixed cropping or intercropping, permanent soil cover, contour strips, and variations or combinations of these. The common denominator is that the PSAP models can be classified as deforestation-free in the sense that no new tree felling is required and/or that forest resources are protected by shifting to permanent and less destructive production methods that prevent the pioneering expansion of agriculture onto forested land.

Once registered in the PSAP plan, the farmer will be entitled to VFAG grants (see activity 2.1.2 for detailed processes on the operation of the VFAG) as defined with them based on their activity (VFAG grants are covered under Sub-Activity 2.1.2.1). The participating farmers will also receive further technical support, such as training on their chosen agricultural option, information on inputs (e.g. planting material, organic fertilizer etc), including material costs, contacts for purchasing the goods, transportation modalities and costs etc.

Table 16: Stages and Working Steps of PSAP process

Stage	Brief description
Preparation	▪ PSAP teams prepares a work plan showing how field work will be undertaken in the selected villages ▪ Collecting important equipment, materials and tools (laptop, LCD Projector, digital camera, two GPS receivers, two measuring tapes of 100m, soil testing equipment, portable generator, three motorbikes and one car per province, printed copy of Whitelist in A3, complete set of PSAP technical sheets printed in advance) for the PSAP work. ▪ On-the-job support, coaching and supervision of PSAP technicians, provided by PAFO supervisors and supported by CliPAD/I-GFLL. ▪ Establishment of comprehensive private sector analysis (provincial and national level) for specific district. Identification and information gathering on private and state sector companies involved in marketing agricultural products. Conducted face-to-face, if not possible via phone (see Annex 2g to the funding proposal) ▪ Familiarization with basic situation of the village based on Form 1 and 2, the CLUFC and FLUMZ, village regulations and the village PLUP report. PSAP team informs VLFMC well in advance about arrival.
Village orientation meetings	▪ First village meeting (Introduction and overview of working steps of PSAP team) together with VLFMC and organization of the following five to six days working process. ▪ Explanation and demonstration of White List (desired sustainable production systems, specifically promoted crops, ranking of prioritization categories) with short description and photo on poster or projector and laptop. Description of observations from various best-case practises and discussion about open questions from the perspective of the villagers. ▪ Explanation of criteria for identification of suitable farmer families depending on criteria for identification (dependent on pioneering shifting cultivation or upland monocropping, only one agricultural activity meeting White List

		requirements, implemented in designated agricultural use zone according to FLUMZ map, no negative social/environmental side-effects, no use of chemical treatments). Priority is given to women-headed families, families under 30 years, poor families and category 1 activities are prioritized over higher categories. ▪ Explanation of VFAG – VFAG will be set up in each target village, which will be managed by a small committee with a deposition of EUR 10,800 (approx.. 140 million Kip) for the promotion of sustainable agricultural practises. A maximum amount of EUR 400 (approx.. 4,8 million Kip) can be allocated per family. Free labour and provision of locally available materials is expected in return. ▪ Preparation of Agricultural Activity and Investment Plan. If protection of forest zones according to Village Forest management Plan and Agreement achieved and agricultural practises do no longer contribute to deforestation, a "bonus payment" after two years is received (average of EUR 10,000 per village) for upscaling the PSAP. ▪ Identification of interested families. Repetition of White List and qualification criteria, clarification of funding mechanism to the specific families. Collection of further information, including field visits to the promoted land.
	Socio-economic, Agriculture and Livestock Data Collection for Registered Families	▪ Additional data collection based on PLUP 2.0 (Form 1, Form 2, PLUP Report) and FLUMZ map on socio-economic and agricultural aspects (present agricultural production, number/types/locations of land plots, labour availability and livestock) following two options: a. Representatives of interested families are called together. Data-collection done in front of all interested families and VLFMC. b. Representatives of families visited and interview from PSAP team members at home. ▪ Validation if PSAP fits the family situation. Untruthful provision of data can lead to exclusion of funding.
	Field survey and Soil Sampling	▪ Field visits of proposed plots with at least one family representative. Assessment if plot is located in designated agricultural use zone according to FLUMZ map. Measurement of exact plot size (GPS reading of corner points, measuring side lengths, noting data on plot sketch map) and verification of present crops, slopes, grazing and fencing situation. Soil sample collection for pH and basic soil fertility analysis. ▪ Additional interview round with family representative (history of plot, assessment of suitability of agricultural practise, discussion of necessary steps for implementation, photo documentation, revision of funding requirements) according to technical extension sheets. If plots are not suitable, the preferred activity or the plot can be adapted.
	Drafting of Village Agricultural Activity and Investment Plan	▪ Compilation of proposed PSAP activities based on White List and integration in Village Agricultural Activity and Investment Plan, which will be submitted to VFAG for decision making and funding. Development of District Activity Plan (DAP) for outlining activities, participants,

		inputs, and annual budget (See Annex 2g to the Funding Proposal).
	Final village meeting and documentation of PSAP results	▪ Organization of final village meeting by PSAP team and VFLMC. Demonstration of overall results, Village Agricultural Activity and Investment Plan and discussion of final comments using a laptop and projector. Submission of the plan to VFAG. ▪ Compilation of a short report by the PSAP team for target village together with filled registration form and final Village Agricultural Activity and Investment Plan. In a separate folder they keep the original copies of all data collection forms and all Field Survey Forms for each family.
	Adapted from: Guidelines on the Promotion of Sustainable and Deforestation-free Agricultural Practices and Value Chains (PSAP) (2021).	
Baseline	<u>Project 1 provinces</u> ▪ PSAP process implemented in 45 villages in Houaphan, Sayabouri and Luang Prabang ▪ First experiences show that upland farmers tend to select models they are more familiar with and focus on self-sufficiency more than on commercialisation of products <u>Project 2 provinces</u> ▪ While many of the practices drawn up in the White List can be found in the target areas, they are not a major component in farming systems, and in place for different reasons than those pursued by the project. ▪ Traditional agricultural practices of upland farmers are highly adaptive to climate variability which is naturally occurring in the Lao uplands. Strengthening this knowledge through additional diversification and reversing recent promotion of unsustainable mono-cropping is not a focus of local government agencies. ▪ Details about the connection between forest management and climate change adaptation, including water availability and distribution is limited among villagers and impacted by conflicting priorities or land-use conflicts. The knowledge pool of agricultural options is limited.	
Deliverables	An additional 17,400 hectares[80] of upland areas at risk of deforestation or forest	

[80] Project 2 will target approximately17,400 ha. This was calculated considering the following assumptions: the average landholding of upland dependent families is of 1.2 hectares. The project will be able to support PSAP implementation on an average of 50 upland dependent families per village in 290 villages through the VFAG initial payment and the bonus payment (this would come to a total of 14,500 families with approximately 17,400 hectares in total). The VFAG initial payment will be on average of EUR 10,800 and can reach at least 27 families with EUR 400 for PSAP implementation (under project 1 there have been 29-30 families accessing PSAP funding under VFAGs).It is assumed that villages will receive a bonus performance-based payment averaging EUR 10,000 and that 65% of that bonus payment will be channelled to PSAP activities and support an additional 20 upland dependent families. This assumes also that across the 3 new provinces there are 523 people/village on average living in a total of 922 rural villages. That corresponds to an average of circa 100 families per rural village (5.3 persons/family). Assuming the figures are similar in the 3 provinces of Project 1, and in the 290 target villages in total, this adds up to a total of 29,000 families overall. PSAP only addresses the upland farming families, which are estimated to be 60% of the total.
400 EUR/family. These funds would serve 50 beneficiaries. On average the average contribution is estimated to be only 300-350 EUR/family which would be sufficient for all 60 upland farmers/village.

	and soil degradation are converted to sustainable agricultural systems. Approximately 14,500 new households participate in PSAP activities and have been exposed to information on climate change and deforestation that may influence their future choices. Indicators: ▪ PSAP process implemented in 290 villages ▪ 174,00 hectares of upland areas at risk of deforestation are under White List approved production systems. ▪ 14,500 families have been provided with fundamental information on climate risks, adaptation strategies and watershed management, and implement PSAP activities. Farmers expanding or planning to expand their PSAP production systems.
Justification	The agricultural sector is one of the main drivers of deforestation in Lao PDR. Major barriers identified that contribute to deforestation include the lack of alternative livelihood opportunities, low productivity and yields, poor planning (and the resulting high environmental impact) and insufficient extension services and technical support. This sub-activity will set up the agricultural production systems that are critical to supporting the project goals of reducing deforestation and increasing resilience to climate change through, amongst others, watershed protection. This activity supports the establishment and promotion of forest-friendly agricultural systems, as well as a deeper understanding among stakeholders of why they are needed and how they will benefit villagers to cope with climate change in the medium and long-term.
Institutions involved	DAFO is the main implementer of all PSAP activities. PAFO and the PPMU teams will support DAFO teams during their work in the first villages. Subsequently they will conduct random checks and coaching to maintain adherence to project guidelines. At all levels, technical assistance will be provided by the NPMU and PPMU expert team, including (international and national) technical experts.
Sub-Activity 2.1.1.3 – Implementation of PSAP Agricultural Activity and Investment Plans	
Description	The implementation of the PSAP plans will ultimately depend on the farmers who have registered with the PSAP team. While DAFO will give support to farmers, mainly consisting in the provision of information (see Sub-Activity 2.1.1.2) and ongoing technical support (see below), they have ultimately little involvement in the physical implementation of the chosen activities. While the implementation and use of the disbursed VFAG funds (see Activity 2.1.2) is ultimately a matter of farmer commitment, compliance will be promoted through village peer pressure and incentivized through bonus performance-based payments (hereby referred to as 'bonus' payments) and a second funding cycle. However, regular follow-up visits, especially during the initial period after registration will be necessary to keep the momentum and support villagers with potential difficulties. It is also an important phase to strengthen linkages between project teams and villagers, building trust and creating a feeling of belonging to a common cause, for which every stakeholder commits to their role. Specific emphasis will be put one women-led households that joined

The average area to be planted with a White List model would be 1 ha, corresponding to 17.400 ha in total.

	PSAP agricultural extension activities as they form a particularly vulnerable group. During and after the establishment of new PSAP activities (based on PSAP Plan developed under 2.1.1.2), technical support and follow-up will be required especially by those farmers who try approaches new to them. The PSAP teams will take on the support of all farmers in their target villages (on average 20 per district). They will visit villages in regular intervals depending on activity (i.e. tree crops may require less frequent visits than annual crops), and will provide immediate support to farmers who report problems with their activities. To this end, DAFO will provide their telephone numbers to villages so that advice can be requested when needed. To ensure the satisfaction of villagers with the extension support, the VFAGs will be provided with a direct contact to the DPMU, allowing them to request further support if they feel that DAFO does not respond to their needs adequately. To be able to respond rapidly and efficiently to emerging problems, each PSAP team will receive more in-depth technical training on the commodities that farmers have chosen in their district, and best practices to ensure the promoted practices are based on best practices that strengthen the resilience of local communities and agro-ecosystems and generate additional socio-economic, environmental and gender benefits. The training will be provided by technical experts, requiring the hiring of external consultants for all commodities for which no detailed expertise exists within the project. Depending on feasibility, this capacity building will need to be designed as workshops combining all relevant PSAP teams or individual trainings for teams from districts in which rarely chosen options are being implemented. Trainings will, as far as possible, include practical demonstrations, or on-the-job training. Despite this training, difficulties or uncertainties are to be expected and DAFO will be supported through technical specialists to solve technical problems faced by participating farmers. This support will be provided by the DPMU and GIZ advisors who can be reached by PSAP team members by telephone or chat and provide immediate feedback. If a more detailed input is required, a PPMU specialist will either join the PSAP team on-site or an external specialist will be brought in to provide the needed advice. It is expected that the involvement of companies in extension activities will only be possible in a few cases, as most companies do not have in-house agricultural expertise. However, where companies offer such extension support, this opportunity will be assessed and where possible supported by the matching grant schemes (see activity 2.2.1). Furthermore, a crucial task of the DAFO teams will be to link farmers to markets. To this end, DAFO, supported by the DPMUs and PPMUs/PAFO will organize meetings between traders/exporters/processors of the commodities planted at the target villages to provide farmers with first-hand information on what volumes traders buy and would want to buy, what volumes they would require to buy directly from them, what quality criteria are applied and how the products will be further processed. This deeper understanding of the value chain will empower farmers to better see their role and envision potential opportunities for their village or as a village cluster. Where possible/sensible, farmers will receive training on pre-processing of their PSAP commodities (e.g. quality criteria for harvested products, sorting or grading, drying, cleaning, packaging etc, and marketing to the Agri-MSME). To organize supply chains, representatives from different close villages will be brought together to discuss possibilities of production clustering and organizing central product pick-up points, coordinate harvesting and shipping times and negotiating prices with larger downstream actors as a group. The overall aim

	of this would be to establish a long-term relationship between villages or village groups and large buyers/processors in order to create stable value chains and an expansion of the promoted agricultural systems. Villagers will be encouraged to sign fair marketing agreements which have been developed and approved by NPMU and PPMU, and for which drafts were developed under Project 1. This extension sub-activity comprises an essential part of the project, for all, the successful implementation of PSAP activities, their sustainability beyond the project duration, and a more proactive extension approach by DAFO.
Baseline	<u>Project 2 current situation</u> ▪ DAFO is generally not well prepared to support farmers. ▪ Farmers do not have access to knowledge tools to support their activities, in particular women are less likely to benefit from public extension services. ▪ Linkages between farmers and other value chain actors are limited. ▪ Farmer understanding of value chain is limited. ▪ Production collaboration between neighbouring villages is limited. ▪ First sample marketing agreements have been drafted by Project 1. ▪ Project 1 activities have not yet advanced beyond implementation of PSAP, meaning that no sound experiences in terms of extension activities for this programme exist. The interaction of PSAP teams with specialist from within the project though gives an indication of the technical support needs the DAFO team will require to successfully deliver extension services.
Deliverable	Continuous extension activities should be delivered from the moment of PSAP implementation to the end of the project and beyond. Indicators: • Investment plans under implementation in 290 villages • In-depth training on district-relevant commodities for all PSAP teams. • Study tours for selected farmers to relevant downstream value chain actors for PSAP commodities produced in the villages. • Supporting exchange between neighbouring villages on options for value chain organization. • Supporting the creation of long-term relationships between villages and downstream actors with the aim of creating stable value chains. • VFAGs interaction with the DPMUs can be taken as a measure of farmer satisfaction with DAFO extension provision and corrective measure should be taken if an increasing number of problems are reported.
Justification	A lesson learnt from Project 1 is that additional extension support is required to ensure the adequate implementation of PSAP practices and technologies and increasing the likelihood that adoption lasts over time. After establishment, the follow-up and support of farmers is essential to guarantee lasting project impact during and beyond the project lifetime.

	The extension component consists of many independently acting teams and a wide range of potential difficulties, from production related technical problems to market links and negotiations with the private sector.
Institutions involved	NPMU will organize and provide further in-depth training as described above to DAFOs, DPMUs and PPMUs. DAFOs will be the implementer of this activity including day to day planning and execution. They will get supported by and will have to report their activities to the PPMU and NPMU on a 6-monthly basis. Specialist advice from the PPMU or external consultants must be available to the DAFO PSAP teams at any time, both, through telecommunication and direct interaction.

Activity 2.1.2: Investments in sustainable, climate resilient and deforestation-free agricultural practices and agroforestry

Activity 2.1.2: *Investments in sustainable, climate resilient and deforestation-free agricultural practices and agroforestry*	
Contribution to project output	To fund selected activities from the White List and annual village forest management activities, a Village Forest and Agricultural Grant (VFAG) fund will be established in each target village. VFAGs are managed by a committee of 3 elected village representatives who get endorsed by the district governor – at least one member of the village committee must be female. A bank account is opened for each VFAG at the nearest commercial hub, following the VFAG Guidelines. The initial contribution will be on average of 10,800 EUR (27 x 400 EUR) per village and will be transferred through the Climate Change Funding Window to the account.[81] Transferred funds will be used among other things to provide grants of up to 400 EUR to PSAP registered families who have passed the eligibility criteria (e.g. dependency on shifting cultivation or upland monocropping, women-headed families, poor, young, etc., as specified in the PSAP Guidelines). The grants will not be handed to receivers directly but will be used to pay for approved items needed to establish and implement the chosen activity from the "White List" (Sub-activity 2.1.1.2). This funding scheme serves the purpose of supporting shifting cultivation and upland farmers in their land use transformation towards sustainable and resilient agricultural practices, with a specific focus on curbing pioneering and rotational shifting cultivation and improving soil fertility management. As the target group consists primarily of the rural poor, external funding mechanisms are required to aid in financing up-front investments for new activities. Using the VFAG approach, the project's investments in innovative, sustainable, and deforestation-free production systems are based on a grant support model which is able to absorb investment risks and low return rates, both characteristics to be expected in the project context. The VFAGs are the mechanism to channel funds for the implementation for the Agricultural Activity Investment Plans under activity 2.1.1 and Village Forest Management Plans under activity 3.1.1 (see Figure 30).

[81] The exact allocation of funds will be determined based on village size.

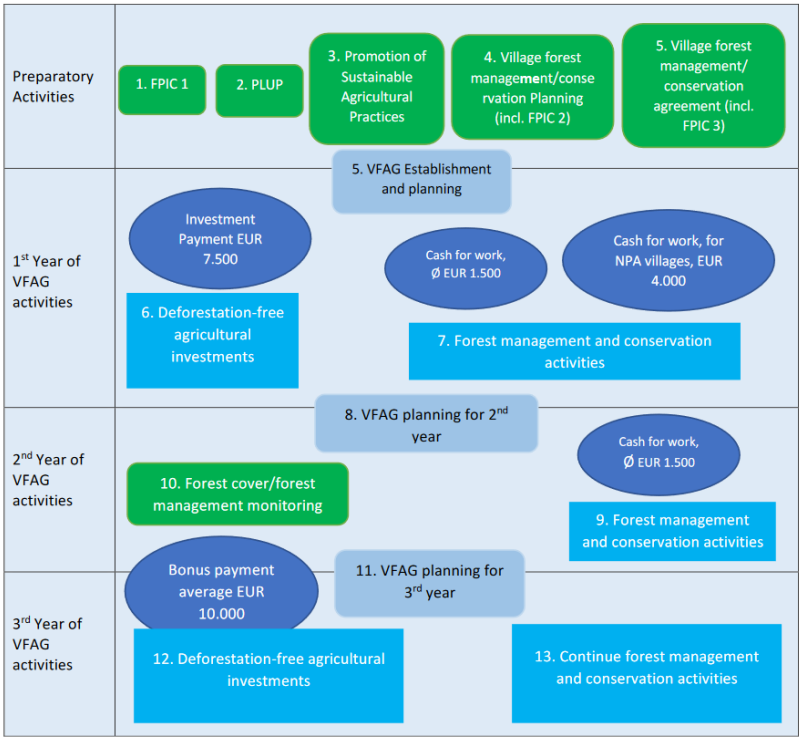


Figure 30. VFAG planning and implementation cycles

Source: Guidelines for the Setup and Operation of Village Forest and Agriculture Grants (VFAGs)

The following sub-activities are included in Project 2:

- Sub-activity 2.1.2.1 Scaling up the VFAG approach to 290 villages
- Sub-activity 2.1.2.2 Capacity building of new VFAG committees
- Sub-activity 2.1.2.3 Monitoring of VFAGs

Budget/ Co-finance	**Total Activity Cost: 8,057,181 EUR** ▪ GCF finance: 7,393,544 EUR ▪ Co-finance: 663,637 EUR
Sub-Activity 2.1.2.1: *Scaling up the VFAG approach to 290 villages*	
Description	The VFAG establishment process begins with the FPIC 1, which is a precondition for any further action. The first meeting, is held with all villagers to disseminate all project information and get their consent to participate in the project (conducted within Activity 1.2.2). The PLUPs developed under Activity 1.2.2 are also closely linked to the operationalisation of the VFAG as they will inform the PSAP process and the Village Forest Management Plans, and as such the potential investments of the VFAG. The projects' target is that community meetings to set up VFAGs are attended by at least 40% female participants. *VFAG steps continued within Sub-Activity 2.1.2.1:* After the completion of FPIC 1 (village consent), village authorities are briefed about the setting up of a VFAG, its objectives, activities and benefits. A time schedule for the subsequent steps should be agreed on. During one or several ensuing village assembly meetings, depending on

	the level of details needed and the capacity of the villagers to absorb information, the following actions will be undertaken. First, ensuring that villagers fully understand the project objectives and approaches, especially what forest management, promotion of deforestation-free agriculture, and the VFAG payment system will require of them. For these meetings, all households should be represented. The detailed functioning of the VFAG, including consequences and grievance procedures in case of non-compliance, and options for the use of the VFAG funds will be presented clearly. Then the VFAG is officially founded with special focus on the discussion and adoption of the VFAG by-laws and the election of the VFAG Committee. The elected VFAG Committee is subject to approval by the District Governor. Participatory Land Use Planning (PLUP), Promotion of Sustainable Agricultural Practices (PSAP) and Village Forest Management Planning (VFMP) will be supported in every selected target village. Activities planned under PSAP and VFMP will be feeding into the VFAG planning process and need to be coordinated accordingly. Now the village prepares its VFAG plan, based on the Village Agricultural Activity and Investment Plan and the first Village Forest Management Plan. This is the first planning process in an annually recurring event. In parallel, each project target village opens a current account (referred to as VFAG current account), to which all village payments will be transferred. The VFAG current account is opened at the respective district branch of the "Banque pour la Commerce Extérieure Lao Public (BCEL)" with the registered VFAG as account holder, and the VFAG President and VFAG Cashier as owners and joint signatories. If there is no BCEL branch in the respective district, Lao Development Bank (LDB) or Agriculture Promotion Bank (APB) branches may be used. The Amount of "investment payment" of EUR 10,800 is requested by the VFAG Committee, signed by all three VFAG Committee Members and submitted to the EPF as Annex to the quarterly DAFO plans. From this point on the VFAG scheme is operational and can be used to support White List activities and for payments of other components.
Baseline	<u>Project 1 outcomes:</u> ▪ VFAG Guidelines in English and Lao have been drafted and approved. ▪ Fund allocation from the VFAG prioritizes support to women-headed households and young farming families. ▪ VFAG committees have been elected and trained and accounts are established in the first 170 target villages in Houaphan, Sayabouri and Luang Prabang. VFAG current accounts have been opened. ▪ The VFAG approach has shown to be suitable. <u>Project 2 current situation</u> ▪ New target villages under Project 2 partly have VDFs. ▪ No activities for which VFAGs would be required have been started.
Deliverables	Sub-activity 2.1.2.1 will lead to fully functional village funding mechanisms that can be used for VFAGs and other disbursement operations relevant to the project. Indicators:

	▪ Agreements with 290 villages to set up a VFAG have been signed ▪ VFAG Committees have been established in each village ▪ Each VFAG has been approved by the district governor ▪ Bank accounts for each VFAG have been opened ▪ EPF has, through its submission to the Quarterly DAFO Plans, confirmed the operationality of each VFAG ▪ Accounts have been stocked with funds
Justification	To support shifting cultivation and upland farmers in their transformation of land use towards sustainable and resilient agricultural practices appropriate funding mechanisms have to be applied. The project's investments in innovative, sustainable and permanent production models require a grant support by the project. These models are not suitable for loan funding mechanisms that normally require a quick return on investment with reasonable levels of investment security. VFAG funds present the funding mechanism on village level to maintain ongoing activities and provide financial support to eligible farmers involved in PSAP and White List activities. They were established with a comprehensive set of guidelines in Project 1 and were found to be a suitable and fully integrated mechanism for the support of project activities at village level.
Institutions involved	The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. Following the VFAG Guidelines, responsibilities are allocated as follows: DAFOs in cooperation with project staff and external experts will have the following tasks: • To assist the villagers to select options for sustainable agricultural systems from the White List and investments to be promoted and supported by grants from VFAG; • To facilitate the development of village agricultural activity and investment plans and budgets, and their submission to DPMU; • To organize participatory and hands-on on-site trainings relevant to each village's investments; wherever possible, external resource persons should be engaged; • To promote farmer-to-farmer exchange of knowledge within the village and with other villages and resource persons; • To identify private service providers and companies for the promotion of specific sustainable agricultural practices and marketing opportunities; • To support project-related monitoring of activities The District Project Management Units (DPMU) has the overall task to support and to supervise the VFAG from the time of its foundation until all project-related activities in the village are completed. This includes: • Conduct initial consultation and information meetings in coordination with other relevant project partners;

- Support Facilitation of the VFAG founding assembly;
- In cooperation with DAFO and other project partners, guidance of the VFAG assembly during the planning of VFAG-funded activities;
- Upon control against project and government policies and regulations, approval of VFAG plans;
- Supporting the VFAG Committee in its tasks of cash-handling, procurement, fund administration and documentation;
- Supervision and control of flow of funds on village level;
- Coordination of forest management monitoring and decision on compliance or non-compliance to project conditions for "bonus payment";
- Compiling VFAG plans into its annual and quarterly plans as Annex to the DAFO Quarterly Plans, approving and submitting for final approval of the NPMU for a subsequent request of budget from the EPF to be transferred to the Village Accounts
- Compiling VFAG reports into its quarterly and annual progress reports.

The EPF is responsible for the administration and transfer of project funds to Project Owners, including all related financial monitoring and auditing. Therefore, the EPF is foreseen to transfer funds to VFAGs for final processing and disbursal upon approval of operational budget plans by the National Project Management Unit (NPMU) (composed of the NPMU Technical and Management Team) (see Figure 31). EPF is also to report against project milestones and evaluations to the Accredited Entity (AE), GIZ. Monitoring results regarding VFAG disbursal and use will be collected at district level (through the DPMUs), consolidated at provincial level (through PPMUs) and approved at the national level (through the NPMU). The EPF will compile the approved monitoring data into progress reports according to GCF requirements that are to be submitted to GIZ.

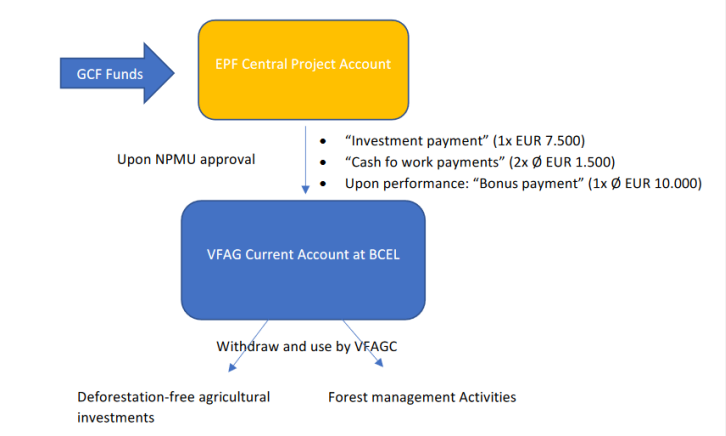


Figure 31. Flow of VFAG related grants:
Source: Guidelines for the Setup and Operation of Village Forest and Agriculture Grants (VFAGs) under the Implementation of the Governance Forest Landscape and Livelihood (I-GFLL) Programme

Sub-Activity 2.1.2.2: Capacity building of new VFAG committees	
Description	This sub-activity will support capacity development of VFAG committees.

	The Committee has the overall task of organizing VFAG related activities and administrating VFAG funds. The VFAG Committee – with support from project staff or/and government counterparts – convenes VFAG assembly meetings at least annually and, additionally, on demand. The specific tasks expected of the three committee members are as follows: The VFAG President assumes the leadership of the Committee and the VFAG. He/she is chairing VFAG assembly meetings and is also representing the VFAG externally. The VFAG Cashier is in charge with effectuating and recording all money transactions within the VFAG. He/she is also responsible for safekeeping VFAG cash stocks. The VFAG Accountant has the task to record and document all income and expenditures within the VFAG in a timely, complete and correct manner. He/she keeps a cash book, collects bank statements and ensures that all expenditures are documented by invoices according to project accounting standards. At the end of each annual cycle, he/she prepares the Annual VFAG Usage Report. In order for the newly elected committee to perform these tasks appropriately, each member must be familiarized with the rules and standards that have been defined in the VFAG Guidelines and govern the entire process. They require training in both ▪ the specific processes relevant to the fund management, as well as, ▪ more general capacity building on financial management and literacy. Thus, the committee members will receive training specific to their role (as described above) and on general accounting and financial practices relevant to the VFAG management. They will also be trained in the preparation of VFAG Agricultural Investment Plans, which include investment plans developed by farming households.
Baseline	<u>Project 1 provinces:</u> ▪ Training on the VFAG mechanisms has been conducted in 15 districts, VFAG committees at village level have been established in 168 target villages, detailed financial management training of the committees has been finalized in 157 villages and bank accounts for the VFAG have been opened for 151 villages. ▪ Financial management by villagers can be challenging in some villages due to limited capacities. Thus capacity building is critical to ensure the success of the activity. <u>Project 2 provinces</u> ▪ No VFAGs have been set up in Luang Namtha, Bokeo and Oudomxay provinces nor in the 50 additional villages in Houaphan, Sayabouri and Luang Prabang
Deliverables	A fully functional VFAG network has been set up that includes all villages targeted in this project. Indicators:

	▪ VFAG Committees in 290 villages have received capacity building, enabling them to perform the tasks required for the management of VFAG funds adequately. ▪ All 290 VFAG Committees have been trained in the management of VFAG funding schemes and are prepared to manage them independently. ▪ The Management of VFAG funds and their disbursement follows the VFAG Guidelines.
Justification	Given the low financial literacy and management capacity of large parts of the rural population in Lao PDR, building capacity in fund management is a precondition for the functioning of VFAGs and all other financial support based on this mechanism. Without the training provided in this sub-activity, capacity barriers would render VFAGs unfeasible. To ensure the equal participation of women in the established VFAGs, an emphasis will be put on the training of women. They form a vulnerable group affected by lower levels of education and financial literacy as well as less involvement in decision making.
Institutions involved	The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. The DPMU has the overall task to support and to supervise the VFAGs from the time of its foundation until all project-related activities in the village are completed, especially: • Supporting the VFAG Committee in its tasks of cash-handling, procurement, fund administration and documentation; • Supervision and control of flow of funds on village level; The VFAG Committee will be the recipient of this capacity building, which will be provided by selected DAFO staff and a GIZ team in one workshop for each village cluster.
Sub-Activity 2.1.2.3: Monitoring of VFAGs	
Description	This sub-activity will carry out the necessary actions to ensure that VFAG Committees adhere to VFAG rules, the following measures will be put in place: ▪ The president and the cashier of the VFAG are joint signatories of the VFAG bank accounts, and in charge of withdrawing cash from the VFAG current account; ▪ Each financial transaction must be recorded timely and correctly into the VFAG Cashbook; ▪ Each financial transaction of the VFAG must be witnessed by at least two responsible members of the VFAG Committee; ▪ For all transactions, receipts must be prepared showing the date, venue of the transaction, the name and contact details of the payer and the payee, detailed purpose of the transaction and its amount. Receipts must be signed by both parties; ▪ All accounting documents must be filed and stored safely; ▪ The VFAG Committee prepares an annual report on the use of the VFAG funds that is audited by the DPMU and subject to adoption by

	the community assembly. Additionally, the DAFO PSAP team is a witness to the VFAG transactions such as the purchase of inputs for White List activities and needs to approve them. The DPMU compares the VFAG Agricultural Investment Plans against the annual reports submitted by the VFAG Committees. To make a basic evaluation of VFAG activities possible, yearly statistics will be prepared, on how much was invested, whether any irregularities were detected and resolved, as well as possible positive effects on financial literacy on villagers/VFAG committee members or their use of financial institutions etc. In case of non-compliance with the VFAG arrangements, the NPMU (or successor organization) can terminate the remaining VFAG term deposit accounts and transfer the balances to EPF.
Baseline	Project 1: ▪ Training on the VFAG mechanisms has been conducted in 15 districts, VFAG committees at village level have been established in 62 target villages, detailed financial management training of the committees has been finalized in 35 villages and bank accounts for the VFAG have been opened for 18 villages. Project 2: ▪ As no VFAG in place, no financial monitoring systems have been established place. ▪ Preliminary experiences from Project 1, although at an early stage of PSAP implementation, have found the proposed approach to be suitable and effective. However, reporting to the EPF has posed some challenges, and thus why capacity building under sub-activity 2.1.2.2 is critical.
Deliverables	The Sub-activity will allow for the tracking of funds from their transfer onto VFAG account to the product hand-over to participating farm households, permitting a high degree of transparency regarding the use of allocated endowments. ▪ Key deliverables are as follows: ▪ Annual monitoring reports provided by VFAG Committees to DPMU and EPF VFAGs are disbursed as for approved plans only and compliance with VFAG arrangements is ensured.
Justification	This activity is well integrated into the operational process of the VFAGs. Monitoring of financial activities will increase the efficiency and chances of success of project interventions. Additionally, the need to provide proof of investment, makes it necessary to put a tracking system in place, that allows for the accounting of all the invested funds to both, NPMU and the project funding organization (GCF).
Institutions involved	The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation

	partners, following the project operations manual. With regards to the specific actions outlined above: • The DPMU Is the major auditing unit, comparing all proposed activities against actual spending. • DAFO teams act as witnesses to actual transactions, as much as this is reasonably implementable.

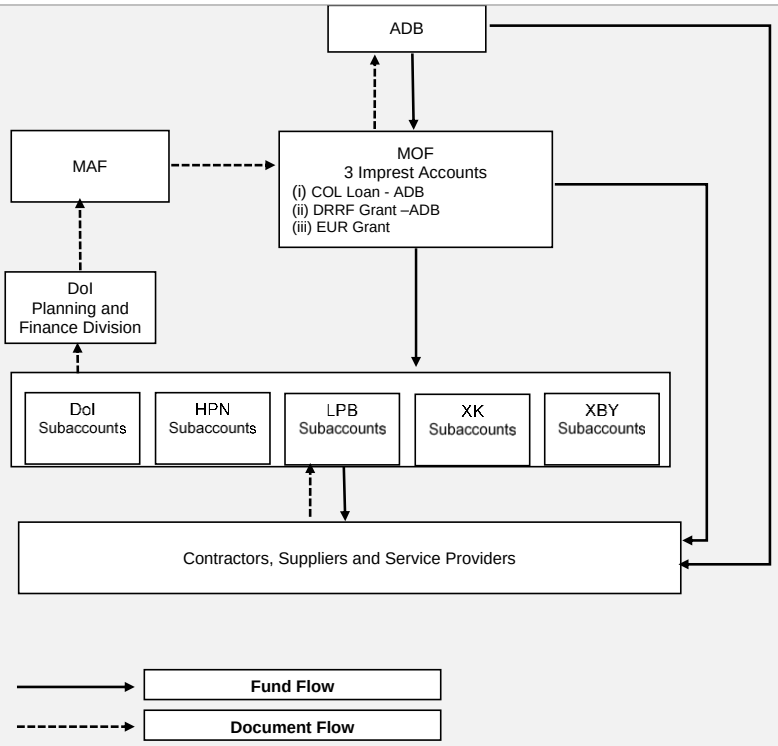
Activity 2.1.3.: Watershed forest management to support small-scale irrigation investments

Activity 2.1.3: Watershed forest management to support small-scale irrigation investments	
Contribution to project output	Activity 2.1.3 builds on the ongoing ADB initiative, "Sustainable Rural Infrastructure and Watershed Management Sector (SRIWSM)" project and the "Partnerships for Irrigation and Commercialization of Smallholder Agriculture (PICSA) funded by IFAD. The ADB project in combination with the IFAD project seek to address sustainable rural economic growth and watershed management in the provinces of Luang Prabang, Xiengkhouang, Sayabouri and Houaphan. However, it should be noted that co-financing for the GCF programme only focuses on actions implemented in Luang Prabang, Sayabouri and Houaphan in a total of 58 target villages across 8 districts. The Activity aims to support sustainable market-oriented agriculture production and sustainable natural resources management in selected watersheds. Specifically, the Activity is ensuring that the forested landscapes in the catchment areas remain intact through improved land management (including good agricultural practices), and reduced pressure from drivers of deforestation and degradation by addressing key underlying causes (e.g., lack of alternative livelihood opportunities, poverty, low agricultural productivity, lack of value adding activities, weak negotiation/marketing skills). The SRIWSM and PICSA projects support market-oriented agricultural product value chain development specifically for high value crops grown on irrigated land plots in 11 schemes which will be rehabilitated and modernized by SRIWSM. PICSA will focus on the provision of improved extension systems for the development of intensified agriculture, capacity building for Water User Groups (WUGs) and provision of farmer group investment facilities. Value chains of high value crops that the SRIWSM/PICSA projects have identified and assessed will be promoted and first market assessments have been conducted (see sub activity 2.1.3.1). A total of 11 irrigation schemes in the three target provinces of GCF1 will be rehabilitated or newly constructed (see sub-a activity 2.1.3.2). Finally, nutrition-sensitive agriculture is implemented in all target villages of SRIWSM/PICSA (see sub-activity 2.1.3.3). The activity has a special and close link to Activity 3.1 (Implementation of village forest management), since watershed conservation measures within the project areas of individual irrigation schemes should be mainly addressed through adequate land use planning and village forest management (see corresponding ADB Output 2: "Watershed Ecological

	Service Protected"). Beside this, other Activities in Components 1-3 are also connected to this measure (e.g. improved law enforcement, implementation of deforestation-free agriculture, and implementation of SFM and FLR, among others). Hence, all eight districts that will be targeted by Activity 2.1.3 were also selected as priority districts for the GCF programme. From its earliest inception phase, SRIWSM and PICSA have been designed with the GCF programme as an integral component.[82] Continued coordination during implementation in the 8 districts is required between the GCF programme and the co-financing projects to harmonize land use planning activities in all catchment areas (activity 1.2.2), the promotion of agricultural value chains for high value crops on irrigated and upland plots and the provision of agro-enterprise investment facilities by PICSA. This continued cooperation is essential to achieve full complementarity and harmonization between the various actors. Furthermore, the 50 additional target villages in the GCF 1 area will be strategically selected to complete the coverage of entire sub-catchments relevant for SRIWSM/PICSA implementation. The following sub-activities are included in Project 2: Sub-Activity 2.1.3.1 Market oriented production Sub-activity 2.1.1.2 Watershed ecological services protected[83] Sub-activity 2.1.3.3 Improved nutritional status
Budget/ Co-finance	**Total Activity Cost: 13,093,759 EUR** ▪ GCF finance: 0 EUR ▪ Co-finance: 13,093,759 EUR
Sub-Activity 2.1.3.1 Market oriented production	
Description	The sub-activity is applying a value chain / market linkage strategy as a means to reduce the market and business risk faced by dry-season irrigators. Farmers located and operating on the 13 subprojects (11 irrigation schemes) have been consulted while making market assessments of the various representative subprojects (RSPs). With the assistance and information of the producers and other actors of the high value crop (HVC) value chains, the prices and margins at the various levels of the value chains of HVCs have been identified and analysed for highest returns and market access. These completed assessments are currently being reviewed. Based on these assessments, SRIWSM will then develop agribusiness and marketing strategies, including HVC cropping plans for the dry season following the completion of the RSPs, identifying the targeted markets (wholesale, retail, or export) for the high value crops, and bringing together the key market actors in the HVCs' value chains to discuss investment needs from the SRIWSM/PICSA grant programme. With the consensus of the key actors along the HVC value chains, the SRIWSM Project is developing the feasibility for project-supported • producer groups/WUGs to supply using GAP the quality and quantity of clean, safe, sorted, and graded HVCs that are being targeted • collectors to aggregate demanded quality and quantity of the HVCs, to maintain (if need be, invest in proper storage for the product) the quality and shelf life of the HVCs, and to efficiently

[82] See the Aide Memoir between ADB and the Government of Lao PDR.
[83] Note: In the overarching ADB project, this Action is entitled "Output 3 Productive rural infrastructure upgraded to be climate resilient, efficient and sustainable operation and maintenance".

	handle and transport the demanded quantity on a regular basis to the wholesalers, retailers, or exporters • wholesalers to provide to the collectors projected demand quantities according to timeline for the HVCs, to provide the specifications of the product they are demanding, to maintain (if need be, invest in proper storage for the product) the quality and shelf life of the HVCs, to process/package, if possible, the HVC to add value that is recognized by the retailer or exporter, and to efficiently handle and transport the product to the retailer or exporter • retailers to provide to the collectors/wholesalers projected demand quantities according to timeline for the HVCs, to provide the specifications of the product they are demanding, to maintain (if need be, invest in proper storage for the product) the quality and shelf life of the HVCs/processed product, and to process/package, if possible, the HVC to add value that is recognized by the consumer • exporters to provide to the collectors/wholesalers projected demand quantities according to timeline for the HVCs, to provide the traceable evidence and specifications of the product the foreign traders/importers are demanding, to maintain (if need be, invest in proper storage for the product) the quality and shelf life of the HVCs, to process/package, if possible, the HVC/processed product to add value that is recognized by the foreign importers/traders, and to efficiently and cost-effectively handle and ship the product to the importers/traders
Baseline	• 3 market assessments conducted
Deliverables	• 11 market assessments conducted for dry season and upland crops
Justification	The proposed investment will develop the market connections between irrigation and upland farmers, helping them to earn higher value markets for their dry season products. Promoted Actions represent a substantial change in the direction of the current thinking and skill sets within PAFO. The design aims to build increased knowledge and strengthen linkages between the public sector and the private sector that underpin commercial agriculture. It addresses key financing barriers by supporting producers to add value in key deforestation-free value chains, improving capacities on market information, and provide a clearer direction for market development in the agribusiness sector and functional provincial agencies. Detailed implementation plans have been prepared by ADB that will guide activity implementation (refer to the ADB supplementary report “Output 1 Design Document” for more detailed information).
Institutions involved	Since the sub-activity is fully implemented with ADB co-financing, the Activity will be managed using the overarching ADB project´s fund flow structure. An overview of the fund flow arrangement is provided in the following Figure 32:



Notes:
1. Direct Payments – more than US$ 100,000; fund flow from ADB direct to Consultant etc; document flow, as per PAFO Sub-accounts.
2. If payment less than US$ 100,000, but not paid from Sub-account – fund flow is from MOF Imprest Account to Consultant etc.

Figure 32. Overview of the fund flow arrangement

Sub-activity 2.1.3.2 Watershed ecological services protected

Description

[84]The SRIWSM Project will contract private contracting firms to carry out the construction or rehabilitation of all 13 representative subprojects. The construction is slated to begin in May 2022. The SRIWSM Project has carried out the engineering design and the requisite surveys of the Sub-projects in Houaphan, Sayabouri, and Luang Prabang provinces. The sub-activity includes:

- The modernization of irrigation infrastructure in 11 irrigation schemes[85] to enable water management within the command area during the dry season and to support crop diversification and intensification.
- The provision of infrastructure[86] and strengthening of the irrigation schemes´ operational capacity to provide reliable and controllable water within entire command area throughout the dry season in three small riparian zones in Luang Prabang, Sayabouri and Houaphan. Limited upgrading will be provided within the main canal to reduce the losses and damaged sections to increase water delivery through the

[84] Note: In the overarching ADB project, this Action is entitled "Output 3 Productive rural infrastructure upgraded to be climate resilient, efficient and sustainable operation and maintenance".
[85] Note: The overarching ADB project will work in 15 irrigation schemes; however, four are located in Xiengkhouang, which is not included within the GCF programme.
[86] Note: All engineering design and survey work for the additional subprojects will be provided by the Provincial Irrigation Section or Public Works and Transport Department (PWDT) for non-irrigation infrastructure. The TRTA findings are that there is more than adequate technical engineering capability within each Province. The major gap is the ability to identify needs-based PRI requirements: i.e., what is to be designed and the decision process by which this is decided (as opposed to technical design input).

lower reaches of the command area adjacent to the canal end. Additional water control measures will be applied through buried secondary distribution pipes, and offtake points for piped, hand-held hoses or sprinkler/trickle or drip applications. PICSA will also fund the upgrading of up to 500 km of village-to-village roads for improved access.

- The strengthening of operational capacity and the development of sustainable irrigation service fees to ensure the longevity, effectiveness and efficiency of the irrigation schemes. Such measures will target water user groups.

Baseline

- 11 targeted irrigation schemes are not modernized (inefficient, broken)

Deliverables

- Irrigation infrastructure in 11 irrigation schemes modernized in a command area covering 2,959 ha.[87]

Justification

The following table provides an overview of planned investments in increasing the reliability of command area irrigation:[88]

Province	RSP (No.)	ASP (No.)	Est Cost ($mill)	Command Area (ha)	Villages (No.)	Households (No.)
Houaphan	1	3	3	552	23	1,756
Luang Prabang	1	2	4.1	1011	32	1,290
Sayabouri	1	3	1.9	1,396	22	1,820
Subtotal	**3**	**8**	**9**	**2,959**	**77**	**4,866**
Standby						
LPB Nam Khan		1	0.9	180	4	315
Total	**3**	**9**	**10**	**3,139**	**81**	**5,181**

Note: RSP – Representative Subproject, ASP Additional Subproject

Source: ADB 2018

The sub-activity will result in improved water use efficiency along with increased water control that will enable dry season water[89] to be delivered for a 12-hour irrigation day on a 5-day rotation. It will increase reliability of wet season irrigation and remove the yield losses to the wet season rice crop in dry years. Further, the area will be serviced during the dry season for high-value crop use. In summary, the Action is expected to:

- Reduce the yield losses of wet season rice due to limited conveyance of wet season water
- Increase dry season command area that receives reliable water
- Deliver dry season water using pipes throughout the command area where individual farmers can connect into using hose pipes, leaky pipes or sprinkler systems

[87] Note: Four schemes are located in Xienkhoung, which have been removed from the target. In total, the entire overarching ADB project will work in a command area of 3,876 ha.

[88] Note: Additional investments are included within the overarching ADB project in Xiengkhouang province; however, these have been removed from the table as they are not included within the project´s co-financing.

[89] Without dry season cropping there is no justification for ADB investment based on a wet season rice cropping system. Further, even where wet season irrigation is actually in use as supplemental irrigation for dry periods, the incremental gain from wet season rice is inadequate to justify investment now that Lao PDR has achieved food security.

	▪ Intensification of dry season production through reduced inter-row spacing as a result of moving from furrow to hose- or pipe-based irrigation systems ▪ Controlled dry season water through scheduling a 12-hour irrigation window delivering water every 5 days to match crop water needs more efficiently As a result, pressure on forested areas is expected to decline due to improved alternative livelihood opportunities.
Institutions involved	See arrangements for Sub-Activity 2.1.3.1.
Sub-activity 2.1.3.3 Improved nutritional status[90]	
Description	PICSA and SRIWSM were designed as nutrition sensitive projects. The AIF grant (ADB-administered EU grant) is being used exclusively to support improvement of nutrition awareness and nutrition sensitive agriculture (NSA) activities of the SRIWMSP Project). The nutrition interventions include increased dietary intake and improved quality of diet for nutritionally vulnerable groups and school-based nutrition activities in all target provinces. District Nutrition Committees have been established in selected districts, received technical training and have developed nutrition intervention packages. The future priorities will be on strengthening the coordinating function between district line agencies by the District Nutrition Committees, provision of technical trainings and strategic guidance on nutrition sensitive interventions. The NSA is being strengthened within the framework of the existing multi-sectoral nutrition coordination mechanism in Lao PDR by promoting behaviour change in sanitation, women's workloads, and dietary habits in prioritized villages in project districts. The improved nutritional status is complementing all other outputs of the SRIWMSP Project by providing increased local availability and markets for diverse and nutritious foods products originating both from the irrigation schemes and from improved use of the catchment areas. The Action includes: • Establishment of Nutrition Committees at district and village level • Conducting Knowledge, Attitude and Practice (KAP) surveys • Implementation of the PICSA nutrition guidelines
Baseline	▪ 0 - The National Nutrition Strategy and Plan of Action (NNSPA) is not implemented in 3 target districts in Houaphan Province
Deliverables	• NNSPA implemented in 3 districts with nutrition-sensitive agriculture
Justification	The following table provides an overview of planned investments in increasing the reliability of command area irrigation:[91]

Province	RSP	ASP	Est Cost		Villages (No.)	Households

[90] Within the overarching ADB project, this Action is entitled "Output 4: Nutrition Sensitive Agriculture in the targeted PRI communities"; EU and IFAD co-finance will also support the implementation of this Action.
[91] Note: Additional investments are included within the overarching ADB project in Xiengkhouang province; however, these have been removed from the table as they are not included within the project´s co-financing.

	(No.)	(No.)	($mill)	Command Area (ha)		(No.)
Houaphan	1	3	3	552	23	1,756
Luang Prabang	1	2	4.1	1011	32	1,290
Sayabouri	1	3	1.9	1,396	22	1,820
Subtotal	**3**	**8**	**9**	**2,959**	**77**	**4,866**
Standby						
LPB Nam Khan		1	0.9	180	4	315
Total	**3**	**9**	**10**	**3,139**	**81**	**5,181**

Note: RSP – Representative Subproject, ASP Additional Subproject
Source: ADB 2018

The sub-activity will result in improved water use efficiency along with increased water control that will enable dry season water[92] to be delivered for a 12-hour irrigation day on a 5-day rotation. It will increase reliability of wet season irrigation and remove the yield losses to the wet season rice crop in dry years. Further, the area will be serviced during the dry season for high-value crop use. In summary, the Action is expected to:

- Reduce the yield losses of wet season rice due to limited conveyance of wet season water
- Increase dry season command area that receives reliable water
- Deliver dry season water using pipes throughout the command area where individual farmers can connect into using hose pipes, leaky pipes or sprinkler systems
- Intensification of dry season production through reduced inter-row spacing as a result of moving from furrow to hose- or pipe-based irrigation systems
- Controlled dry season water through scheduling a 12-hour irrigation window delivering water every 5 days to match crop water needs more efficiently

As a result, pressure on forested areas is expected to decline due to improved alternative livelihood opportunities.

Institutions involved	See arrangements for Sub-Activity 2.1.3.1.

Activity 2.1.4: Implementation of benefit sharing plan for climate-smart agriculture and sustainable livelihoods for forest dependent communities

Activity 2.1.4 Implementation of benefit sharing plan for climate-smart agriculture and **sustainable livelihoods for forest dependent communities**	
Contribution to project output	GCF Projects 1 and 2 are the main investment projects contributing to the GoL's GFLL programme, which further provides the framework for the implementation of the Lao Emission Reduction Programme. As such, the GCF-financed Project 1 and Project 2 and the implementation of the FCPF-

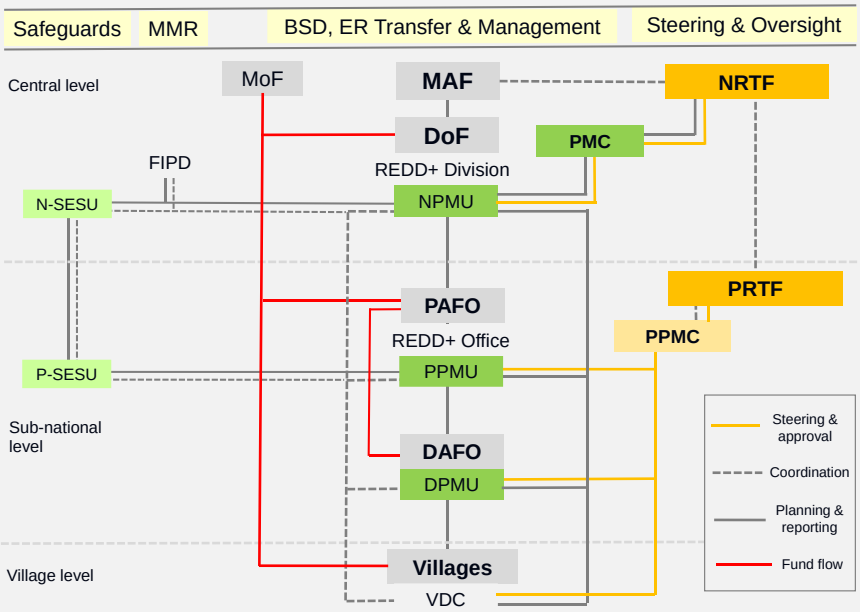
[92] Without dry season cropping there is no justification for ADB investment based on a wet season rice cropping system. Further, even where wet season irrigation is actually in use as supplemental irrigation for dry periods, the incremental gain from wet season rice is inadequate to justify investment now that Lao PDR has achieved food security.

	Emission Reduction Payment Agreement (ERPA) and benefit sharing plan (BSP) are closely aligned (see institutions involved below). Activity 2.1.4 builds on the Lao ER-Programme (GFLL), the FCPF-ERPA and implementation of the associated approved BSP. Specifically, through the implementation of the BSP this activity aims to significantly reduce the expansion of agricultural activities into forested areas, increasing family incomes, and increasing the resilience to climate related hazards such as droughts and floods. The beneficiaries under the BSP include: • Government agencies (at all levels). • Rural forest-dependent communities, hereinafter named as communities. • Actors in pilot initiatives, which will include the private sector, non-profit associations, and research and education institutions. Through World Bank co-financing, this activity will sustain the implementation and results of activities under component 2 promoting sustainable, deforestation-free, and climate resilient agriculture beyond the lifespan of GCF Project 2, with specific linkages to activities, 2.1.1 and 2.1.2. The activity will be implemented at the provincial, district, and village level. It will address the negative impacts of unsustainable agricultural practices and support farmers transition to CSA practices and technologies with higher levels of productivity. During implementation, the principles of CSA and those of Responsible Agricultural Investment[93] will be followed to ensure that, in addition to climate-related criteria, considerations related to social, environmental, gender, and economic safeguards are also effectively integrated. As a contribution to the proposed GCF project, the World Bank will co-finance the following sub-activity: Sub-activity 2.1.4.1 – Operationalization of benefit sharing plan for climate-smart agriculture and sustainable livelihoods for forest dependent communities
Budget/ Co-finance	**Total Activity Cost: 6,021,400 EUR** ▪ GCF finance: 0 EUR ▪ Co-finance: 6,021,400 EUR
Sub-activity 2.1.4.1 Operationalization of benefit sharing plan for climate-smart agriculture and sustainable livelihoods for forest dependent communities	
Description	This sub-activity will support the establishment of an enabling environment to promote sustainable and deforestation-free CSA approaches. It will also support the implementation of these models while helping to address issues related to market demand, low productivity, limited availability of productive alternatives for farmers, and land and soil degradation. As part of the operationalization of the BPS direct investments will be undertaken in support of scalable models implemented with local communities and ethnic groups in a sustainable manner[94]. Investments will also support alternative livelihood options. These models include crop diversification,

[93] The Principles for Responsible Agricultural Investment can be accessed here: https://www.fao.org/fileadmin/templates/cfs/Docs1314/rai/CFS_Principles_Oct_2014_EN.pdf

[94] The ER Programme will not disburse any cash payments to communities. It will establish institutional mechanisms and workplans to deliver benefits to communities.

	agroforestry techniques such as terracing, and intercropping and are all aligned to CSA principles and will bring direct benefits in terms of soil conservation. As part of this sub-activity, market analysis for CSA practices will be conducted and selected models will be effectively integrated into local extension services provided to rural farmers. The sub-activity will further support the integration of farmers to value chains and the delivery to farmers of agro-technological solutions for improving yields. The engagement of the private sector for both the implementation and investments in CSA. Investments in CSA will be supported through extension services to target groups, focusing on developing value chain linkages through promoting processing, marketing and tailored market information and aiming to secure the participation of private sector actors. Support will also be provided to develop cooperative structures amongst farmers to strengthen the negotiating power of farmer groups as well as to improve their access to rural finance. Women, ethnic groups, and other vulnerable groups will receive special attention throughout the implementation of the sub- activity.
Baseline	In 2014 the GoL received a USD 3.6 million grant from the FCPF to implement the Readiness Proposal. In 2016 an additional USD 4.5 million was granted to complete Lao PDR's REDD+ readiness preparation until 2022. An ERPA for a volume of 8.4 million tCO_2eq (with a value of USD 42 million at a unit price of USD 5 per tCO_2eq) was signed between the GoL and the FCPF Carbon Fund in December 2020. The total amount of ER payments will depend on verified emission reductions against the FREL. The GoL has received an advance payment from the FCFP Carbon Fund of USD 3 million to cover the operational costs of all PMUs – national and provincial level - until the first payments for emissions reductions are received. Several technical options have been tested in the northern uplands of Lao PDR over the last few decades to support the transition from subsistence to commercial agriculture.
Deliverables	• Comprehensive market assessments, & value chain analysis of alternate agriculture & agroforestry products/ systems • Specific extension models have been integrated into existing extension services • Government staff trained on identified alternate livelihood opportunities, & have strengthened capacities on climate-smart agriculture & REDD+ • At least 10 training courses on development & implementation of alternative livelihood opportunities have been carries out per province • At least 16 trainings on deforestation free, climate-smart agriculture & alternate livelihood opportunities in the agricultural sector have been carried out per province for farmers & farmers have • Strengthened capacities on climate-smart agriculture & REDD+ • At least 5,998 ha of land have access to newly established or maintained irrigation to support climate smart agricultural production

Justification	The FCPF ERPA implementation arrangements are integrated into existing government REDD+ structures and harmonized with I-GFLL (structures set for FP117). The implementation of the BSP will contribute to sustaining the implementation and results of activities focused on promoting sustainable, deforestation-free, and climate resilient agriculture beyond the lifespan of GCF Project 2, promoted under activities 2.1.1, 2.1.2, and 2.2.1. Implementation of this sub-activity be critical to contribute to further unlocking future results-based finance for ERs.
Institutions involved	The World Bank is responsible for providing oversight and supervision during the implementation of the FCPF-ERPA according to its own internal directives and procedures – this includes the implementation of the BSP.  *Figure 33. Overall implementation mechanism of the FCPF-ERPA* Source: GFLL-ERPA, Project Operation Manual At the national level, MAF is the implementing agency (programme entity) for the FCPF-ERPA. The responsibility for steering and oversight lies within the existing REDD+ Taskforces at the national – the National REDD+ Taskforce – and provincial – Provincial REDD+ Taskforce – levels. The day-to-day management of the GLFF-ERPA is the responsibility of the National Project Management Unit (NPMU) and the Provincial Project Management Units (PPMU) which are embedded into the REDD+ Division and REDD+ Offices in the provinces. Specific responsibilities for overseeing the implementation of the BSP lie within the DoF and the REDD+ division of the MAF.

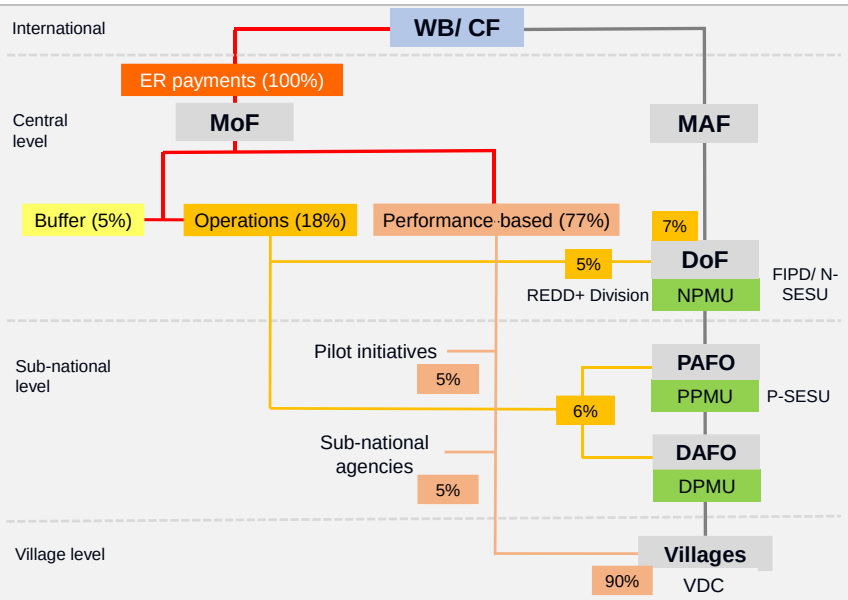


Figure 34. Benefit allocation to beneficiaries

Source: GFLL-ERPA, Project Operation Manual, p. 70

Specific actions have been undertaken to seek the convergence of the GCF funded Project 1 and the FCPF-ERPA to enhance their efficiency and effectiveness as both provide support to the Lao ER-Programme and contribute to achieving results against a coherent theory of change. These coordination actions will be continued under GCF Project 2 and include the use of "joint" implementation arrangements for steering and management.

Table 17: Convergence between GCF Projects 1 and 2 and FCPF-ERPA

Features	GFLL-ERPA	I-GFLL
Governance, management & support		
Policy, steering and oversight	National & Provincial REDD Task Forces	
Technical advice	REDD Technical Working Groups	
Overall execution	Department of Forestry/ REDD Division	
Management & administration	Project Management Units (National, Provincial, District)	
Coordination	Joint regular meetings at all levels (RTFs, PMUs)	
Strategic action plans	Provincial REDD Action Plans	
Work plans & budgets	Coordinated Annual Work Plans/ Budgets, Separate Quarterly Work Plans/ Budgets	
Procurement	REDD+ Division/ DoF	Environmental Protection Fund
Reporting	World Bank specific	GIZ/ GCF specific
Technical assistance	National level	All levels

Operational		
Project area	Six northern provinces, priority districts (30) & communities (500-600)	
Interventions/ activities	Aligned to ERPD/ log-frame, complementary/ harmonized interventions	
Implementation agents	Communities, sub-national Government agencies/ technical teams, private sector	
Implementation of interventions	Harmonized/ complementary mechanisms & technologies, cost norms/allowances and benefits to communities	
Benefit Sharing		
Beneficiaries	Government, communities, private sector, institutions, NPAs	
Benefit distribution	REDD+Division/ DoF and MoF	Environmental Protection Fund
Measurement, Monitoring, Reporting & Verification		
Responsibility/ implementation	Forest Inventory and Planning Division	
Support & funding	F-REDD/ JICA, GFLL/ I-GFLL	
Safeguards		
Assessment	SESA	ESIA
Safeguard frameworks	ESMF	
	EGPF, RPF and PF	ESMP
Overall responsibility	PMUs/ SESUs	
Safeguard implementation/ reporting	SESUs	Hired safeguard staff
Gender	Gender Action Plan	
Design, Timing and Funding		
Programme design	Emission Reduction Project Document (ERPD)	Funding Proposal based on ERPD
Finance source	FCPF Carbon Fund	Green Climate Fund/ Germany
Timing/ duration	2020 – 2025, 6 years	2020-24 (Phase 1), 2022-26 (Phase 2), 6 years
Modality	Results-based payments	Grant
Budget	Up to USD 42 million	Phase 1: USD 18 million (GCF)/

			USD 6 million (Germany)

Source: GFLL-ERPA, Project Operation Manual, p.107

Output 2.2 Agri-MSMEs are capacitated, and have improved incentives and access to finance to invest in marketing and processing for locally sourced deforestation free and climate resilient agricultural products

Activity 2.2.1: Catalysing private sector investments in sustainable, climate resilient and deforestation-free value chains

Activity 2.2.1: Catalysing private sector investments in sustainable, climate-resilient, and deforestation-free value chains	
Contribution to project output	This activity will support the development of sustainable, climate-resilient and deforestation-free value chains in support of the models and investments based on the "White List" that will be implemented by upland farmers in target villages (Activities 2.1.1 and 2.1.2). The focus of the activity is on value chain development and marketing through private sector enterprises and specifically agricultural micro, small and medium enterprises (agri-MSMEs). This engagement with agri-SMEs aims to help ensure there is predictable and increasing demand for the commodities produced under activities 2.1.1 and 2.1.2 in the target villages. At the same time, in-country processing of selected commodities will be enhanced. While the first steps of value adding can often be performed by villagers (e.g. drying, sorting and simple processing), additional steps in the various value chains are often undertaken by local agri-MSMEs. A paradigm shift in the sustainable upland agriculture towards deforestation-free and climate-informed models is only possible with value chain development and marketing support for local private sector companies. A categorization of the most relevant agri-MSMEs for contributing to the results of the project was developed as part of the private sector assessments carried out under Project 1. This categorization will be followed during Project 2. *Table 18: Agri-MSME categorization*[95]

Category A	Companies involved in the entire supply chain, from production to trading and processing, either specialized in a single commodity (e.g. rubber or coffee) or 2-3 commodities. Staff numbers are generally above 15 people, and they have an annual turnover higher than LAK 10,000,000,000 (USD 1,100,000). It is estimated that approximately 30% of the agri-MSMEs belong to this category. They can be considered as medium-sized companies and could play an important role as a catalyst for good practices along the supply chain by making investments in deforestation-free, low-emission and climate-resilient processing, serving higher value markets.
Category B	Companies involved in at least 2 areas along the supply chain. Staff numbers are from 5 to 10 people, and they have an annual turnover in the range of LAK 2,000,000,000 to LAK 10,000,000,000 (USD 220,000 to USD 1,100,000). It is estimated that 50% of the companies would be classified as Category B. Most of them are family businesses. These can

[95] This categorization is based on the project's identified needs and does not represent the official categorization of Lao MSMEs according to the Lao National Chamber of Commerce.

	be considered as small companies and could receive targeted support in terms of securing sustainable production levels through direct cooperation with farmers on a larger geographic scale, widening the scope of products and value adding activities. These companies would certainly represent the core of the target companies for project collaboration and would provide good impact opportunities.
Category C	Companies involved in only one area of the supply chain and currently focusing on trading of raw products. With an average of 1 to 5 staff, they have an annual turnover in the range of LAK 80,000,000 to LAK 2,000,000,000 LAK (USD 9,000 to USD 220,000). Approximately 20% of agri-MSMEs will fall into this category. All of them are family businesses. Category C companies would be considered as micro companies. Their strength is their direct connection and working experience with farmers. Many of them are interested in widening their business model by strengthening value addition and improving market access.

Local agri-MSMEs in Lao PDR face a number of challenges in their business operations:

- Supply chains are unreliable and product quality and quantity strongly fluctuates,
- Applied processing techniques are obsolete and environmentally unsustainable, and
- Access to finance is limited (an estimated 56% of the companies rely exclusively on their own funds for investments).

To address these barriers, Activity 2.2.1 under Project 2 aims to establish strong and reliable connections between the cooperating agri-MSMEs and target farmers. This will include technical training events (including training courses on climate risks, climate resilience and low emission practices, and business skill development training targeting female entrepreneurs), specification of quality standards by the agri-MSMEs and processing requirements by the producers as part of the extension inputs be the companies and finally the conclusion of fair marketing agreements. Due to the more diversified and sustainable production models promoted under the PSAP approach (Activity 2.1.1), supported marketing agreements will mostly be signed by the agri-MSMEs directly with the new producers, either individually or where farmer producer groups already exist with these groups.

In addition, under this activity the project will assist agri-MSMEs through joint value chain and business model assessments, which will contribute to the adoption of low-emission and climate resilient processing methods, improved transportation and marketing of sustainably produced finished products.

Screened and selected agri-MSMEs will be provided with matching grant funds to improve their processing and marketing capacities. Gender consideration is explicitly integrated in the business partner screening, and targets are established to support women-owned agri-MSMEs.

Activity 2.2.1 consists of the following sub-activities:

Sub-Activity 2.2.1.1: Climate-resilient and deforestation-free value chain development

	Sub-Activity 2.2.1.2: Matching grants to support agri-MSMEs develop climate-resilient and deforestation-free value chains
Budget/ Co-finance	**Total Activity Cost: 3,079,438 EUR** • GCF finance: 3,079,438 EUR • Co-finance: 0 EUR
Sub-Activity 2.2.1.1: Climate-resilient and deforestation-free value chain development	
Description	Sub-activity 2.2.1.1 will directly assist a selected number of agri-MSMEs through value chain and business model assessments, with the aim of contributing to the adoption of low-emission and climate-resilient processing methods, coordinated transportation and marketing of sustainably produced finished products. Assessments undertaken for Project 1 and interviews with agri-MSMEs as part of the feasibility study reveal that there is willingness by companies to participate in the project and receive technical support for strengthening operational capacities and diversifying their business models (see appendix 12.4 for the agri-MSMEs interviewed in the three new provinces under Project 2 and the market study). The Lao National Chamber of Commerce and Industry (LNCCI)[96] has been identified as a key potential partner for supporting the work under this sub-activity aimed at strengthening the operations of agri-MSMEs. It is represented in all target provinces by Provincial CCIs. The LNCCI was established in 1989 as an independent body which represents the business community in Lao PDR. It currently has more than 4,000 members represented through CCIs in 18 provinces and business associations and groups. In the context of the project, LNCCI will assist the technical assistance provider contracted under this activity (2.2.1) in the process of identifying suitable agri-MSMEs for close cooperation with the project (see appendix 12.5 for an indication of the type of agri-MSMEs the Project could work with). These agri-MSMEs will then be supported to assess their current business models and value chain activities, as well as to identify their expansion potential and intentions, considering current and required capacities. From an estimated total of 300 companies across the 6 target provinces that will be undergoing a first screening, 10 to 15 agri-MSMEs per province will be selected for closer cooperation with the project. This selection will follow a transparent set of predefined criteria and include companies falling into the 3 categories (A,B,C). Main criteria for selection of suitable agri-MSMEs will be: - Company must be active in the marketing of at least one or preferably several commodities comprised in the White List, - Company should be active in more than one district or show a strong interest in expanding their geographic coverage, - Company should practice at least some kind of value adding and processing or have a keen interest to invest in sustainable processing techniques, - Company must have an understanding and keen interest in sustainable production methods, deforestation-free agriculture and environmental aspects as well as social responsibility, - Company should have potential for future business development in terms of staff, assets, marketing capacities, and access to finance,

[96] For more information about the LNCCI see https://lncci.la/.

	- Company should have expressed a key interest to closely cooperate with the GCF projects, - Companies should be selected to represent diverse value chains with no more than 2-3 companies involved in the same products. - Female-led and ethnic minority agri-MSMEs will be specifically targeted. The project will promote the participation of female-led agri-MSMEs as they face major barriers in entrepreneurship including, amongst others, lack of access to business training and finance along with extremely limited access to networking opportunities and mindset limitations. Therefore, these gender-related barriers will be addressed within the business partner screening and subsequent support activities conducted by the project. Binding cooperation agreements will be signed with all selected agri-MSMEs in which the companies will commit to the marketing and processing of specific commodities in various value chains from project target villages across all target districts. The sub-contracted technical assistance provider in coordination with the LNCCI will provide these business development services through the national LNCCI and the responsible Provincial CCIs. All selected companies will receive capacity building by the technical assistance provider and the LNCCI in the areas of business management including financial management, technical innovations towards low emission value chains, simple market analyses and planning. Technical assistance support will include: • Increased connection from agri-MSMEs to cooperating farmers • Technical training events (including training on climate- risks, -resilient and low-emission practices) • Financial literacy and management of the MSME (financial statements must be maintained, why to open a bank account, simple revenue surplus statement calculation) • Business Plan creation: market (demand) analysis, production capacity, financial projections, marketing activities, organization, and management • Legal advice on Import/ Export and cooperative laws • Advice and facilitation support on fair marketing agreements • Trainings specifically targeting female-led agri-MSMEs For the delivery of this sub-activity a technical assistance company will be hired. The company will be overseen by GIZ as EE.
Baseline	**Project 1 provinces:** • In September 2020, an international consultant conducted detailed interviews with 18 Agri-MSMEs in Luang Prabang and 18 Agri-MSMEs in Sayabouri. The main objectives of the survey were to review the current Agri-MSME landscape in the 2 provinces, assess common business models, attempt a first categorization of companies and assess their financial situation and need for external financing. • Agricultural advisors on the project team have conducted a simple private Sector Analysis in the 3 target provinces, with interviews of 167 companies/traders. As a result, 18 products were identified that matched with the “White List” under Project 1 developed (including broom grass, job's tear, paper mulberry, rice, cardamom, rattan, red bean, bamboo, tea, coffee and sesame).

	• The establishment of a Multi-Stakeholder Platforms (MSPs) on value chain development is ongoing. Provincial Private Sector meetings are about to take place with private sector companies, which will be used to introduce the concepts and objectives of the match-making to potential future partner companies. • As a next step, the project will select agri-MSMEs for training and business development support. **Project 2 provinces:** • No comprehensive private sector analysis has been conducted for any of the three new provinces.
Deliverables	• Initial value chain and business model assessments of 300 companies (screening phase). • Identification and selection of 10-15 cooperating agri-MSMEs per province (in 6 provinces) covering a range of 18 commodities and business models for direct collaboration. Signed cooperation agreements with 60-90 agri-MSMEs from 6 provinces.
Justification	During the implementation of Project 1, it became clear that cooperation with local agribusinesses needed to be further defined. While the idea of working towards fair and lasting marketing agreements with the private sector and their involvement in training and extension activities was already there, the issue of providing clearly defined incentives for agribusinesses to get involved with the project needed to be further strengthened. It became clear that a more comprehensive approach was needed towards establishing sustainable deforestation-free, low-emission and climate-resilient value chains for the main commodities under the White List. An approach focused on agri-MSMEs was selected. Agri-MSMEs - over 800 in the project area - are critical actors to support the development of deforestation-free, climate-resilient value chains given their position as a critical actor at the intersection of deforestation, production systems and value chains. Agri-MSMEs are often left out of discussions on sustainability, and there is a notable absence of financing opportunities accessible to them. These factors contribute to creating a bottleneck for the development of sustainability-oriented value chains. In order to prepare the agri-MSMEs to have a substantial impact on the development of deforestation-free and climate resilient value chains, significant technical assistance is required. This is a need that has been identified both under assessments carried under Project 1 and during the development of this feasibility study for technical support.
Institutions involved	The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. A technical assistance provider (company) will be contracted following a competitive recruitment process for the delivery of technical assistance under the activities 2.2.1 and 2.2.2.

	The Lao National Chamber of Commerce and Industry (LNCCI)[97] will support the implementation of this sub-activity. The LNCCI is a civil society organization of businesspeople including MSMEs, established by the government of Lao PDR to serve as a bridge between state organizations and business units. It operates independently and has its own budget.
Sub-Activity 2.2.1.2: Matching grants to support agri-MSMEs develop climate-resilient and deforestation-free value chains	
Description	To promote deforestation-free and climate-informed value chains and the marketing of sustainably produced commodities in accordance with the "White List", the project will provide matching grant funds on investments by a sub-set of the agri-MSMEs identified under 2.2.1.2 that will be further screened[98] and selected to improve their processing[99] and marketing capacities. Matching Grants are defined as a contribution linked to either an equity contribution or a complimentary loan, where: • 50% of the total investment amount comes as a GCF grant managed by GIZ and channelled through EPF, and • 50% of the total amount comes from an equity contribution of the agri-MSME or as a loan from a local financial institution in Lao PDR. After selection of suitable companies and the necessary contractual agreements, the project would provide a 50% matching fund for company investments in climate change adaptation and GHG-saving technologies based on a new business plan supported by the technical assistance provider hired under the project.[100] The matching grants would be available to all 3 categories of companies (A, B, C). Support for agri-MSMEs throughout the matching grant cycle – from business plan preparation to implementation support and monitoring – will be provided by the technical assistance company that will be contracted under activity 2.2.1.1. The target beneficiaries of the matching grant mechanism are agri-MSMEs in the following 3 categories: *Table 19: Maximum matching grant amount according to agri-MSME categorization* **Category** | Maximum amount | Indicative number of grants **Category A** | EUR 50,000 | 20 **Category B** | EUR 25,000 | 24 **Category C** | EUR 10,000 | 20 The funds for the financial contributions to the investments by the selected agri-MSMEs will be channelled by GIZ through the EPF. Disbursements of any grant contributions will be based on approved investment plans (according to predefined eligibility criteria and positive list for investments in low-emission and climate-resilient value chains). Depending on the size and type of investment matching grants would be limited to an amount up to EUR 10,000 per company of Category C, EUR 25,000 per company in Category B and EUR 50,000 per company in Category A. It is expected that the provision of 50%

[97] For more information see: https://lncci.la/.
[98] The screening process will look at various technical, financial, and institutional factors, as well as environmental and social safeguards and gender.
[99] Climate-sensitive processing investments will include solar energy supply and solar dryers, water-saving technologies, environmentally friendly packaging, transport management and higher values end products for alternative markets.
[100] Matching grants will be used to pre-finance investments. See rationale in justification.

matching grants and targeted technical support can help agri-MSMEs open up additional sources of funding by offering additional risk buffers to commercial banks.[101]

Table 20: Eligibility criteria for consideration of the matching grant mechanism

Eligibility Criteria	Specification
Sector / Value Chain	Agri-MSME Focus on processing or marketing at least 1 commodity within the subset of the "white list").[102]
Company types/ ownerships	Sole ownership, partnerships, joint ventures, and cooperatives.
Business purpose of the applicant's company / eligible investment areas	• Machinery • Structures as support for a proposed investment (max 50% of grant) • Renewable energy • Certifications • Merchandising
Company Age	Company must be in operations for at least 2 years.
Company Size	Category A, B, and C – agri-MSMEs
Company registration	Must be officially registered with DoIC in Lao PDR
Company operations/ location	Must have operations in one the 6 target provinces (at the province, district or village level).[103]
Financial 141gmt.. & accounting requirements	Must have a bank account at the point of matching grant application; must show financial statements[104] for at least one year.
Matching contribution	The agri-MSME must match the 50% matching grant with a contribution of its own[105]

The matching grant mechanism will target a sub-set of the commodities in the White List. These commodities were prioritized based on their market and value-added potential.

Table 21: subset of White List commodities

Commodity	Steps of Value Adding	Possible End Products
Coffee	Drying, fermenting, grinding, roasting, packaging	Green beans Roasted coffee
Tea	Drying, fermenting, cutting, packaging	Green or black tea varieties
Bong Bark	Drying, cutting, milling, paste making, packaging	Incense sticks

[101] Depending on the structuring of the underlying loan agreements, banks could receive first access and exploitation rights to the investment assets in case of a loan default, whereas only a maximum of 50% was financed (depending on the amount of the agri-MSMEs' own contribution).
[102] A company that has no active participation to the agribusiness value chain (e.g. pure logistic company), it would not be eligible.
[103] If a company has no active participation to the agribusiness value chain (e.g. pure logistic company), it would not be eligible. Plans to expand operations into the Project villages will be considered as an integral part of the selection process to enter into agreements with agri-MSMES and thus already considered as part of the eligibility criteria.
[104] From District office confirmed financial statements (not bank statements)
[105] The contribution from the agri-MSME will be verified during the matching grant allocation process

Tung Oil	Drying, extracting oil, bottling	Oil for paints
Benzoin	Drying, cleaning, grading, packaging	Fragrance powder
Rubber	Cleaning, compressing, heating, grading	Sheet rubber, timber
Paper Mulberry	Drying, cutting, grinding, grading, pulp making, packaging	Mulberry paper
Bamboo	Drying shoots and canes, fermenting shoots, conserving shoots, cutting canes, milling for pulp, grading, manufacturing of handicraft items, packaging	Canes, shoots, handicraft, pulp
Cardamom	Drying, grinding, grading, packaging	Seeds, Cardamom powder
Rattan	Drying, cleaning, heating, grading, Manufacturing of handicraft items	Handicraft, furniture, conserved shoots
Sichuan Pepper	Drying, cleaning, grinding, grading, packaging	Sichuan pepper husks
Broom Grass	Drying, cleaning, grading, broom manufacturing	Brooms
Sascha Inchi	Drying, conserving, roasting, extracting, grading, packaging	Nuts, oil, creams, cosmetics
Cotton	Cleaning, grading, spinning	Handicrafts, clothes
Beans	Drying, hulling, cleaning, grading, oil extraction, tofu processing, packaging	Beans, tofu, sprouts, oil
Peanuts	Drying, hulling, cleaning, roasting, milling, oil extraction, packaging	Peanuts, butter, oil
Job`s Tears	Drying, hulling, cleaning, roasting, milling, oil extraction, grading, packaging	Berries, flour, seed oil
Sesame	Drying, cleaning, roasting, milling, oil extraction, grading, packaging	Seeds, oil, paste (Tahini)

The use of funding from matching grants will be constrained first by an exclusion list (that will follow the IFC Performance Standards) and second by a positive list of categories and uses. An indicative positive list is shown below. It will be validated with the technical assistance provider at the beginning of the project.

Table 22 Indicative positive list of investment categories

Category	Potential uses*
Machinery	Processing equipment such as: • driers, ovens • choppers, mills, cutters, threshers, shredders, crushers, presses • washers, cleaners • sorters, separators, centrifuges etc. • mixers • pelleting machines • roasters, cookers, smokers • bottling and canning machines

	• pasteurizers • cold-chain equipment (e.g. fridges, freezers etc) • fermentation vats • packing machines, balers, wrappers etc.
Auxiliary infrastructure investment (e.g. storage facility etc.) (max 50% of grant)	• Warehouses, storage facilities; • Covered/uncovered drying yards, • Extension of processing space (excluding the purchase of land)
Energy	• Solar cells, wind turbine, water turbine, • Batteries and other items required for the functioning of such systems
Certifications	• Acquisition of sustainability and climate compatibility certifications • Getting GMP or HACCP certification • Getting quality or food safety certification
Merchandising	• Investment in branding, technology, for marketing and commercialization of climate-friendly products • Integration into existing online market platforms for sustainably produced products

* A link to sustainability will have to be clearly demonstrated in the business and investment plan that will be submitted for consideration for accessing a matching grant.

The TA provider will also support agri-MSMEs in identifying sources of finance for complementary loans from local financial institutions. Specifically, the TA company will help the Agri-SME to work with the financial sector in the following areas:

Table 23: Support to agri-MSMEs seeking access to additional sources of finance

Screening / Ground work	During the loan negotiation	After the Loan agreement
· Preparation of financial documents and economic evaluation of the Agri-SME · Help to create the investment proposal, company description and climate impact rationale · Preparing the equity option · Suggest relevant fin-ancial institutions to contact (banks, MFIs) in case of a loan option · Advice on financial literacy (minimum accounting)	· ·Help to fill out bank / MFI documents and help to open (bank) accounts · Giving indications of fair loan interest rates and helping to build the rationale for the Agri-SME · The TA company should not attend any bank/ MFI negotiation meetings together with the Agri-SME (undistorted-free market principles)	· Help the Agri-SME to create and update the steering committee documents, investment proposal · Follow through on loan contract signature after a positive Steering committee decision (e.g. confirmation of TA company to bank/MFI, minutes of steering committee)

	Finally, monitoring of the use of funds and implementation of the agreed and financed investment plans will be ensured through the ongoing support and coaching by the technical assistance provider.
Baseline	A few projects in Lao PDR have utilized matching grants in the agricultural sector or for private sector development. However, this will be the first project to use matching grants for value chain development with a focus on enhancing their sustainability and reducing their impact on deforestation. It will also be the first project to accompany agri-MSMEs with intensive TA support and coaching activities throughout the process of business plan development, investment planning and market expansion.
Deliverables	• Provide 50% matching grants to 60 agri-MSMEs (including female-led agri-MSMEs) against an approved and validated investment plan • Progress and monitoring reports from the technical assistance company
Justification	Agri-MSMEs face several challenges and barriers for accessing finance. Amongst these are: • Agri-MSMEs lack proper business and financial planning. Business documents and growth ambitions are often lacking. Operations are not at international standards and are covering short-term needs only. The majority are traders or middlemen for unprocessed commodities. • Agri-MSMEs often do not even have a bank account. • Many financial institutions in Lao PDR have limited penetration in rural areas, making it physically difficult for remotely-located individuals and businesses to reach bank branches. • Many micro enterprises lack the financial literacy required to understand the types of lending products that are available, how to develop a business plan, and how to go through the process of applying for a loan. They may also be discouraged from applying for a loan if they are uncertain about their future revenue stream, perceive that banks do not cater to their type of business, or are unable or unwilling to comply with the Lao PDR's high collateral requirements. • Banks typically require immovable assets (land and buildings) as collateral for loans—a key obstacle for many agri-MSMEs that do not own land or buildings of sufficient value. Even with fixed collateral, banks face the challenge of a lack of high-quality and trustworthy land valuation service providers in the country. • Information asymmetries between lenders and borrowers: Many agri-MSMEs do not maintain reliable financial statements, which makes it very difficult for banks to understand the firm's profitability, cash flows, and ability to meet loan repayments. Some banks are highly reluctant to lend to SMEs in general. • Moreover, banks face major difficulties in claiming collateral in the case of default. It is very costly and time consuming for banks to take possession of collateral assets through the judicial system, which can take up to 5 years. • The listed barriers are even more severe for women as they face gender-related disadvantages such as less access to education, land ownership, financial means and decision making, combined with time poverty and family/household responsibilities.

On the choice of EPF as the matching grant manager:

The EPF was chosen as the fund to channel the matching grants following an assessment process that considered several alternatives. These, included:

Alternative 1: Channelling matching grants through banks

In the concept note it was foreseen that a local financial institution would manage the matching grants based on preliminary consultations and other parallel process (for instance the development of a NAMA). Financial institutions had been considered as an adequate conduit for channelling the matching grants due to their direct links with clients in the agricultural sector as well as due to the initial intention of supporting the development of a green credit line under the project. During the feasibility study consultations were held with the following banks:

Table 24: Banks consulted

Bank	Initial Interview Date
BCEL	2022-02-04
LDB	2022-02-27
APB	2022-03-01
ACLEDA	2022-01-25
NAYOBY	2022-03-09

Banks in general were not able or interested in managing international grant funds. They expressed concerns about the associated monitoring and reporting needs, as well as about the overhead costs that managing these funds would carry. LDB, after a change in ownership occurring during the development of this feasibility study, confirmed through a deputy manager that there was no interest from the institution in managing matching grants. BCEL elevated the decision to its board of directors, where it was decided that the institution could not manage the grants as it would be inconsistent with their role as a bank. APB had a weak infrastructure to manage the grants. ACLEDA had limited operational footprint in the project area. Last, NAYOBY also had weak infrastructure and options to dissolve the bank and have some operations absorbed by the Central Bank are currently being explored.

Alternative 2: EPF

EPF was chosen as the fund to channel the matching grants due to the following reasons: EPF is already managing the funds for VFAGs and is managing the matching grant funds under Project 1; it adheres to international fiduciary and environmental and social risk management standards; managing the matching grants for agri-MSMEs will help EPF develop capacities to work with the private sector that will be important as the fund concludes its GCF accreditation process and develops its own climate finance projects and programmes; and the World Bank is also exploring the option of working with the EPF for channelling grants to private sector companies (albeit for a different sector).

Alternative 3: An Alternative Fund Manager

The feasibility study team also explored the option of channelling matching grants through an asset management or fund management company to further enhance the participation of private sector actors in the project. After initial discussions were held with a fintech and fund management company the option had to be discarded. The main reason was that in Lao PDR company

licenses to operate in the financial sector are only for banks, micro-finance institutions, and leasing companies. There is no asset management license and many companies that provide asset management services operate as consultancies. This eliminated the possibility of channelling funds through these types of companies from a GIZ financial management and procurement perspective.

Alternative 4: GIZ managed facility

GIZ has established matching grant facilities in other countries, including in Cambodia. While it was technically feasible for GIZ to manage the matching grants it was decided against this approach for the following reasons: the approach would have a limited contribution to the development of local capacities, and hence EPF was selected, and the transaction costs of managing the funds could potentially be too high and limit upscaling potential.

Institutions involved

The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual.

The EPF is responsible for the administration and transfer of matching grants to agri-MSMEs. This includes all related financial monitoring and auditing. Therefore, the EPF is foreseen to transfer funds upon approval of matching grant investment plan by the Matching Grant Mechanism Steering Committee. EPF is also to report against disbursements, project milestones and evaluations to the Accredited Entity (AE), GIZ. The EPF will compile the approved monitoring data into progress reports according to GCF requirements that are to be submitted to GIZ.

The indicative governance of the Matching Grant Mechanism is shown below:

Table 25: Governance arrangements

Entity	Key considerations	Role & rights in the "Matching Grant" Steering Committee
GIZ as AE	• Can veto the decision of issuing a matching grant • Can vote for issuing the matching grant • Can change the matching grant process • Project manager or deputy must attend the matching grant steering committee meeting	Veto- and Voting rights
EPF – Environment Protection Funds	• Can vote for issuing the matching grant • Can recommend not to issue the grant • The bank account is under EPF management • EPF must report to GIZ based on GIZ internal processes and requirements.	Voting rights Has to report on Matching grant funds
TA Provider	• Must prepare the matching grant "decision" document which reflects the agri-MSMEs proposed for closer cooperation and gives an overview of the MSMEs financial	Has to confirm assets, own MSME equity and has to report on

	data, business plan, investment concept and provides an indication of the value of assets/ the own equity contribution of the agri-MSME • Coaches the applying agri-MSME and build its capacity • Supports implementation of matching grant investment plan.	commitment of MSME
Applying agri-MSME	• Has to compile all required documents and sign the application form • Has to work with the TA provider and has to provide technical and financial data and forms • Has to have a bank account with any bank or microfinance institution • Has to sign a cooperation agreement, once selected	N/A
Ministry of Agricultural & Forestry	• Optionally attends the steering committee as observer • Can give feedback about the agri-MSME, the sector, the strategic direction of GoL and the process	Can give a suggestion about the MSME, the sector
Matching Grant Steering Committee	• Consists of GIZ, EPF and MAF as observer • One decision maker from GIZ, EPF and the TA company must be present to have a functioning Steering committee • Must ensure that TA is delivered to companies that have the highest likelihood of being selected for closer cooperation and grant financing • Must ensure that the process is practical	N/A

The table below provides an overview of the roles and responsibilities of different parties throughout the matching grant cycle.

Table 26: Roles and responsibilities

Step	Responsible Entity	Role and responsibilities
1	TA provider	Engages agri-MSMEs for initial discussion and develops short-list of potential agri-MSMEs that are the most relevant (check alignment with white list criteria, eligibility criteria, selection criteria, formal requirements for proposal, i.e., business/ financing plan)
2	GIZ as EE	Approves short-list
3	Agri-MSME	Confirms interest and commits to working with TA provider
4	TA provider	• Supports agri-MSME to develop necessary documentation for business and investment planning • Prepares decision document for the Steering committee • Supports agri-MSME to access loan funding if necessary

5	GIZ as EE	Issues non-objection to investment plan
6	"Matching Grant" steering committee	• Evaluation of investment proposal • Provides either: Approval / Rejection / Modification suggestion • Oversees budget, adjusts process
7	TA provider	In case of approval, facilitating and accelerating the financial flow from EPF to the respective agri-MSME
8	EPF	Disbursement of funds – to the bank account of the agri-MSME Monitoring / Reporting of fund usage to the steering committee
9	Agri-MSME	Implementation of the investment plan
10	TA provider	Continued coaching and capacity development of the agri-MSME Monitoring of the MSME investment plan implementation and reporting into the "matching grant" steering committee

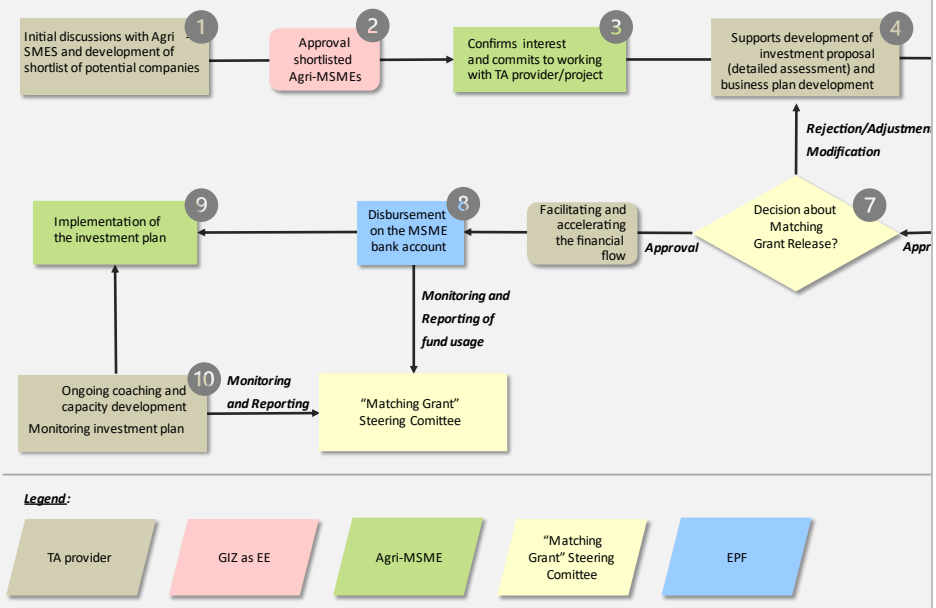


Figure 35. Indicative process flow chart[106]

Component 3 - Climate change mitigation and adaptation action through forestry

Output 3.1 Village Communities are trained by capacitated government staff and have the financial resources to implement sustainable (village) forest management plans that contribute to REDD+ and strengthen the resilience of forest ecosystems and the livelihoods that depend on them

Activity 3.1.1: Village Forest Management (VFM)

Activity 3.1.1: Village Forest Management (VFM)

[106] The grant allocation process will be finalised with EPF during the development of contractual agreements and will be aligned to principles outlined in GIZ's Financial Guidelines for Grant Agreements and Procurement Guidelines

Contribution to project output	Village forest management will be implemented in all three forest categories (production forest without any commercial harvesting potential in the short-term, protection and conservation forest and unclassified forest categories) following a landscape approach (See FS Chapter 1.3 for background). Specifically, this activity will support the *development, implementation and monitoring of climate-informed village forest management plans (VFMPs)*. Based on the climate-informed PLUPs developed under Activity 1.2.2.2, VFMPs will be designed using a combination of spatial planning and participatory land use planning with villagers as a precondition to support the sustainable management of village forests. Planning will be undertaken using a landscape approach, taking into account multiple land uses, climate risk and risk reduction measures, and benefits across the project area. The integration of a watershed approach in PLUP will also ensure that village management plans within a watershed are harmonized, considering interlinked upstream/ downstream dynamics. The VFMP guidelines already under implementation in Project 1 (CliPAD/GIZ 2016) provide the following examples of permitted activities:[107] • Forest patrolling for protection against encroachment; fire prevention (e.g. digging fire breaks, ploughing firebreaks, controlled burning of fire breaks, etc.); building check dams or small water reservoirs to provide water for firefighting and water for watering planted tree seedlings; reforestation to promote river bank stabilization and ecosystem-based adaptation; identification and marking of trees to be left as mother trees for seed production; selective cutting (in small quantities in different diameter classes in accordance with the sustainable forest model to improve forest structure and provide timber and fuelwood for villages); close parts of forest temporarily and protect young regeneration trees, fencing off of some parts to encourage regeneration; conduct weeding around valuable tree seedlings; marking of trees to be cut every year; enrichment planting; promotion of natural regeneration (e.g. in case of fire damage, shifting cultivation, excessive degradation/tree cutting); direct seeding in barren, highly degraded areas; and NTFP management and development.[108] As with the development of the VFMPs, the implementation of the VFMPs will follow the best-practice guidelines and procedures outlined in the VFM Guidelines. Financial resources will be transferred to VFAGs using mechanisms established under the current GCF Project 1. On average each village community will receive EUR 1,500 per year (at least twice during the project implementation period) to incentivize the implementation of the VFMP. In summary, the EPF and NPMU will receive budget requests (annual work plans) from village communities and will

[107] Each VFMP establishes the geographical demarcation of village forestry, the allowable cut, where villagers can harvest, allowable practices and prohibited practices. The baseline in each case varies from village to village.

[108] For more information on currently permitted activities, refer to the VFMP Guidelines: https://www.giz.de/en/downloads/Village-Forest-Management-Planning-Guideline.pdf. It should be noted that Activity 1.3 aims to revise these guidelines, and include commercial harvesting based on sustainable management plans and sustainable forest management principles to strengthen additional income streams for villagers and provide incentives for the sustainable management of forest resources.

	check them against set criteria. More details on transfer modalities are available in the Climate Change Window Operational Manual (OM,). The following sub-activities are included in Project 2: ▪ Sub-activity 3.1.1.1: Mainstreaming of climate change adaptation in VFMP processes and training DAFO and PAFO on climate change adaptation within village forestry ▪ Sub-activity 3.1.1.2: Development of VFMPs ▪ Sub-activity 3.1.1.3: Implementation and monitoring of VFMPs ▪
Budget/ Co-finance	**Total Activity Cost: 8,848,382 EUR** ▪ GCF finance: 5,533,282 EUR ▪ Co-finance: 3,315,100 EUR
Sub-Activity 3.1.1.1: Mainstreaming of climate change adaptation in VFMP processes and training DAFO and PAFO on climate change adaptation within village forestry	
Description	This sub-activity will strengthen climate change adaptation within VFM planning, implementation and monitoring. The VFMP development process will be developed considering the climate-informed LUPs developed under Activity 1.2.2, however further guidance is needed within the context of VFM to strengthen the resilience of forest ecosystems and local livelihoods. The following support will be provided: ▪ Revision of the VFM planning guideline[109] and development of a climate adaptation supplement to ensure climate change adaptation is intentionally and systematically considered throughout the process (from planning to implementation and monitoring). This will ensure VFMPs developed, implemented and monitored by the project are climate-informed, and identify suitable measures to strengthen the adoption of ecosystem-based adaptation measures within VFM. Some measures are already often included within VFMPs, e.g. restoration and revegetation of degraded riparian areas, however support from Project 2 will ensure climate change adaptation is intentional and mainstreamed in a systematic manner. It will raise further awareness of PAFO and DAFO officers and villagers on climate change, risks and suitable risk reduction measures. ▪ Development of gender sensitive training materials for training provincial VFM trainers and training materials for district VFM teams on the revised guideline, and climate change adaptation within VFM ▪ Trainings for provincial VFM trainers and district VFM teams on the VFM process and revised guidelines, and best practices for climate-resilient and sustainable village forest management. ▪ Elaboration of informative materials, including materials on climate change (including climate-related risks and risk-reduction practices via VFM and sustainable land management) to support VFMP development processes, and eventually implementation. ▪ As with all training and informative materials developed under the project, the gender and safeguards specialist will review the material before implementation.

[109] Since substantial capacities have been built on the VFMP guideline and considering the project will be implemented in a period of 3.5 years, it is recommended to mainstream climate change adaptation into the guideline, while keeping the overall approach/ stages, which are anyways aligned with a systematic forest planning approach.

	International and national consultants will be hired to support adaptation mainstreaming, the revision of the VFM guideline, and related supporting materials and trainings. Budget will also be provided to print informative materials to support the VFM process (for district VFM teams and villagers), and for training provincial core VFM trainers from PAFO on climate change adaptation, including the revised guideline and best practices to support VFM planning, implementation and monitoring.
Baseline	Project 1 secured buy-in from partners and established the administrative and management structures for VFM. The Department of Forestry (DoF) has agreed to scale up CliPAD Village Forest Management Planning (VFMP) and Implementation Guidelines to all project villages. Under Project 1, these guidelines are considered well-structured and effective for sustainable VFM. However, the guidelines do not discuss climate change risks nor adaptation. Deforestation and forest degradation exacerbate the vulnerability of local livelihoods and ecosystems to climate change in Lao PDR (see FS Chapter 3). Forests serve as a safety net for many communities in Lao PDR, and help them to buffer climate shocks, food shortages, and provide other essential regulating, provisioning, cultural and supporting services. Despite this, REDD+ implementation in Laos has overlooked the potential synergies for improving adaptation outcomes and for strengthening cross-cutting efforts for adaptation and mitigation within the context of forestry and REDD+.
Deliverables	▪ Revised of VFMP guideline where adaptation considerations have been mainstreamed (e.g. increased emphasis on measures to reduce climate risk and strengthen resilience - linked with PLUP under Sub-Activity 1.2.2.2) ▪ Training of Provincial and District VFM teams on planning and implementation of VFM in 6 Provinces. Note trainings in Sayabouri, Houaphan and Luang Prabang will be shorter “refreshers” with a focus on climate change adaptation, as they have been trained on the guideline and VFM process. ▪ Elaboration of informative materials to support the VFM process to strengthen climate change adaptation throughout the process and raise awareness on climate change and resilience building within the context of VFM.
Justification	The updated NDC highlights the need to strengthen the linkages between climate change mitigation and adaptation in forest ecosystems, including improving the integration of adaptation considerations in forest planning and management. It further highlights the need for improved integrated land use planning, to ensure the dynamics between land management, climate change mitigation and climate resilience are considered. Such challenges in the public sector are accelerated due to weak cross-sectoral and vertical coordination among sectors and government levels (i.e. central to local) and limited human resources to coherently implement and enforce regulations and programs among the different levels (Lao PDR, 2021c).

	While reducing deforestation and forest degradation will have an important impact on the resilience of local communities,[110] especially when linked with PLUP (under Activity 1.2.2.2), adaptation should be intentionally considered to maximize cross-cutting benefits and prevent maladaptation within forest management. The integration of adaptation will be partly improved through mainstreaming adaptation considerations and the improved use of climate-information in PLUP process under Activity 1.2.2.2. Nonetheless, it is recommended to ensure climate change adaptation is intentionally mainstreamed within the VFMP process to facilitate the adoption, replication and scaling up of climate-informed and effective measures that build resilience and can be regularly monitored. Women are often more or differently affected by the negative impact of climate change (see Gender Assessment for further information) and special attention will be paid to women when formulating and implementing adaptation actions. VFMPs should include measures that strengthen ecosystem resilience and secure or improve the provision of vital ecosystem services (e.g. stabilizing soils in gully areas through revegetation efforts, stabilizing riverbanks through planting suitable native species, revegetating degraded areas, etc.). In addition, VFMPs represent an important opportunity to strengthen the resilience of local livelihoods through supporting the identification of management priorities (e.g. identifying NTFPs of particular importance for sustenance or medical use, NTFPs of commercial use, opportunities to improve NTFP provision or management, fuelwood needs, etc.), and increase and/or diversify incomes through sustainable VFM.[111] Stakeholder consultations have shown that awareness of projected climate risks and vulnerability as well as of suitable resilience building practices in the AFOLU sector is low (for both government officials and villagers).It also emphasized the importance of continuing to raise awareness and supporting interventions that not only address deforestation, but also strengthen the resilience of local communities. This should also include awareness raising on the important services provided by forests, including in the context of climate change.
Institutions involved	GIZ as EE will hire and oversee consultants supporting climate change adaptation mainstreaming. The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual.

[110] E.g. A study in Savannakhet Province in Southern Lao PDR (Russel et al. 2015) found while policy and economic drivers of land use change were "*[…] likely to significantly outweigh any impacts from climate change on forest productivity*" (p. 36), their study emphasized the importance of strengthened adaptation strategies within the forest sector through EbA to strengthen the resilience of ecosystems to climate change (e.g. from flooding and drought), food security (e.g. the increased use of NTFPs for subsistence and income when there are seasonal shortages of rice, or due to agricultural losses from extreme weather events or climate-related hazards). While this study is from another region of Lao PDR, their recommendations are also reflected by Project 2, which aims to strengthen planning considering the interlinkages between forests, agriculture and food security, and facilitate EbA strategies into forest and land management, among others (Russel et al., 2015).

[111] The latter is particularly relevant given regulatory changes in the New Forest Law that enable villagers to economically benefit from the sustainable management of village forests.

	Provincial and district level VFM teams will be trained on climate change adaptation, including the revised guidelines and materials, and best practices for strengthening resilience through VFM.
Sub-Activity 3.1.1.2: Development of VFMPs	
Description	Based on the climate-informed LUPs (developed under Activity 1.2.2), VFMPs are designed using a combination of spatial planning and participatory land use planning with villagers as a precondition to enable the sustainable management of village forests. The proposed projects will follow the MAF/DOF regulation on Village-Driven Forest Management Planning (drafted and endorsed in 2019), which is largely based on the steps outlined in the VFM Guidelines (GIZ, 2015)**,** developed by CliPAD in cooperation with the Government of Lao PDR and approved by PAFO and PONRE Houaphan. Planning will be undertaken using a landscape approach, taking into account multiple land uses and benefits across the programme area. Among others, tools developed by FAO for planning Forest and Landscape Restoration (FLR) will be used in this respect (FAO, 2022). These guidelines include the following key stages: ▪ Stage 1: Demarcation of forest areas and preparation of detailed village forest map o 1.1 Preparation of field work o 1.2 Implementation of village forest boundary delineation and demarcation o 1.3 Identification and demarcation of forest areas in need of preservation within the agricultural/ livestock zone (if applicable) o 1.4 Preparation of the detailed village forest map at 1:5,000 or 1:10,000 scale ▪ Stage 2: Participatory Forest Resources Assessment (PFRA) and basic forest inventory o 2.1 Selection of PFRA observation points (hotspots) based on interpretation of satellite images o 2.2 Conduct PFRA and transect walks in village conservation and protection forests o 2.3 Conduct basic forest inventory in village use forest if forest products are NOT planned for commercial purposes. If forest products ARE planned for commercial purposes, then a detailed forest inventory is necessary o 2.4 Review and complete all PFRA and forest inventory documents for the village o 2.5 Update the village forest map o 2.6 Preparation of copies of PFRA data and village forest map, and hand-over documents to the village ▪ Stage 3: Preparation of five-year village forest management plan (VFMP) [112]

[112] Supported activities currently include forest protection and regeneration activities. This includes (CliPAD 2016, p. 16): "fire prevention activities, patrolling, promotion of natural regeneration, enrichment plantings, direct seeding, identification and marking of trees to be protected as mother trees for seed production, partial or temporary protection of selected parts of the village use forest, selective cutting, marking of trees to be cut per year, NTFP management and development activities, building of small dams and water reservoirs, planting on national tree planting day and replacement of demarcation pegs along the forest boundaries after 2-3 years." For more information on currently permitted activities, refer to the above-mentioned VFMP guidelines from 2016. It should be further noted that Activity 1.2 aims to revise these guidelines and include commercial harvesting based on sustainable management plans and sustainable forest management principles to strengthen additional income streams for villagers and provide incentives for the sustainable management of forest resources.

	○ 3.1 Organize a meeting of the village land use and forest management committee (VLUFMC) and district staff to jointly prepare a first draft of the VFMP based on the standard format outlined within the guidelines ○ 3.2 Conduct village meeting to discuss and approve the VFMP, including signing the minutes of the meeting using a standard template ○ 3.3 Signing and official approval of the VFMP by village authorities and DAFO ▪ Stage 4: Preparation of annual forestry operation plan ○ 4.1 Organize meeting of VLUFMC and district staff to prepare first draft of the annual forestry operation plan based on the standard template in the guide book ○ 4.2 Conduct village meeting to discuss and approve the annual forestry operation plan, including signing the meeting minutes ○ 4.3 Signing and official approval of the annual forestry operation plan document by village authorities and DAFO ▪ Stage 5: Village forest management agreement ○ 5.1 Prepare village forest management agreement in the village based on the standard template ○ 5.2 Present, discuss and agree on the village forest management agreement in a village meeting ○ 5.3 Sign the village forest management agreement by village authorities, DAFO and District Governor A quota of at least 30% female members in the Forest Management Committees will ensure the participation of women in village forest management related decision making.
Baseline	Since the early 1990s, a wealth of experience in the promotion of village forest management responsibilities and joint forest management in the context of larger production forest areas has been acquired, particularly in the Central and Southern part of the country. Programs such as the Lao-Swedish Forestry Programme (LSFP), the Forest Management and Conservation Project (FOMACOP), the Sustainable Forestry and Rural Development Project (SUFORD) and, lately, the Scaling-up Participatory Sustainable Forest Management (SUPSFM) Programme have all gained substantial experiences in involving villagers in the management of larger production forest areas (mainly national production forests) for commercial use. Their experiences and work results have been well documented, particularly in numerous publications by LSFP and SUFORD, and the Village Forest Management Handbook by FOMACOP (2001). In terms of support to village forest management in upland areas of Lao PDR, there is far less experience available at present. Past project activities have focused mainly on the upland areas of Northern Lao PDR, e.g. in Xiengkhouang, Luang Prabang and recently within the Climate Protection through Avoided Deforestation (CliPAD) Project in Houaphan Province and Project 1. Upland areas are characterized by the presence of shifting cultivation practices in varying intensities, a higher fragmentation of the forest zones, the prevalence of steep slopes and consequently an orientation more towards preservation of forest zones

	(e.g. for biodiversity conservation and watershed protection). The commercial use of forests for timber production plays a lesser role and village use forests are mainly designated for fulfilling the subsistence needs of wood products and NTFPs of the local population. Village forestry guidelines have been developed by DOF (Division for Village Forest and NTFP Management) as well as by provincial and district forest authorities from Houaphan and GIZ's Climate Protection through Avoided Deforestation project (CliPAD, 2016),[113] providing guidance on the realization of Village Forest Management Agreements through a planning process. The guidelines are implementation-oriented, including approved templates and numerous examples to facilitate the effective and efficient implementation of village forest management planning. They build on the experience of the Lao Government and other donor organizations, while integrating key lessons learned and addressing the specific needs arising in diverse contexts (including Northern Lao PDR). GIZ´s CliPAD programme has implemented these guidelines since 2016 in 70 villages in the province of Houaphan and they form the basis for a new MAF/DOF regulation on Village-Driven Forest Management Planning (regulation is drafted and has been endorsed in 2019). Project 1 secured buy-in from partners and established the administrative and management structures for VFM under the project. The Department of Forestry (DoF) agreed to scale up CliPAD Village Forest Management Planning (VFMP) process and Implementation Guidelines to all project villages within Project 1. In addition, the following additional advancements have been made under Project 1 at the time of Project 2 development: - Training on Village Forest Management Planning for Provincial and District foresters completed in Houaphan and Luang Prabang and will take place soon in Sayabouri. VFMPs have been completed in 17 new project villages (16x in Houaphan and 1x in Luang Prabang). Furthermore, 70 existing project villages started revising their VFMPs for the upcoming year. - An Interface-Paper between CliPAD and VFMP (KfW) has been written. - All 70 project villages in Sam Neua and Houameuang District have received 100% of the bonus payments, for maintaining their village forestry area, as agreed in the Village Forest Management Agreements, signed between villagers and district authorities. Those former CliPAD villages are also part of Project 1 to implement annual village forest management plans.
Deliverables	▪ Identification of additional 290 target villages with sub-national authorities with a total forest area of >250,000 ha.

[113] The guideline builds on the lessons learned and is closely aligned with the following documents: i) Guidelines and procedures in forming a village forestry committee (VFC), SUFORD 04, 2004; ii) Guidelines and Procedures for Tree Marking and vine cutting, No /3802 LA.04, 2004; iii) Decree on the Forest and Forest Resource Development Fund, No. 38/PM, 2005; iv) Regulation of the Ministry of Agriculture and Forestry on Forest Inventory, No. 0108/MAF, 2005; v) Guidelines on Participatory Forest Inventory, No. 2155 /DoF, 2006; vi) Guidelines of the Department of Forestry on Sustainable Production Forest Management Planning, No. 2156/DoF, 2006; vii) Forest Law, No. 6/NA, 2007; viii) Village Forest Management Regulation, No. 0535/MAF. 2001, Dec. 2007; ix) MAF Minister's Order regarding the Enhancement of Forest Regeneration in the Country Wide, No. 0111/MAF, 2008; x) Order of the Prime Minister on Strengthening the Forest Management, Protection and the Coordination of Management Forest and Forestry Business, No. 17/PM, 2008; xi) Decree on the Protection Forest, No. 333/PM, 2010.

	▪ Build administrative and management structures for VFM in additional 290 villages. ▪ Participatory Development of 290 VFMP at village level.
Justification	<u>*Overall relevance*</u> Village forest management is well enshrined in the Lao PDR policy framework as a key strategy to meet their development, climate change (adaptation and mitigation) and forest sector-specific goals and objectives (see also FS Chapter 3 for more information on climate change and sector specific policies). "*Village Forest Management is the management, preservation, development and use in a sustainable manner of the forest areas inside the village jurisdictional area which the Government has allocated to the village and which has been classified into village conservation forest, village protection forest, village use forest and other forests. The management of the forest areas has to follow a management plan (Forestry Law 2007). Forest and forestland owners are the organizations, households and individuals to whom the State has allocated forest and forestland areas to manage, preserve, develop and use in accordance with laws and regulations" (CliPAD Village Forest Management Guidelines, p. 1)*. The Draft Forestry Strategy to 2030[114] further highlights the importance of scaling up village forestry for: forest conservation, the sustainable management and use of forest resources, and to facilitate forest protection, reforestation and restoration of degraded forests, resist or prevent forest fires, and limit encroachment of forests. It emphasizes the importance of forests as a source of livelihoods, sustenance, and opportunity for sustainable development, and notes the opportunities with changes in the regulatory framework that permit communities to benefit economically from the sustainable management of village forests. The strategy notes that as of 2020 village forest management plans have been developed throughout the country in 17 provinces and 1 capital (VTE capital), in a total of 1,366 villages.[115] The draft strategy includes village forestry as a core element, with action points to continue to establish and implement forest management plans at the village level, as well as strengthen villages in exercising their rights and responsibilities for the sustainable management of forests and forest land. The NDC (2021) highlights the role of PLUP and forest management to strengthen climate change adaptation in Lao PDR. In terms of prioritized actions to meet their near-term plans, the NDC mentions the following: "*The National land allocation master plan was approved in 2018 with clear scope, categories and use of lands to manage, protect, develop and use lands in accordance with sustainable practices. Participatory land use zoning is being undertaken. Presently, MONRE is translating this master plan into plans at the sub-national level that will also cover an integrated management of natural resources and environment including climate change. Participatory sustainable forest management especially bringing rights and responsibilities closer to forest resources has seen some progress with village forest management plan formulated for selected villages. Fast-growing trees are being promoted to stabilize soil erosion in risk-prone areas. The revised forestry strategy will see enhanced efforts in promoting climate resilience and establishing a clear link between adaptation co-benefits and climate mitigation efforts.*" (Lao PDR, 2021c,

[114] Draft from May 2021
[115] There are 306 villages for protection forest, 147 villages for conservation forest, 155 villages for production forest and 758 villages for inside the three forest categories.

p. 11). That said, the NDC emphasizes that the link between adaptation and mitigation in forestry could be further strengthened. It describes the following long-term adaptation objectives for the forestry sector (p. 10):

- *"Promote climate resilience in forestry production and forest ecosystems, including in buffer zones of protected areas and other forested areas*
- *Promote technical capacity in the forestry sector for managing forest for climate change adaptation*
- *Promote integrated land use planning, natural resources and environment management."*

Thus, the promoted activities within Project 2 are well aligned with the country's adaptation and mitigation priorities, while providing needed support to generate experiences and facilitate improved synergies between climate change adaptation and mitigation in the AFOLU sector.

Experience from Project 1

Overall, Project 1 implementation shows the current approach is effective and well-tailored to the local context in the project area. As such, there are no substantial changes, besides the additional mainstreaming of climate change adaptation under Sub-Activity 3.1.1.1.

The following lessons learned have been identified by Project 1, and are reflected within the design of Project 2:

Lesson Learned	How are lessons reflected under Project 2
Guideline is effective and well-tailored to the local context and capacities	Only minor adjustments to the guideline are envisaged, as described under Sub-Activity 3.1.1.1, to mainstream climate change adaptation. That said, the operational stages are expected to stay consistent to build on existing capacities and ensure the efficiency and effectiveness of VFM processes.
Project 1 implementation, in addition to the experiences of other projects in Lao PDR, has shown the need to gradually build up capacities, and slowly phase out support. Based on experiences from Project 1, it is recommended Project 2 provides continued technical and extension support by PAFO and DAFO in villages covered under Project 1, to ensure a coordinated exit strategy.	Continuation in existing target villages of Project 1 will support technical backstopping, including e.g. implementation of annual activity plans, monitoring of land use plans and changes in forest cover, and strengthening of linkages to private sector companies. However, those villages will not receive any additional budget support after having received the initial investment into VFAG and the bonus payment after 2 years of successful sustainable forest management.
Stakeholder consultations during Project 2 development indicated awareness of projected climate risks and vulnerability, and suitable resilience building practices in the AFOLU sector is low (for both government officials and villagers).	Mainstreaming of climate change adaption into the guidelines, and development of informational materials will be supported under Sub-Activity 3.1.1.1. During the development and implementation of VFMPs, additional attention will be paid to awareness raising on climate change within the context of VFM. Climate change adaptation, including awareness raising and capacity building, has been mainstreamed across all project components (including PLUP and the agriculture-focused activities, among others).

Institutions involved	The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. Financial resources will be transferred to VFAGs using mechanisms similar to those already established under the current GCF Project 1. On average each village community will receive EUR 1,500 per year (at least twice during the project implementation period) to incentivize the implementation of the VFMP. In addition: ▪ The NPMU and PPMUs will be responsible for leading the implementation of this Sub-Activity. PPMUs will also be responsible for budget provision to develop the management plans and expert input and training services to the Government entities. ▪ At the national level, the Sub-Activity will be supervised by the Village Forestry and NTFP Division of DOF. ▪ At the province level (in each province), PAFO will be responsible for overseeing implementation. PAFO as well as the DAFO will provide their staff inputs to VFMP development. ▪ Villagers will provide their time inputs to participate and develop the VFMP ▪ Village Forest Management Agreements must be endorsed by the District Governor based on the proposal supported by DAFO.[116]
Sub-Activity 3.1.1.3: Implementation and monitoring of VFMPs	
Description	As with the development of VFM plans and agreements, the implementation of the plans will follow the best-practice guidelines and procedures outlined in the Village Forest Management Guidelines, including the following stages: ▪ Stage 6: Implementation of the village forest management activities by village groups that signed the village forest management agreement, following annual plan of operation and which will be financed by annually approved grants. o 6.1 Visible and clear forest boundary demarcation (2x/year) o 6.2 Regular boundary monitoring/patrolling (2x/month respectively 24x/year) o 6.3 Forest fire monitoring and control (if necessary, establish forest fire lines and maintain/patrol along during hot season) o 6.4 Silviculture related activities (planting, assisting natural regeneration, stand improvement etc.)

[116] A list of permitted activities for village forestry is provided in Annex 9 of the VFMP guidelines. In village forests, the following are examples of permitted activities: Forest patrolling for protection against encroachment ; fire prevention (e.g. digging fire breaks, ploughing firebreaks, controlled burning of fire breaks, etc.); building check dams or small water reservoirs to have water for firefighting and water for watering planted tree seedlings; identification and marking of trees to be left as mother trees for seed production; selective cutting (in small quantities in different diameter classes in accordance with the sustainable forest model to improve forest structure and provide timber and fuelwood for villages); close parts of forest temporarily and protect young regeneration trees, fencing off of some parts to encourage regeneration; conduct weeding around valuable tree seedlings; marking of trees to be cut every year; enrichment planting; promotion of natural regeneration (e.g. in case of fire damage, shifting cultivation, excessive degradation/ tree cutting(direct seeding in barren highly degraded areas; NTFP management and development; tree planting on national tree planting day).

	▪ Stage 7: Monitoring and evaluation Monitoring and evaluation will be linked with the PDMS established and operated under Sub-Activity 1.2.2.1. The following monitoring and reporting processes will be guaranteed: o 7.1 Quarterly monitoring of progress made in implementation, distributing GCF grants (based on annually approved village forest plans) through the REDD+ Funding Window to VFAGs for the implementation of village forest management activities, reporting illegal activity and reporting conflicts o 7.2 Annual monitoring of the overall achievement in implementing the annual plan of operation, and preparation of new annual plan of operation o 7.3 Every 2 years, conduct monitoring of forest condition and forest cover by using PFRA techniques and transect walks o 7.3 After 5 years, conduct monitoring of the overall achievement of the VFMP, and prepare a new VFMP and new VFM agreement Resources will be transferred to VFAGs, as per Project 1. VFAGs establishment is supported under Activity 2.1.2. Their set up and operation follows the "Guidelines for the Setup and Operation of Village Forest and Agriculture Grants (VFAGs) under the Implementation of the Governance Forest Landscape and Livelihood (I-GFLL) Programme" (Available in FP Annex 2f). In short, the EPF and NPMU will receive budget requests from village development funds and check them against set criteria. Approved requests will be administered by the FFRDF.[117] More detail on transfer modalities is available in the Project Operations Manual (FP Annex 21).
Baseline	As identified in the baseline under Sub-Activity 3.1.1.2, VFMP development, implementation and monitoring is ongoing within Project 1. So far the approach for monitoring has been effective, which is linked with the Provincial Deforestation Monitoring Systems developed in Sub-Activity 1.2.2.1 and the approach described above and within the VFMP Guidelines. An assessment of the interest in local women-led forest patrolling groups showed that 63% of the respondents are interested in participation. Under Project 1, women-led patrolling groups have successfully been formed.
Deliverables	Monitoring and evaluation reports of VFM implementation
Justification	The monitoring and evaluation on the implementation of VFMP activities is crucially important to accurately know, what has been done and achieved (by whom or which groups, where, what time, how much and who controls and follows up). This information is needed as a basis for accurately calculating the exact incentive payments, and for monitoring potential project impacts. Beside this, the monitoring and assessment on the positive and negative change in forest condition after a certain period e.g. 1 to 2 years, of the implementation of VFMP, the outcome will be used for estimating future performance based payments. Based on their knowledge of the forest resources and use of NTFPs, women play an important role in forest management and the project will therefore actively promote their participation in monitoring activities, including the promotion of women-led patrolling groups.

[117] KfW 2017.

	PDMS developed under Sub-Activity 1.2.2.1 will support the monitoring of this activity.
Institutions involved	Finance for the activities will be channelled through the EPF REDD+ Window (as described in Project Operations Manual to VFAGs and to the DAFOs (see fund flow arrangements above for Sub-Activity 3.1.1.2). ▪ The implementation of this sub-activity will be closely supported by the NPMU at the national level with support from the PPMUs. PPMUs will also provide technical inputs, budgeting and planning support and continuous capacity building support during the implementation of the activities. ▪ Participating village households, in close collaboration with DAFO, will implement the activities as outlined in the management plans. ▪ POFI and DOFI will be responsible for the monitoring and evaluation of the activities and ensure compliance with management plans. ▪ DAFO in each province will prepare annual work plans and budgets in close collaboration with the villagers. This will be submitted to the PPMUs for approval. Once approval is given, the PPMUs will request the EPF to disburse funds to the district level, following the operational manual and procedures of the EPF REDD+ Window. ▪ At the village level, fund transfer will be based on annual operational plan preparation and budget requests that will be transferred to the PPMUs for approval. Once approved, the PPMUs will make a disbursement request to EPF that will disburse the funding to VFAGs.

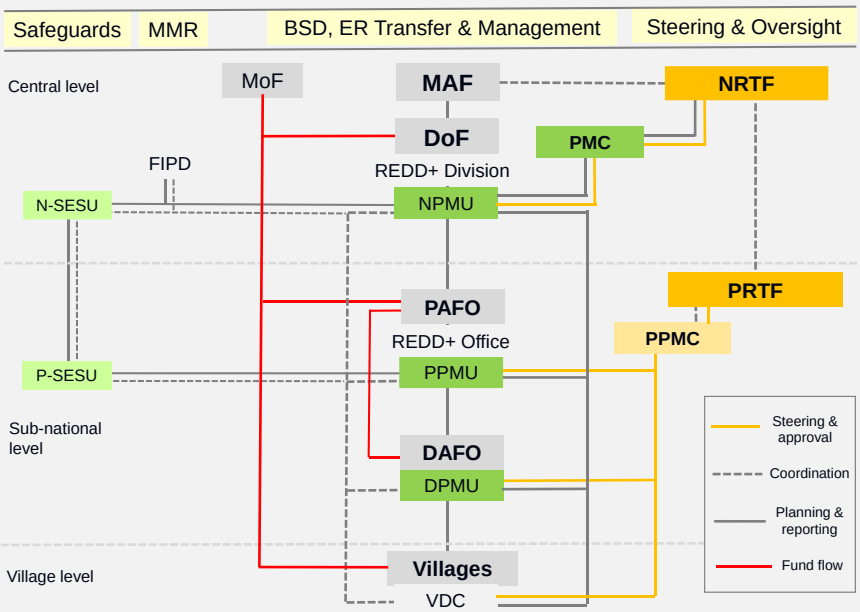
Output 3.2 NPA management plans are developed, and communities are enabled and actively engaged in implementing conservation agreements in NPAs that enable sustainable forest management and forest conservation

Activity 3.1.2: Implementation of benefit sharing plan for sustainable forest management (SFM) and forest landscape restoration (FLR)

Activity 3.1.2 Implementation of benefit sharing plan for sustainable forest management (SFM) and forest landscape restoration (FLR)	
Contribution to project output	GCF Projects 1 and 2 are the main investment projects contributing to the GoL's GFLL programme, which further provides the framework for the implementation of the Lao Emission Reduction Programme. As such, the GCF-financed Project 1 and Project 2 and the use of proceeds from FCPF-Emission Reduction Payment Agreement and implementation of the benefit sharing plan are closely aligned (see institutions involved below). Activity 3.1.2 builds on the Lao ER-Programme (GFLL), the FCPF-ERPA and implementation of the associated approved BSP. Specifically, through implementation at the sub-national level, and with the consideration of lessons learnt from other projects, including CliPAD and ICBF, this activity will seek to apply a landscape approach that will aim to maximize land use potential and ecosystem services. The Programme targets implementing and scaling up forest landscape restoration and management on at least 70,000 hectares, through assisted natural forest regeneration, plantation development and agroforestry systems to enhance forest carbon stocks.

	The beneficiaries under the benefit sharing plan (BSP) include: • Government agencies (at all levels). • Rural forest-dependent communities, hereinafter named as communities. • Actors in pilot initiatives, which will include the private sector, non-profit associations, and research and education institutions. Through World Bank co-financing, this activity will sustain the implementation and results of activities under component 3 of GCF Project 2, with specific linkages to activities 1.2.1 on land use planning and 3.1.1 on the development and implementation of Village Forest Management Plans. As a contribution to the proposed GCF project, the World Bank will co-finance the following sub-activity: Sub-activity 3.1.2.1 – Operationalization of benefit sharing plan for SFM and FLR
Budget/ Co-finance	**Total Activity Cost: 6,021,400 EUR** ▪ GCF finance: 0 EUR ▪ Co-finance: EUR 6,021,400[118]
Sub-activity 3.1.2.1 Operationalization of benefit sharing plan for SFM and FLR	
Description	This sub-activity will focus on developing the enabling environment for scaling the implementation of SFM and FLR; support the implementation of village forest management; and supporting forest landscape models and sustainable forest plantations. Special focus will be placed on FLR and FLM, including with the objective of restoring degraded forests. The sub-activity should leverage and sustain the village forest management planning process and seek to establish relationships with private sector actors including for the development of commercial forestry activities. The sub-activity additionally seeks to strengthen tenure security of village land and forest resources, by maintaining and implementing VFM plans where they already exist and support their preparation and implementation in villages where VFMP have not already been developed The sub-activity will also focus on the development of capacities and training of government staff at sub-national level and of communities. Emphasis and focus will be placed on the development of capacities of vulnerable groups. Women will be actively involved in capacity development and investment-related decision-making procedures.
Baseline	In 2014 the GoL received a USD 3.6 million grant from the FCPF to implement the Readiness Proposal. In 2016 an additional USD 4.5 million was granted to complete Lao PDR's REDD+ readiness preparation until 2022. An ERPA for a volume of 8.4 million tCO_2eq (with a value of USD 42 million at a unit price of USD 5 per tCO_2eq) was signed between the GoL and the FCPF Carbon Fund in December 2020. The total amount of ER payments will depend on verified emission reductions against the FREL.

[118] Assumes ERs for the quantity in the contract volume are achieved. The allocation assumes that 50% of the "performance based" funds as defined in the BSP will be allocated to the implementation of agricultural activities.

	The GoL will receive an advance payment from the FCFP Carbon Fund of USD 3 million to cover the operational costs of all PMUs – national and provincial level - until the first payments for emissions reductions are received.
Deliverables	• Governmental staff are trained and are able to provide support in the planning, implementation & monitoring of FLR & SFM via participation in training sessions including workshops & on the job training. • Government staff, stakeholders & communities have strengthened capacities to effectively implement VFMP, FLR, and SFM • Sustainable management of natural forests and sustainable use of forest resources (incl. NTFPs) implemented on an additional 259,019 ha of land • At least 2 private sector companies are identified that invest into FLR per province
Justification	The FCPF ERPA implementation arrangements are integrated into existing government REDD+ structures and harmonized with I-GFLL (structures set for FP117). The implementation of the BSP will sustain the implementation of activities focused on promoting, developing, and implementing Participatory land Use planning and Village Forest Management Plans beyond the lifespan of GCF Project 2, promoted under activities 1.2.2 and 3.1.1. Longevity of supporting transitional shift to sustainable land use is critical to unlocking future results-based finance for ERs from REDD+
Institutions involved	The World Bank is responsible for providing oversight and supervision during the implementation of the FCPF ERPA according to its own internal directives and procedures – this includes the implementation of the BSP.  *Figure 36. Overall implementation mechanism of the FCPF-ERPA* Source: GFLL-ERPA, Project Operation Manual At the national level, MAF is the implementing agency (programme entity) for the FCPF-ERPA. The responsibility for steering and oversight lies within the existing REDD+ Taskforces at the national – the National REDD+ Taskforce –

and provincial – Provincial REDD+ Taskforce – levels. The day-to-day management of the FCPF-ERPA is the responsibility of the National Project Management Unit (NPMU) and the Provincial Project Management Units (PPMU) which are embedded into the REDD+ Division and REDD+ Offices in the provinces. Specific responsibilities for overseeing the implementation of the BSP lie within the DoF and the REDD+ division of the MAF.

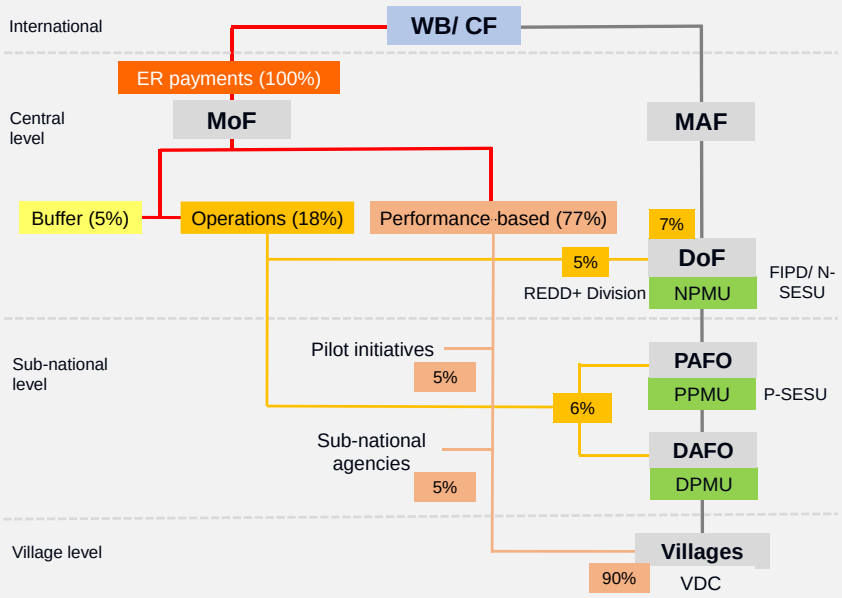


Figure 37. Benefit allocation to beneficiaries

Source: GFLL-ERPA, Project Operation Manual, p. 70

Specific actions have been undertaken to seek the convergence of the GCF funded Project 1 and the FCPF-ERPA to enhance their efficiency and effectiveness as both provide support to the Lao ER-Programme and contribute to achieving results against a coherent theory of change. These coordination actions will be continued under GCF Project 2 and include the use of "joint" implementation arrangements for steering and management.

Table 27: Convergence between GCF Project 1 and FCPF-ERPA

Features	FCPF-ERPA	I-GFLL
Governance, management & support		
Policy, steering and oversight	National & Provincial REDD Task Forces	
Technical advice	REDD Technical Working Groups	
Overall execution	Department of Forestry/ REDD Division	
Management & administration	Project Management Units (National, Provincial, District)	
Coordination	Joint regular meetings at all levels (RTFs, PMUs)	
Strategic action plans	Provincial REDD Action Plans	

Work plans & budgets	Coordinated Annual Work Plans/ Budgets, Separate Quarterly Work Plans/ Budgets	
Procurement	REDD+ Division/ DoF	Environmental Protection Fund
Reporting	World Bank specific	GIZ/ GCF specific
Technical assistance	National level	All levels
Operational		
Project area	Six northern provinces, priority districts (30) & communities (500-600)	
Interventions/ activities	Aligned to ERPD/ log-frame, complementary/ harmonized interventions	
Implementation agents	Communities, sub-national Government agencies/ technical teams, private sector	
Implementation of interventions	Harmonized/ complementary mechanisms & technologies, cost norms/allowances and benefits to communities	
Benefit Sharing		
Beneficiaries	Government, communities, private sector, institutions, NPAs	
Benefit distribution	REDD+Division/ DoF and MoF	Environmental Protection Fund
Measurement, Monitoring, Reporting & Verification		
Responsibility/ implementation	Forest Inventory and Planning Division	
Support & funding	F-REDD/ JICA, GFLL/ I-GFLL	
Safeguards		
Assessment	SESA	ESIA
Safeguard frameworks	ESMF	
	EGPF, RPF and PF	ESMP
Overall rsponsibility	PMUs/ SESUs	
Safeguard implementation/ reporting	SESUs	Hired safeguard staff
Gender	Gender Action Plan	
Design, Timing and Funding		
Programme design	Emission Reduction Project Document (ERPD)	Funding Proposal based on ERPD

Finance source	FCPF Carbon Fund	Green Climate Fund/ Germany
Timing/ duration	2020 – 2025, 6 years	2020-24 (Phase 1), 2022-26 (Phase 2), 6 years
Modality	Results-based payments	Grant
Budget	Up to USD 42 million	Phase 1: USD 18 million (GCF)/ USD 6 million (Germany)

Source: GFLL-ERPA, Project Operation Manual, p.107

Activity 3.2.1: National Protected Area (NPA) management

Activity 3.2.1: National Protected Area (NPA) management	
Contribution to project output	Implementation and financing of NPA management plans within the NPAs will address the core barrier that there are insufficient resources (financial, technical and administrative) to support the effective implementation of management plans (ER-PD, 2018; IUCN, 2011). This is particularly relevant since these forest areas contain the largest remaining high-carbon-stock forests, which are particularly at risk of deforestation and forest degradation. Project 1, specifically, focused on supporting 2 NPAs and 1 National Park: Nam Sam NPA and Nam Et Phou Louey National Park in Houaphan province and Nam Pouy NPA in Sayabouri province. They span 12 districts, all of which have been supported under Project 1. These NPAs cover 672,000 ha, of which approximately 96% of this protected area is classified as forest. Project 1 resulted in the following advances: ▪ Identification and mapping of villages with conservation forest areas (ensuring they are marked on Provincial maps). This resulted in the identification and mapping of 37 villages located inside or adjacent to NPAs in Project 1 districts (i.e. guardian villages). ▪ Development of guidance and templates for Village Forest Conservation Agreements (VilFoCA) ▪ Revision of management plans of 2 NPAs and 1 national park, and establishment of agreements on potential activities. ▪ Convening of stakeholders to structure processes for law enforcement and governance for protected areas with Project 1. Based on the successful approach from ICBF, [119] applied under GCF Project 1, and the experiences and lessons learned from the World Bank LENS II project, among others, [120] activity 3.2.1 will continue to support NPAs and national parks (NPs) supported under Project 1, as well as three additional NPAs:

[119] This project supports the "effective management of 2 target landscapes comprising NPAs and corridors contributing to sustaining biodiversity in forest ecosystems, while supporting livelihoods of forest-dependent communities" (Braeutigam, 2015).Prior to its implementation, extensive Pre-Feasibility and Feasibility Studies were conducted (2012-2015, implementation until 2022), which informed the design of the overall GCF Programme as well as Project 2. The ICBF team has been consulted during the development of Project 1 and 2, and lessons learned have been reflected in the project design.

[120] The project further builds on initiatives related to NPA management in Houaphan province (e.g. Wildlife Conservation Society, World Bank supported measures in Nam et Phou Louey NPA, and USAID, SNV and WB supported work in Nam Sam NPA.

	• Project 1, specifically, focused on supporting 2 NPAs and 1 National Park: Nam Sam NPA and Nam Et Phou Louey National Park in Houaphan province and Nam Pouy NPA in Sayabouri province. They span 12 districts, all of which have been supported under Project 1. These NPAs cover 672,200 ha, of which approximately 96% of this protected area is classified as forest. • Project 2 area contains 3 National Protected Areas (NPAs) – Nam Ha in Luang Namtha, Nam Kan in Bokeo province and Phou Hi Phi in Oudomxay province. They span 12 districts, which have all deliberately been selected for GCF project implementation. In total, these 3 NPAs cover an area of 367,150 ha. In particular, activity 3.2.1 will support adaptation mainstreaming within NPA planning and management (Sub-Activity 3.2.1.1), the revision of management plans for NPAs, scaling up participatory and cooperative processes for law enforcement and governance of NPAs (including community-based enforcement and monitoring facilitate through law enforcement action plans, Sub-Activity 3.2.1.2), identification and mapping of villages within and adjacent to NPAs, and the participatory development and implementation of village forest conservation agreements (VilFoCA) in 'g*uardian villages*' (Sub-activities 3.2.1.3 and 3.2.1.4). Such sub-activities and related processes will build on the harmonized implementation approaches developed under Project 1, considering lessons learned and best practices from the aforementioned projects. Together, these efforts will reduce deforestation and forest degradation, strengthen the resilience of forest ecosystems against climate change, provide additional incentives for conservation, and strengthen local livelihoods of forest dependent men and women living in and adjacent to NPAs. Financing for this activity will be provided from the Climate Change Funding Window to government entities and to villages. Government entities will be supported by the Province, District and National Management Units (PPMUs, DPMUs and NPMUs) in their annual work planning and budgeting. Work plans and budgets will be submitted to the EPF, and approved funds will then be disbursed in accordance with the Climate Change Funding Window Operations Manual (OM).
Budget/ co-finance	▪ **Total Activity Cost: 4,217,657 EUR** ▪ GCF Finance: 2,252,057 EUR ▪ Co-Finance: 1,965,600 EUR
Sub-activity 3.2.1.1: Capacity building on climate change adaptation and NPA management	
Description	This sub-activity will support climate change adaptation mainstreaming within NPA management approaches in Lao PDR. It will include the development of supporting materials and revised guidelines to facilitate the integration of climate-information and best practices for strengthening the resilience of forest ecosystems into NPA management plans and VilFoCA (building on PLUP under Activity 1.2.2), and training provincial and district staff on revised guidance, climate-informed NPA planning, and best practices for strengthening resilience through the implementation of SFM and FLR.
Baseline	While many of the activities supported through the implementation of NPA management plans and VilFoCA have climate change adaptation benefits (e.g. restoration of riparian zones that strengthens flood protection and reduces erosion and sedimentation, promotion of agroforestry in degraded areas, forest restoration activities, and the implementation of forest fire prevention

	measures such as fire breaks, among others), climate change adaptation is not explicitly considered within guidelines.
Deliverables	▪ Supporting materials and revised guidelines that facilitate the mainstreaming and implementation of climate change adaptation measures within NPA management developed and disseminated. ▪ Government staff at the provincial and district levels trained on climate-informed NPA planning and best practices for strengthening climate resilience through the implementation of VilFoCA
Justification	In line with the NDC and (draft) Climate Change Strategy, it is recommended to strengthen these guidelines and develop additional support documents to facilitate the intentional consideration of climate-risk and vulnerability within NPA and VilFoCA planning processes and ultimately the implementation of measures that strengthen the resilience of forest ecosystems and the local forest-dependent communities. Such a process will need to be accompanied by capacity development of provincial and district government staff, so they are able to facilitate climate-informed and -resilient NPA management.
Institutions involved	▪ The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. ▪ Provincial and district level staff in PAFO and DAFO will be trained on climate change adaptation, including the revised guidelines and materials, and best practices for strengthening resilience through NPA management. ▪ GIZ as EE will hire and oversee consultants supporting climate change adaptation mainstreaming.
Sub-Activity 3.2.1.2 Improved law enforcement in NPA conservation landscape	
Description	The 6 NPAs in the project area have NPA Management Plans that are valid until 2025. The project will support the revision of these plans for the next 5-year planning period. The revision of these management plans will build on the climate-informed land use plans developed under Activity 1.2.2, and will ensure adaptation is mainstreamed throughout the plan (building on guidance and capacity building provided under Sub-Activity 3.2.1.1).[121] Revised management plans will consider: ▪ Assessment of climate risks and vulnerability for the NPA, and development of recommendations to strengthen the resilience of local ecosystems and forest-dependent communities within to climate change. These assessments will take into consideration upstream and downstream land use dynamics, and potential nature-based solutions to strengthen ecosystem services such as riparian zone protection and stabilization (e.g. reforesting degraded riparian zones, gully control, riverbank stabilization, among others).[122] ▪ Assessment of key forest areas and the quantification of current and potential threats as a key component to develop NAP management plans.

[121] The revision of NPA management plans will consider, among others: i) assessment of climate risks and vulnerability for the NPA, and development of recommendations to strengthen the resilience of local ecosystems and forest-dependent communities within to climate change. Such assessments will take into consideration upstream and downstream land use dynamics, and potential nature-based solutions to strengthen ecosystem services such as riparian zone protection and stabilization (e.g. reforesting degraded riparian zones, gully control, riverbank stabilization, among others); Assessment of key forest areas and the quantification of current and potential threats as a key component to develop NPA management plans; Zonation: Identification of suitable land use categories and climate-informed PLUP; Assessment and identification of alternative deforestation free and climate resilient livelihood opportunities for which villages will be eligible to receive village-level livelihood grants through village conservation contracts (linking NPA management to the VilFoCA process).

[122] This is an additional measure included under Project 2 to strengthen the resilience of forest ecosystems and forest-dependent livelihoods.

- Zonation: Identification of suitable land use categories and climate informed PLUP
- Assessment and identification of alternative deforestation-free and climate-resilient livelihood opportunities for which villages will be eligible to receive village-level livelihood grants through village conservation contracts
- Awareness-raising and establishment of co-management agreements with villages inside or adjacent to the NPA in NPAs where this has not already been done. Voluntary co-management agreements (village conservation contracts) will be based on a participatory process applying FPIC principles. Such awareness raising will be expanded to raise awareness on climate change risks and resilience building, linked with best practices for reducing deforestation and promoting sustainable land management.

In addition, this sub-activity will strengthen law enforcement in NPAs and National Parks. Specifically, it will include:

- Development and implementation of Law Enforcement Action Plans (LEAPs) for 5 NPAs, [123] supporting regular monitoring and enforcement of management plans, where high-risk areas will be targeted by PAFO staff.[124] LEAPs will be developed by the project in a participatory and inclusive manner, aligned with NPA management plans, to facilitate coordinated law enforcement by the government with local communities located within and adjacent to NPAs. This builds on the approach used under Project 1, which was found to be effective.
- Investments in law enforcement tools, including patrolling equipment, in line with the needs identified in the LEAPs.
- Development and implementation of a biodiversity monitoring strategy aimed at evaluating the effectiveness of NPA management actions.
- Implementation of SMART law enforcement data management system to standardize the monitoring of enforcement efforts, threats and results over all NPA's.
- Capacity development for NPA and DOFI staff, support for strengthening inter-agency cooperation, and provision of equipment to support improved monitoring and enforcement.
- Village engagement by PPMUs and DAFO staff within guardian villages.

Baseline

Revision of National Protected Area (NPA) and National Park (NP) Management Plans

The following table provides an overview of NPAs and NPs covered under Projects 1 and 2. Three areas are supported under both projects simultaneously, three are supported newly under Project 2. The table gives information about the location, size, baseline status and support status under Project 2 for each area. Management plans exist for all areas until 2025, when all 6 management plans are set to expire. VilFoCA do not exist in the 3 'newly added' NPAs under Project 2.

Table 28: Overview of NPAs and national parks supported under Project 1 and 2

Name (location)	Area (ha)	Baseline Status	Support under Project 2
Supported under Project 1 and 2			

[123] Nam et Phou Louey National Park (Houaphan, Luang Prabang, Xiengkhouang) already has a LEAP that is operational. Lessons learned and best practices from the development and implementation of this LEAP will be considered when developing the plans in the other 5 NPAs in the project area.

[124] Under Project 1 it was noted that each NPA has their own approach, thus Project 2 will also focus efforts to reflect on lessons learned from each NPA, and develop a harmonized approach.

Nam Sam NPA (Houaphan)	70,000	Management plan valid until 2025 ▪ 4 VilFoCA signed	▪ Continued support for the implementation of VilFoCA
Nam et Phou Louey National Park (Houaphan, Luang Prabang, Xiengkhouang)	411,000	Management plan valid until 2025 ▪ 23 VilFoCA signed	▪ Continued support for the implementation of VilFoCA
Nam Pouy NPA (Sayabouri)	191,200	Management plan valid until 2025 ▪ 14 VilFoCA signed	▪ Continued support for the implementation of VilFoCA
Supported under Project 2			
Phou Hi Phi (Oudomxay)	87,350	Management plan valid until 2025	▪ Identification & mapping of villages within or adjacent to the NPA ▪ Participatory development and implementation of VilFoCA
Nam Ha NPA (Luang Namtha)	222,400	Management plan valid until 2025	▪ Identification & mapping of villages within or adjacent to the NPA ▪ Participatory development and implementation of VilFoCA
Nam Khan NPA (Luang Namtha, Bokeo)	57,400	Management plan valid until 2025	▪ Identification & mapping of villages within or adjacent to the NPA ▪ Participatory development and implementation of VilFoCA

Phou Hi Phi NPA is located in Oudomxay Province. It holds valuable habitat for IUCN red listed species such as tigers, bears and elephants. Furthermore, it is home to a large number of sino-himalay and riverine bird species.

The **Nam-Et Phou Louey National Park (NP)** in **Houaphan province**, stretching **into Luang Prabang** province comprises the highest biological diversity among protected areas in the Northern region (Johnson et al. 2009 in Houaphan PRAP), and is particularly renowned for its distinctive montane bird population. It is the largest protected area in Lao PDR. Until recently, the NP harboured one of the most important tiger populations remaining in Indochina and lies within the second most important core area in the world for supporting small carnivore taxa of conservation concern. At least 17 globally threatened bird species and 20 mammal species have been recorded in the NP.

Nam Sam NPA, located in Houaphan Province, still retains much of its rich biodiversity and is home to the white-cheeked gibbon, bears, langurs, sambar, hornbill, pheasants, and numerous other rare wildlife species.

Nam Ha NPA s located in Luang Namtha Province and is home to over 33 species of mammals, 288 species of birds (Nam Ha NPA 2015 in Luang Namtha PRAP). Nam Ha has among the highest species richness for birds among all ecoregions in the Indo-Pacific realm (Rao et al. 2008).

Nam Khan NPA (57,400 ha) is partly located in Luang Namtha and Bokeo Provinces. It is home to over 22 endangered species in the IUCN Red List.

Sayabouri province hosts the **Nam Pouy NPA**. Nam Pouy is home to 52 species of mammals, 98 bird species, 13 species of reptiles, 3 amphibian species, 15 fish species and diverse other mollusks, crustaceans and insects, representing an important hub of biodiversity in the country (Moore et al. 2011 in Sayabouri PRAP)

Phou Hi Phi NPA is located in Oudomxay Province. It includes habitat for IUCN red listed species such as tigers, bears, elephants and deer have been reported. The area is also home to Sino-Himalayan and riverine bird species. Oudomxay also hosts the Upper Lao Mekong Important Bird Area stretching into the neighbouring provinces of Bokeo. The area has bird species including, Rufous-necked Hornbill, Black-bellied Tern Sterna acuticauda, River Lapwing, Plain Martin *Riparia paludicola*, River Lapwing, Small *Pratincole Glareola lactea*, and Swan Goose *Anser cygnoides* are some of the recorded avifauna (Ministry of Information, Culture and Tourism 2014 and MPWT et al. 2016 in Oudomxay PRAP).

Law enforcement and monitoring in NPAs:

The implementation of NPA management plans ensures, among other factors, that support is provided to strengthen law enforcement in NPA conservation landscape, including community-based enforcement and monitoring into the NPA management plans.

Concerning the biodiversity monitoring strategy, there is the national biodiversity strategy, which is in action from 2016 until 2025, which includes protected area management and has indicators that control reduced occurrence of forest fires, deforestation, destruction of natural forests and illegal extraction. In addition to national and sectoral policies and plans, the Land Law 04/NA 2003 and the Forestry Law (No.06/NA, 2007) are important laws.

The Department of Forestry Inspection DOFI is responsible for the inspection and law enforcement of forest and wildlife laws and regulations. It allows technical support and capacity building to the Provincial line agency POFI for provincial-level law enforcement of forest and wildlife laws and regulation in support of the PRAP. The NPA management office is instructed to work with concerned district partners, under the decree on PA No. 134/G. Article 28 defines that the law enforcement team should integrate the deputy director of the NPA, the senior enforcement staff and heads of patrol team, as well as district agency partners such as DOFI, Police, Army and Justice (Source: Security Risk Assessment: Assessing and Managing Potential Risks and Impacts of Security Personnel in implementing the Lao Landscapes and Livelihoods project (P 170559)).

- Lao PDR has begun developing Law Enforcement Action Plans (LEAP) to reduce Deforestation and forest degradation. Within the project area, so far one LEAP has been developed by CliPAD, Wildlife Conservation Society (WCS) and counterparts in Houaphan Province. The LEAP incorporates rapid response teams with personnel from different law

	enforcement agencies on provincial and district level. Other NPAs in the project area are in need of LEAPs to support their law enforcement efforts. ▪ Barriers to law enforcement are weak coherence between policies and cross sectoral coordination, differentiated awareness of policies and insufficient mainstreaming of REDD+ and measures to safeguard forest resources. Furthermore, departments are understaffed and under equipped (Limited vehicles and budget to travel to field, some departments do not have GPS equipment, limited knowledge of GIS and the potential for free software to inform enforcement and monitoring). There is also a lack of incentives to safeguard forest resources and insufficient law enforcement and forest governance leading to illegal clearing of forested lands. The approach under Project 1 was found to be largely effective. Project 2 will support the scaling up of activities to 3 additional NPAs, and continued provision of technical support for forest law enforcement and NPAs in the 2 NPAs and 1 NP covered by Project 1.
Deliverables	▪ 5 NPAs and 1 NP management plans revised to extend beyond 2025 ▪ LEAPs developed in 5 NPAs through participatory processes ▪ LEAPs under implementation in 5 NPs and 1 NPA ▪ Biodiversity monitoring strategy aimed at evaluating the effectiveness of NPA management actions developed ▪ SMART law enforcement data management system implemented to standardize the monitoring of enforcement efforts, threats and results over all NPA's.
Justification	Outdated or lack of management plans, result in the "…*absence of clear benchmarks and standards upon which systematic actions can be based*", which further promotes deforestation and forest degradation within the NPAs, which are key areas often comprised of high carbon forest stock. Outdated management plans cause poor governance and a lack of technical or financial resources and capacities that further limits the implementation of sustainable activities as well as the monitoring of environmental and social impacts. Previous experiences, such as the ones in Nam Ha and Nam Khan, which both have been supported by the KfW's ICBF project or various projects in the Houaphan province will help in revising and strengthening existing management plans, facilitating their extension beyond 2025. NPAs with implemented management plans will receive continued support in the implementation of sustainable activities as well as in monitoring and enforcement of plans. This is particularly relevant considering majority of the NPAs have only abolished management plans within the last 5 years and are thus still learning how to best develop (including through participatory and inclusive approaches), implement and monitor NPA plans. Insufficient forest law enforcement and monitoring, and the need for building both government and community capacities on community-based enforcement and monitoring. Thus, targeted support is needed to strengthen improved law enforcement and monitoring in NPA conservation landscapes. The approach supported by the project considers the important role of local communities and relationship building between government authorities and local communities to ensure joint efforts towards forest monitoring and law enforcement.
Institutions involved	▪ GIZ as EE will hire and oversee consultants supporting LEAP development, the biodiversity monitoring strategy and SMART law enforcement data management system.

	▪ The NPMU, and by extension GIZ as the EE responsible for the NPMU, will have the operational responsibility for the GCF funding. One of its core tasks is the management and provision of financing to the implementation partners, following the project operations manual. ▪ DOF, PAFO and DAFO to support NPA management plan revision, in close cooperation with local villagers ▪ POFI and DOFI will be responsible for the monitoring and evaluation of the activities and ensure compliance with management plans, in line with the LEAPs developed for each NPA and NP.
Sub-activity 3.2.1.3: Development of new and amendment of existing village forest conservation agreements (VilFoCA)	
Description	This sub-activity will support the development of new and amendment of existing VilFoCA for villages within or adjacent to NPAs. These agreements will enable villages to access village-based grants for a set of eligible agricultural and forestry activities that support villages' livelihoods and forest protection. The VilFoCA development process will follow guidelines developed by the ICBF project, which are based on a participatory process applying FPIC, and will be coherent with approved NPA management plans. VilFoCA development will also involve awareness raising on climate change and related risks and considerations for resilience building, linked with best practices for reducing deforestation and promoting sustainable land management to strengthen resilience and enhance livelihoods.
Baseline	▪ In areas with management plans, insufficient support in terms of lacking technical and financial resources and capacities as well as in terms of poor management prevents the locals from investing into sustainable management. ▪ KfW pioneered an approach through their Integrated Conservation and Biodiversity (ICBF) project to support 'guardian villages' to develop and implement VilFoCA. It has a total budget of 17.1 million Euros and is being implemented between 2015-2022. Prior to its implementation, extensive pre-feasibility and feasibility studies were conducted that informed the design of the project. Within the six target NPAs, ICBF is active in the Nam Ha and Nam Khan NPAs and corridors (Bokeo and Luang Namtha); however, the programme includes suitable measures that will be scaled-up by the GCF programme to cover NPAs in the programme area. ▪ In Houaphan, experiences in strengthening NPA management will also build on experiences from Nam Et Phou Louey NPA (WCS[125]; World Bank[126]) and Nam Sam NPA (USAID and SNV)[127]. ▪ Project 1 supported the implementation of sustainable management activities with villages within and adjacent to in 3 NPAs in Houaphan, Sayabouri and Luang Prabang. So far, 37 villages have been identified and mapped inside or adjacent to these 3 NPAs.

[125] More information on WCS activities within this protected area are available online: https://laos.wcs.org/Saving-Wild-Places/Nam-Et-Phou-Louey-NPA.aspx

[126] Protected Area and Wildlife Project: http://documents.worldbank.org/curated/en/862811468266173148/pdf/IPP6840V20REV000Box382157B00PUBLIC0.pdf and http://documents.worldbank.org/curated/en/710021468278697087/pdf/PAD2430P128393010Box382156B00OUO090.pdf ; Developing and Demonstrating Replicable Protected Area Management Models at Nam-et-Phou Louey National Protected Area Project (NEPL Project): http://pubdocs.worldbank.org/en/296761446543710814/pdf/Lao-NEPL-AM-ISM-May-2015-pdf.pdf

[127] newgenerationplantations.org/multimedia/file/574d9156-8098-11e6-ab1e-005056986313

	▪ In addition, 41 VilFoCA have been signed in the project area by development partners (KfW), including: 4 in Nam Sam NPA, 23 in Nam et Phou Louey NP, and 14 in Nam Pouy NPA. ▪ There are currently no VilFoCA developed in in Phou Hi Phi, Nam Ha NPA and Nam Kan NPA. ▪ This approach applied in the ICBF project and Project 1 has been found to be effective, and will be replicated and scaled up under Project 2. **Addressing key barriers:** The project will continue where Project 1 and ICBF left off, and will continue to support the implementation of the management plan from 2022 until project-end. The Activity addresses the principal barriers to ensure the sustainable management of NPAs and prevent the increase of deforestation and forest degradation in NPA – lack of funding and weak capacities (ER-PD, 2018; IUCN, 2011). DoF has also recommended that at least 15 staff are present in each NPA; however, due to limited budgets, this is rarely realized (IUCN, 2011). Poor management and lack of technical and financial resources and capacities also limits the implementation monitoring of environmental and social impacts. This activity is closely linked with Activity 1.1.1 (sustainable financing), which will identify additional financing streams and improve the channelling of finance for climate action with clear biodiversity benefits. This will help promote the long-term sustainability of the measures. Trainings in the past have been highly limited and only prevalent in NPAs supported by donor projects, and there is a need to build capacities of both provincial- and district-level officials, as well as villagers living within and adjacent to NPAs (IUCN, 2011). Through VilFoCA villagers will be able to access village-based grants for a set of eligible agricultural and forestry activities that support villagers' livelihoods and forest protection. Guidelines developed by KfW´s ICBF programme will be followed (Village fund disbursement/management guideline), which permits activities such as the following (KfW, 2017): ▪ Natural and enhanced forest restoration processes to support biodiversity ▪ Improved forest use through bamboo management for income generation ▪ Agroforestry for food security and income generation ▪ Non-timber forest products for income generation and biodiversity benefits These grants will reduce the pressure on deforestation and reliance of unsustainable forest use and will improve people household incomes. It was considered to create additional NPAs or wildlife corridors in the project. However, given the current level of existing NPAs, improving the management of these areas is clearly the priority. Many of these areas have their first management plan, and thus are generating early experiences in operationalizing them. If management is successfully improved, creating new NPAs and improving connectivity will be considered in subsequent projects.
Deliverables	▪ VilFoCA established with an additional 99 villages (140 VilFoCA in total by the end of Project 2 including the baseline).
Justification	VilFoCA development (under this sub-activity) and implementation (under sub-activity 3.2.1.4) will facilitate local villagers, living within and adjacent to NPAs and NPs, to invest in climate-resilient and deforestation-free sustainable land management. The development of VilFoCA will follow guidelines developed by

	KfW and the GCF Project Operations Manual (FP Annex 21), and will ensure FPIC. VilFoCA will be informed by climate-informed LUPs developed under Activity 1.2.2, and the latest NPA and NP management plans.
Institutions involved	Financing for this activity will be provided from the Climate Change Funding Window to government entities and to villages. Government entities will be supported by PPMUs in their annual work planning and budgeting. Work plans and budgets will be submitted to the NPMU, and approved funds will then be disbursed by the EPF in accordance with the Climate Change Funding Window Operational Manual (OM). ▪ The implementation of this sub-activity will be closely supported by the NPMU at the national level with support from the PPMUs. PPMUs will also provide technical inputs, budgeting and planning support and continuous capacity building support during the implementation of the activities. ▪ Participating village households, in close collaboration with DAFO, will implement the activities as outlined in VilFoCA. ▪ District Governors for official approval.
Sub-activity 3.2.1.4: Implementation of VilFoCA (sustainable land use, forest conservation and management)	
Description	This sub-activity will facilitate the implementation of VilFoCA developed under the previous sub-activity. Technical and financial support will be provided to implement sustainable land use activities that are aligned with the VilFoCA and NPA management plans. Guidelines developed by the ICBF project will be followed, which permit activities such as the following (KFW, 2017): ▪ Natural and enhanced forest restoration. ▪ Improved forest use through bamboo management for income generation. ▪ Agroforestry for food security and income generation. ▪ Non-timber forest products for income generation. ▪ Aquatic conservation zones for livelihood benefits. Grants used for the implementation of VilFoCA will reduce the pressure on deforestation and reliance of unsustainable forest use, and will improve household incomes. The application process is described in the Climate Change Funding Window Operations Manual (Annex 21).
Baseline	See Sub-Activity 3.2.1.4 for the baseline for VilFoCA.
Deliverables	▪ 140 VilFoCA under implementation in 5 NPAs and 1 NP in the project area
Justification	In areas with valid management plans, there is insufficient support in terms of lacking technical and financial resources and capacities as well as in terms of poor management prevents the locals from investing into sustainable management. Thus, Project 2 will help address this barrier by channeling funds to local villages to implement voluntary VilFoCA, in line with NPA and NP management plans. Project 2 will continue the support to the 41 villages with VilFoCA previously supported by KfW, in addition to the additional 99 VilFoCA developed in sub-activity 3.2.1.3.This includes scaling up VilFoCA to the 3 NPAs without any existing VilFoCA.
Institutions involved	Financing for this activity will be provided from the Climate Change Funding Window to government entities and to villages. Government entities will be supported by PPMUs in their annual work planning and budgeting. Work plans and budgets will be submitted to the NPMU, and approved funds will then be disbursed by the EPF in accordance with the Climate Change Funding Window Operational Manual (OM). ▪ The implementation of this sub-activity will be closely supported by the NPMU at the national level with support from the PPMUs. PPMUs will also

	provide technical inputs, budgeting and planning support and continuous capacity building support during the implementation of the activities. ▪ Participating village households, in close collaboration with DAFO, will implement the activities as outlined in VilFoCA. ▪ POFI and DOFI will be responsible for the monitoring and evaluation of the activities and ensure compliance with management plans, in line with the LEAPs developed for each NPA and NP.

6.7 Project Locations and Target Area Selection

The location of the entire Programme is identical to the FCPF Carbon Fund project area. The programme will be implemented in six Northern provinces of Lao PDR: Bokeo, Houaphan, Luang Namtha, Luang Prabang, Oudomxay and Sayabouri. Of the 51 districts in the six provinces, 29 were selected for GCF programme support. Of the 29 provinces, 17 provinces were supported under Project 1. Project 2 will focus on 12 new provinces not covered by Project 1. The process used for the Programme target area selection (informing Projects 1 and 2) is included below.

6.7.1 Selection approach of the target programme districts

For the selection of districts, a set of criteria was developed. The selection process combined quantitative and qualitative parameters as described below.

Quantitative criteria framework: The framework is based on the assessment of the remaining high-carbon forest128 area and observed recent deforestation patterns. The remaining forest area with high carbon stocks has the highest GHG mitigation potential compared to already-deforested areas.

A district-level remote sensing analysis was conducted based on the same dataset as was used to develop the Reference Level for the FCPF ER-Programme (Forest Type Maps (FTM) 2015). The dataset was complemented by the Hansen tree cover loss 2017 dataset and the forest degradation-related Canopy Disturbance Delta NBR (2017) dataset for 2015-2017. (See Annex 2i for detailed description).

The analysis was carried out at the district level by assessing the remaining high-carbon-stock forest area in the districts and the observed forest area losses from 2015-2017. Forest area loss of the high-carbon-stock forest areas indicates current deforestation hotspots. Three parameters were considered and scored according to a points system (see Table 29 below). Each district was scored overall by calculating an average score. The higher the score, the higher the priority for selection and GCF programme intervention. (The scoring and selection are available as an Excel file – "2018-12-28-Area Deforestation Activity Selection").

Table 29: Quantitative GCF programme area district selection framework

Remaining high-carbon-stock forest area (in ha)		Total absolute high-carbon-stock deforestation area (in ha)		Average annual deforestation area in %	
% high-carbon-stock forest area of	**Score**	**Total absolute deforestation thresholds (in ha)**	**Score**	**Average annual deforestation % (2015-2017)**	**Score**

[128] High carbon stock area determination is based on the land/forest classes classification and emission factor database: See Table 5 (Section 1.3.1) defined as evergreen forest (EG), mixed deciduous forest (MD), coniferous forest, mixed coniferous and broadleaved forest (MCB) and dry dipterocarp forest (DD). All have a carbon stock higher than 400 tCO_2/ha

total district area					
< 30%	0	< 1000 ha	0	> 0.25%	0
30.1-40%	1	1001 - 2500 ha	1	0.251 - 0.5%	1
40.1-50%	2	2501 - 4000 ha	2	0.501 - 1%	2
50.1-60%	3	4001 - 5500 ha	3	1.01-1.5%	3
60.1-70%	4	5501 - 7000 ha	4	1.501 - 2%	4
>70%	5	> 7001 ha	5	> 2%	5

Qualitative criteria framework: In addition to the quantitative framework, additional parameters were taken into consideration in the selected target districts:

- **ADB-financed "Sustainable Rural Infrastructure Watershed Management Sector Project" districts:** All districts that will be targeted by the co-financing partner ADB with its irrigation project (Activity 2.1.3) were selected as priority districts. While the ADB project will focus on agricultural irrigation intervention, the GCF programme will invest in watershed forest management in affected areas. In total, 8 districts overlap with the GCF programme.
- **National Protected Areas:** Districts in which an NPA (or part of an NPA) is present are automatically included in the selection of the target districts. These districts normally have a large share of remaining undisturbed forests, while the deforestation pressure may not be as high. It can be anticipated that in the mid-term the pressure is likely to increase.
- **Forested landscape connectivity:** This factor looks at the six provinces and aims to maintain connectivity between the remaining high-carbon-stock forest landscapes. Thus, districts that did not meet the quantities assessment thresholds, but which have a connectivity function for forested landscapes were included in the target district selection. A list of the selected districts is summarized in the Table 30 and Map below.

Table 30: Selected priority districts for the proposed GCF programme (29 out of 51 districts)

Bokeo	Houaphan	Luang Namtha	Luang Prabang	Oudomxay	Sayabouri
Pha Oudom	Xone	Namtha	XiengNgeun	NaMo	Sayabouri
Paktha	Hiem	Long	Viengkham	Xai	Hongsa
Meung	Xam Neua	Viengphoukha	Phonxay	Nga	Phiang
Houayxai	Houameuang	Nalae	Nan	Beng	Phaklai
	Viengxay		Phonthong		Thongmixay
	Xam Tai				
	Sopbao[129]				

The selected 29 districts cover 72% of the remaining high-carbon-stock area in the six target provinces (3.1 million ha out of 4.3 million ha).

[129] Protected forest management and watershed protection will be implemented only in ADB project (Activity 2.2) connected project locations.

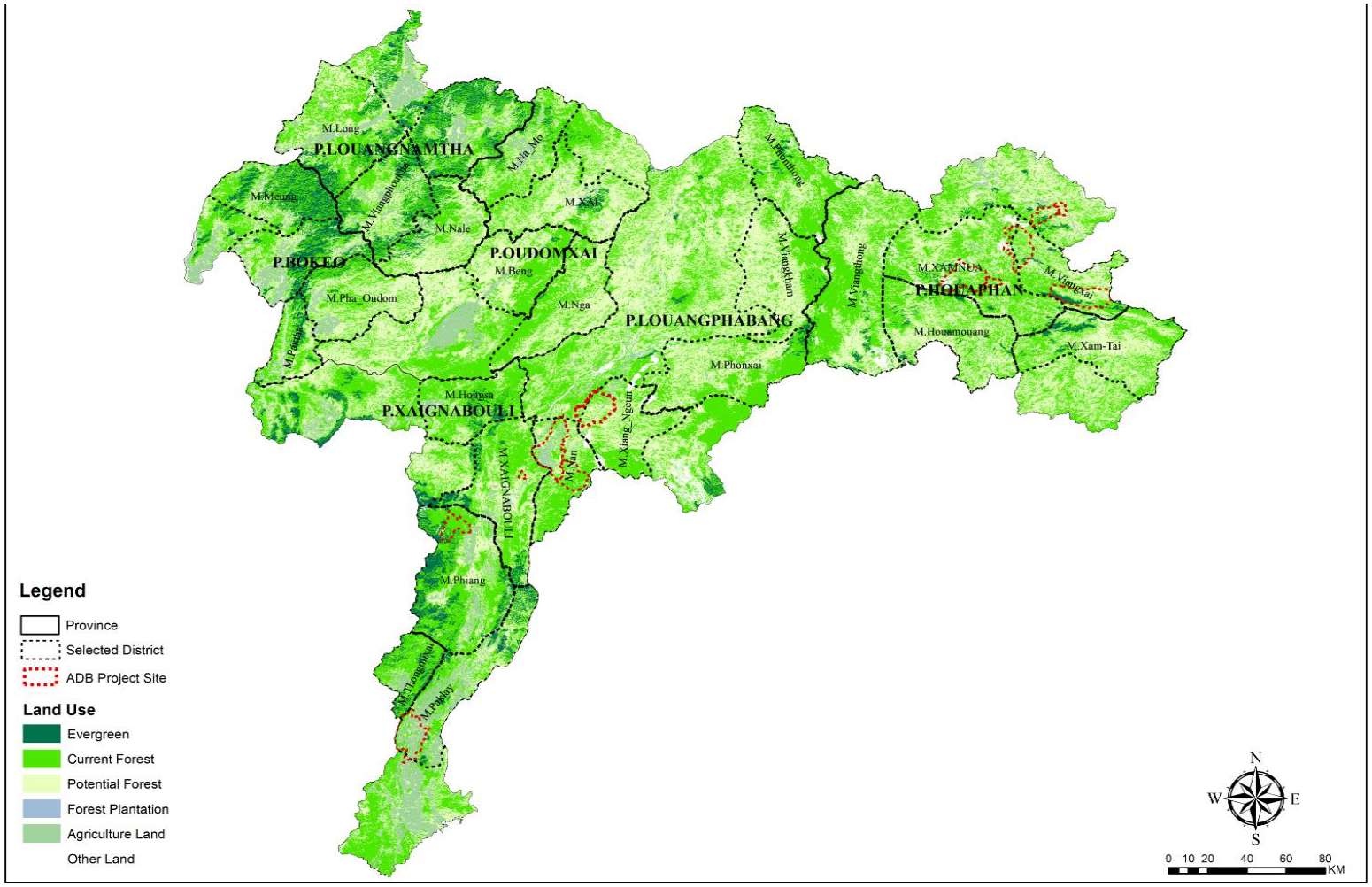


Figure 38. Selected GCF programme district and ADB Sustainable Rural Infrastructure Watershed Management Sector Project sites

6.7.2 Selection of target villages for GCF investment

For each selected district, a deforestation risk assessment was conducted to prioritize GCF investments and to ensure the highest possible impact. The risk assessment estimates the probability of deforestation and forest degradation of agricultural expansion in the selected districts (see Annex 16). Factors such as elevation data, distance to roads and current land use classes were considered in classifying the risk.

Two district-level maps were prepared for the selection of the target villages. All villages and risks are presented in a separate Excel sheet – "*Villages_Probability_Deforestation_Analysis*". One map shows the forest landscape and the national forest categories of each district (Figure 39 below).

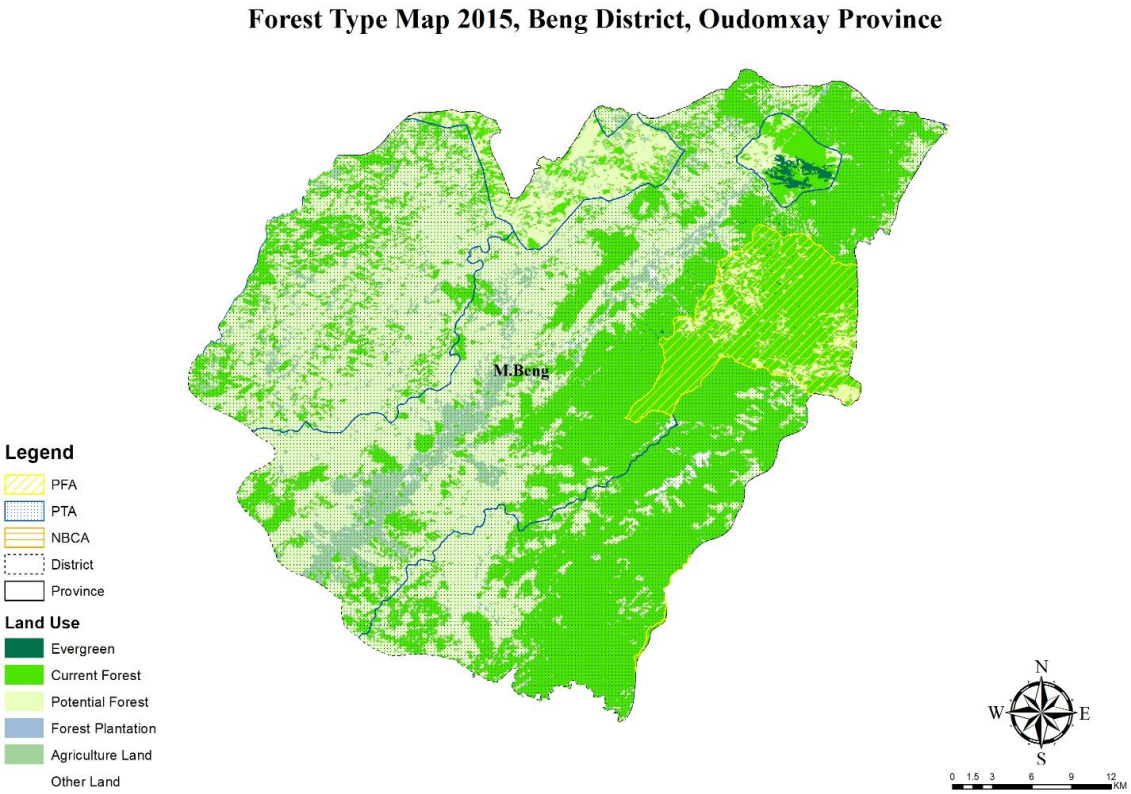


Figure 39. Forest landscape district map (2015), Beng district
Source: FIPD, 2018

The second map (Figure 40 below) displays the village names, the remaining forest area and the expected deforestation probability. Based on this map, villages with high forest cover share and high probability classification are identified as priorities for GCF programme targeting. Villages with lower high-carbon forest share (evergreen and current forest) have a lower priority for the GCF programme. The full set of maps for each selected district are presented in Annex 16.

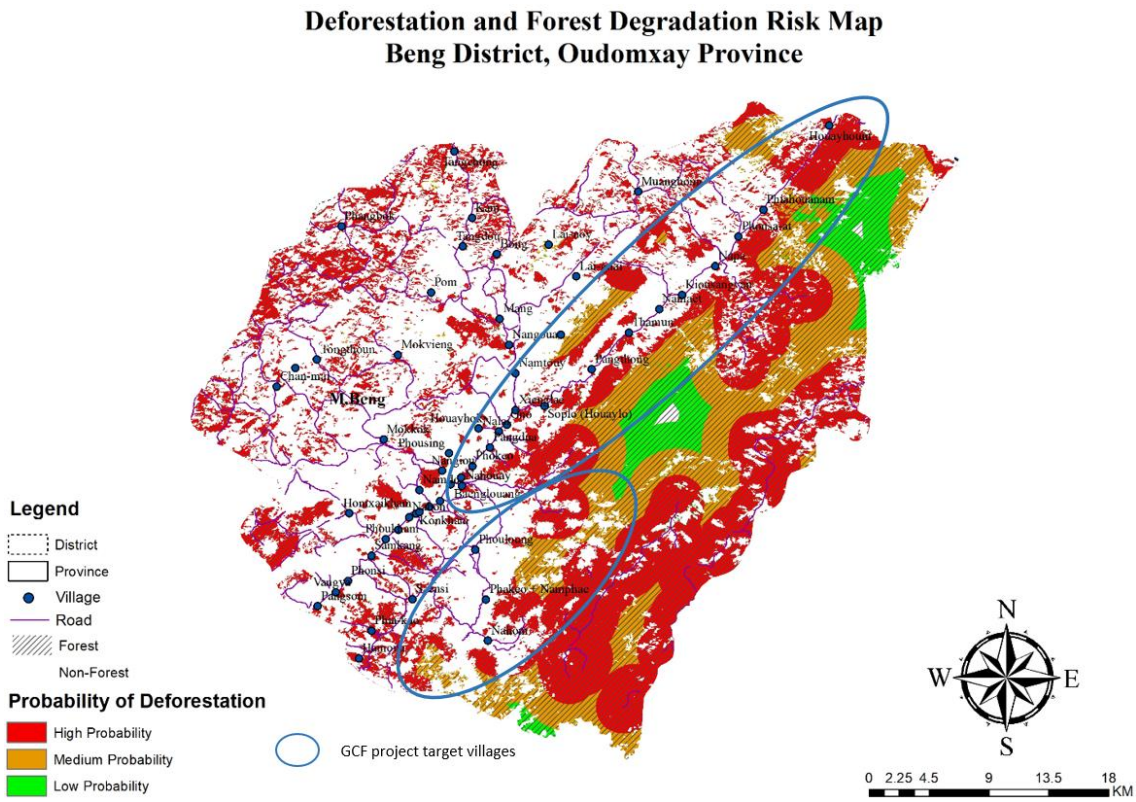


Figure 40. Deforestation probability analysis in Beng district and target village selection
Source: FIPD, 2018

Relative to the implementation of Project 1, there will be some adjustments in the criteria that will inform in the way in which target villages are selected. Essential and desired criteria have been developed. These adjustments in the criteria reflect lessons learnt during the implementation of Project 1. Should further adjustments be required during project implementation, they will be documented and justified.

Essential criteria include:

- Project Village should have an adequate forest area with existing nature forests (high forest cover share), potential for plantation forestry and/or regenerating fallow land as well as high deforestation probability (in average > 700 ha village)
- Priority to villages in or adjacent to NPA areas (guardian villages) and villages that have been part of ICBF
- Preference for underprivileged villages with high subsistence farming and limited access to market (link to a government statistic/ poverty indicator?)
- Villages need to be accessible for project implementation
- Avoid villages that are included in resettlement plan

Desirable criteria include:

- Low or no occurrence of Unexploded Ordinance (UXO)
- Target Sam Sang village
- Villages located in the same cluster/landscape
- Preference to small- medium size villages (Number of households not more than 100)
- Not directly targeted by other programs/projects
- Where appropriate, prioritize villages in critical watersheds particularly where village forests provide ecosystem services for irrigation systems (ADB criteria).

6.8 Project Logical Framework

The following tables outline the project's logical framework at the GCF impact and outcome levels as well as at the project's outcome, output, activity and sub-activity levels.

E.2. GCF Impact level: Paradigm shift potential				
The following Table provides an overview of the GCF impact level paradigm shift potential criteria under the Integrated Results Management Framework. Annex 2e provide more detailed information on the rating of the current state of each baseline.				
Assessment Dimension	**Current state (baseline)**		**Potential target scenario (Description)**	**How the project/programme will contribute (Description)**
	Description	**Rating**		
Scale	At the time of this project formulation (2021-2022), upland farmers in six northern provinces, whom are among the most vulnerable to climate change, will be adversely impacted by climate change as business as usual practices put their livelihoods, food security and agri- and forest ecosystems at risk. Accelerating deforestation and forest degradation in the six provinces, which are together responsible for around 40% of national deforestation, further exacerbates the impact of climate change and related losses and damages (see Chapter B.1 for further information).	Medium	Paradigm shift would involve a transition away from business as usual baseline activities that drive deforestation and forest degradation, and exacerbate climate risk and vulnerability. Instead the project would create a paradigm shift towards climate resilient and deforestation free sustainable land management. This would be facilitated by the: ▪ Elaboration of climate-informed PLUP ▪ Improvements in monitoring and forest law enforcement ▪ Improvements in access to international and domestic (public and private) finance for climate action, ▪ Strengthening of capacities of national institutions to access, manage and monitor climate finance and impacts. ▪ Adoption of low-emission, deforestation free and climate resilient agricultural practices	Project interventions are projected to deliver 4.6 million tCO2e emission reductions over a 4 year period, without considering additional impacts from replication and up-scaling. This represents a significant step towards a paradigm shift for GHG emissions, and will support Lao PDR to unlock additional results-based payments from the FCPF Carbon Fund. At the same time, Project 2 will strengthen the resilience of 153,700 direct beneficiaries (76,850 men, 76,850 women) comprised of some of the most vulnerable communities in Lao PDR, through supporting them to strengthen their adaptive capacities and adopt more resilient livelihood activities. Indirectly, the project will support 332,991 persons (166,496 men, 166,496 women) living in the supported target districts who will benefit from improved consideration of climate information in decision making and land use planning processes, and improved capacities of district staff on climate change adaptation and mitigation. Overall, the programme will directly

	Despite initial results from the implementation of FP117 a paradigm shift towards low-emission and climate resilient forest and land use practices will not be reached as outlined in the programmatic approach described within FP 117 without additional support to ensure local land and forest management practices fully transition to climate resilient, low-emission and deforestation free agriculture and forestry with the aim of further unlocking emission reduction payments and, hence, secure long-term finance for the Lao forestry sector.		▪ Strengthening of low-emission, deforestation and climate resilient agri-value chains, with a focus on agri-MSMEs ▪ Implementation of climate-informed sustainable village forest management ▪ Elaboration of climate-informed protected area management plans, that support REDD+ and strengthen the resilience of communities located within and around the NPA ▪ Strengthening of adaptive capacities of local authorities and villagers through strengthening awareness of climate risk and vulnerability and the use of climate-information in land use planning and decision-making processes, as well as raising awareness and supporting investments in suitable risk reduction practices (e.g. investments in forest landscape restoration, climate-resilient and deforestation-free agriculture).	build the resilience of 273,700 beneficiaries (136,850 men and 136,850 women), and will indirectly benefit 723,382 persons (361,691 men and 361,691 women).[130] The project will further support the implementation of climate resilient land management activities on 2,100,000 ha of forest and agri-ecosystems. This includes the adoption of climate resilient agricultural practices on 17,000 ha of agri-ecosystems, and sustainable forest management on 191,500 ha through VFAGs.
Replicability	At the time of this Funding Proposal Formulation (2021-2022), Project 1 (FP117) laid the ground for the transformational change in the project area, including supporting policy mainstreaming, strengthening the regulatory framework, and implementing and improving the MRV system (with the establishment of	Medium	If capacities can be built and additional finance (international and domestic, public and private) can be mobilized, climate resilient, deforestation free and sustainable land management could be replicated and scaled-up within other villages, village clusters, districts, and provinces in Lao PDR, with key insight on lessons learned and best practices for upland areas in neighbouring countries such as Vietnam, Thailand and Myanmar. Beyond this, the project would provide key experiences that inform the operationalization	This project aims at scaling up successful approaches, and linking them to private sector engagement to mobilize additional finance for climate action, and ensure the long-term sustainability of project-supported investments. Specifically, the project will support the replication of PLUP, as well as deforestation- and climate resilient agricultural practices, based on a white list and the standardized PSAP/ VFAG approach, which is particularly relevant for rural upland agricultural producers in the region. This will help strengthen the adaptive capacities of local farmers and forest-dependent communities.

[130] Refer to FP Chapter D.1 for detailed information on beneficiary calculations and assumptions.

	provincial deforestation monitoring systems), among others. It also supported interventions on the ground in 3 provinces, namely: Houaphan, Sayabouri and Luang Prabang. However, to fully reach the paradigm shift towards low-emission and climate resilient forest and land use practices, additional technical and financial support is needed to replicate and scale-up investments in climate resilient and deforestation free sustainable land management in 6 provinces.		of Lao PDR's REDD+ strategy. The implementation of the Lao PDR ER-Programme under Projects 1 and 2 and the institutional arrangements in place to manage results-based payments from REDD+, will also facilitate the implementation of REDD+ at the national level (including Southern Lao PDR). While the ecosystems and landscapes differ in Southern Lao PDR, the financing mechanisms, participatory land use planning processes, standard operating procedures and monitoring systems, as well as capacity building processes would provide a flexible framework, where climate change adaptation has been mainstreamed, to facilitate the replication and scaling up of deforestation free, climate resilient and low-emission sustainable land management.	It will further support the replication and eventual scaling up of more resilient and sustainable (village) forest management across six northern provinces. This will be facilitated by the recent agreement of the Government of Lao PDR to channel RBPs to these 6 provinces, as agreed in the FCPF Benefit Sharing Plan, which will support replication and upscaling in the region (e.g. supporting communities in and around national parks with conservation agreements, and supporting village forest management). PDMS will also be replicated in the three additional provinces under Project 2 (Bokeo, Oudomxay and Luang Namtha). The project's phased and gradual approach to scaling up forest management (such as VFM, sustainable forest management activities within NPAs), is suitable and needed to gradually build up the capacities of government staff, and local forest-dependent men and women. It builds on past experiences in Lao PDR, and not only supports the development of management plans (based on thorough participatory land use planning), but also provides hands-on capacity building and finance to implement the annual operational plans. The anticipated bonus payments (i.e. performance-based payments) will bridge the phase until forests can be commercially used as outlined under article 120 of the revised forest law. In addition, with the approved Benefit Sharing Plan under the ER-Programme sub-national agencies will receive finance to provide their services and village communities will receive finance to further implement their agriculture and forest management plans.

Sustainability	At the time of this project formulation (2021-2022), the Government of Lao PDR has shown commitment and ownership to REDD+ and strengthening climate resilience in Lao PDR, e.g. through the new Forestry Law, National REDD+ Strategy to 2025 and Vision to 2030, among others. Lao PDR's latest NDC (2021) emphasizes the need to strengthen linkages between adaptation and REDD+, however without additional technical and financial support – such efforts are limited. In terms of needed technical support, capacity building is critical at the sub-national level, where capacities are low and staff turnover is high. This limits the overall adoption and sustainability of investments in sustainable land management. In terms of financial support, a major barrier for investing in low-emission and climate resilient land use is the limited availability of public and private finance (see also Sections B.2 and B.5):	Low	The ER-Programme, in which both Projects 1 and 2 contribute to, provides the basis for investments at scale to initiate the anticipated transformational change, and overcome the barriers facing Lao PDR to transition towards low-emission, deforestation free and climate resilient development pathways. This project aims at scaling up successful approaches, and linking them to private sector engagement to mobilize additional finance for climate action, and ensure the long-term sustainability of project-supported investments. That said, it is clear that the situation in Lao PDR is complex, and such a transition needs to be gradual and grounded in the local context. The target scenario would ensure that adaptation is adequately mainstreamed into guidelines, manuals and procedures for PLUP, PSAP, VFAG and VFM. In addition, it would have sufficient human and institutional capacities in place to plan, implement and transparently and effectively monitor investments in low-emission, deforestation free and climate resilient AFOLU at scale, considering a holistic landscape approach. This would range from awareness of climate risk and vulnerability, best practices for low-emission, best practices for deforestation free and climate resilient sustainable land management, gender-equality and social inclusion, and robust monitoring practices. It would further involve the application of PDMS, and strengthened capacities on forest monitoring and law enforcement, to ensure compliance with PLUP, PSAPs, and VFMPs. In addition, access to public and private finance for climate action would be increased, and mechanisms to channel climate finance would be strengthened (e.g. through the EPF or FPF).	Essential enabling pre-conditions, both for the sustainability and success of the project, as well as for future replication and up-scaling in other provinces, are: (a) human and institutional capacities, and (b) sustainable financing. Both are cornerstones of the project's Theory of Change, which focuses on capacity building, institutional strengthening and unlocking additional public and private financing streams for transforming the AFOLU sector. Project interventions are expected to increase access to finance, and mobilize additional funds for climate action. The project includes measures to strengthen access to international climate finance, including mechanisms related to the implementation of Article 6 of the Paris Agreement, as well as from voluntary REDD+ initiatives, with cross-cutting adaptation benefits, based on market and non-market mechanisms. Project measures will also strengthen national institutions' capacities (e.g. supporting EPF to become accredited to the GCF) to access, manage and monitor climate finance (Activity 1.1.1). Project activities also seek to engage the private sector to ensure the sustainability of results. Specifically, through the project's matching grant-scheme tailored to agri-MSMEs, a key actor at the interface of production and markets, the project will support the development of sustainable value chains and facilitate transition towards deforestation free and climate resilient agri- and agro-forestry value chains (Activity 2.2.1). The long-term sustainability of measures supported by the project, as well as their continued replication and scaling will be

	▪ Lao PDR faces severe liquidity stress and has a limited capacity to take on further loans for climate action, ▪ Producers and agri-MSMEs have limited access to financing (limited FIs in rural areas), and often do not meet the necessary conditions (e.g. lack of collateral). ▪ While private sector finance for climate action is considered critical to help fill financing gaps, there is a mismatch between private sector and public sector objectives and climate action. There tends to be a short-term perspective in land use management from the private sector and producers, driven by market conditions, which drives investments in unsustainable land management.		Beyond this, villagers would have strengthened adaptive capacities and increased incomes through adopting alternative, more resilient, sustainable livelihood opportunities. This could be through investing in climate resilient value chains (e.g. via agri-MSMEs), through VFM benefitting from changes in the forest law to market sustainable produced forest and NTPFs from village forests, or through implementing climate resilient agricultural practices that limit losses due to climate change, and increase yields and/ or diversify income.	facilitated by the institutionalization of trainings, capacity building, and through the development of SOPs and clear guidance, guidelines and procedures. Capacities of POFI, DOFI, PONRE, MONRE, PAFO, DAFO and EPF will be strengthened throughout project implementation on climate risk and vulnerability, climate change adaptation, climate resilient, deforestation free and low-emission SLM. The operationalization of PDMS in all 3 provinces, combined with capacity building support, will enable POFI to conduct near real time monitoring of forest cover change, and provide increased transparency and accountability to detect large scale deforestation. Improved monitoring, combined with investment support and capacity building on sustainable land management, will improve the overall sustainability and success of the measures, which in turn will facilitate Lao PDR to unlock further results-based payments in the future. The project interventions will facilitate greater (and more sustainability-oriented) private sector investment in the forestry and agriculture sectors. The matching grant-scheme under this project will enable private sector investments from MSMEs – which play a key role in the agricultural sector in Lao PDR - with a focus on developing sustainable, climate resilient, and deforestation free value chains in support of ensuring the sustainability of the PSAP promoted practices. In terms of mobilizing additional sources of climate finance to ensure the sustainability of interventions, the project will support the Lao PDR to assess and implement the readiness

				actions necessary to participate in the market-based schemes that emerge in the context of Article 6 of the Paris Agreement. Additionally, Lao PDR will be supported in assessing options and actions required for participating in market and non-market voluntary REDD+ initiatives for accessing results-based finance for emission reductions in excess of the Carbon Fund contract volume. Finally, the project will support Lao PDR in fundraising efforts for meeting its adaptation investment gap.

E.3. GCF Outcome level: Reduced emissions and increased resilience (IRMF core indicators 1-4, quantitative indicators)

The following Table outlines the GCF outcome level core indicators related to reduced emissions and increased resilience. For more information on the GHG calculations and methodology refer to the GHG Methodology Note in Annex 22.

GCF Result Area	IRMF Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final[131]	
MRA4 Forestry and land use	Core 1: GHG emissions reduced, avoided or removed/sequestered	**Government sources:** • Approved Reference Level (RL) of the FCPF ER-PD • Biennial Update Report (BUR) to the UNFCCC • Official REDD+ Office Reports **Project sources:** ▪ Project M&E in cooperation with JICA Mid-term evaluation report to have information on CO2	Project 2: Net annual forest-sector GHG emissions of 8.5 million tCO2eq	Project 2: 1 million tCO2e of avoided emissions and removals	Project 2: 4.6 million tCO2e of avoided missions and removals	Lifespan: 4 years Project 2 Lifespan target of GHG emissions: 4.6 million tCO2e – given that emission reductions are calculated against a Forest Reference Emissions Level (FREL) the emissions over the a longer lifespan are not calculated. Annual emission reductions: 1.14 tCO2e (average over lifespan).

[131] The final target means the target at the end of project/programme implementation period. However, for core indicator 1 (GHG emission reduction), please also provide the target value at the end of the total lifespan period which is defined as the maximum number of years over which the impacts of the investment are expected to be effective.

		emission reductions / sequestration				Programme ex-ante estimate: 11.7 million tCO2e GHG emission reductions have been calculated based on the methodology used for the preparation of the Reference Level (RL) of the Lao PDR Emissions Reduction Programme (ER-P), which was submitted and approved (in June 2018) by the FCPF Carbon Fund and is compliant with the Carbon Fund Methodological Framework. More detailed information is provided in the GHG Emission Reduction Methodology Note in Annex 22.
ARA1 Most vulnerable people and communities	Core 2: Direct and indirect beneficiaries reached	▪ Data from Village Authorities obtained during FPIC 1 ▪ Data from District Authorities ▪ Project M&E Evaluation reports to have information on adaptation impacts	Project 1 target: 120,000 persons from project 1 (60,000 male, 60,000female) will be continued to be supported by Project 2 390,391 indirect beneficiaries (195,196 men, 195,195 women) under project 1	Project 2: 82,110 direct beneficiaries (41,055 men, 41,055 women) 238,716 indirect beneficiaries (119,358 men, 119,358 women)	Project 2: 273,700 direct beneficiaries (136,850 men, 136,850 women) 723,382 indirect beneficiaries (361,691 men, 361,691 women)	**Direct beneficiaries** calculated based on the following assumptions: ▪ 530 villages will be supported in Project 2 (240 villages with continued support from project 1, and an additional 290 villages under Project 2). ▪ Population data is based on Lao Population and Housing Census Data 2015 (https://lao.unfpa.org/sites/default/files/pub-pdf/PHC-ENG-FNAL-WEB_0.pdf) ▪ For Project 1, an average of 500 inhabitants per village was used to calculated the number of

						direct beneficiaries, based on the Lao Housing and Population Census, which focused on three provinces: Houaphan, Luang Prabang and Sayabouri. ▪ An average value of 530 inhabitants per village was assumed for Project 2 villages (based on the Lao Housing and Population Census, considering the inclusion of an additional 3 provinces. ▪ It is assumed al villagers in the target villages are direct beneficiaries, as they will benefit from land use planning and other project-supported interventions. **Indirect beneficiaries** calculated based on the following assumptions: ▪ Population in all 29 districts (17 districts within Luang Prabang, Sayabouri and Houaphan, and an additional 12 districts from Bokeo, Oudomxay and Luang Namtha) benefit from strengthened legal and regulatory framework, improved monitoring and government capacities on

						climate change mitigation and adaptation. ▪ Indirect beneficiaries = population in all 29 supported districts – the number of direct beneficiaries ▪ 17 districts covered under Project 1 ▪ 12 districts under Project 2 ▪ District population data from Lao Population and Housing Census Data (2015)
ARA1 Most vulnerable people and communities	Supplementary 2.1: Beneficiaries (female/male) adopting improved and/or new climate-resilient livelihood options	▪ FPIC monitoring ▪ PSAP monitoring data ▪ Project M&E Evaluation report to have information on adaptation impacts	Project 1 target: 53,720 persons from project 1 (26,860 men, 26,860 women) Project 2: 0	Project 2 18,900 beneficiaries (9,450 men, 9,450 women) adopting more climate resilient livelihood options	Project 2 75,604 beneficiaries (37,802 men, 37,802 women) adopting more climate resilient livelihood options	Calculated based on the number of beneficiaries who access PSAP funds. 158 persons accessed PSAP funds on average per village under project 1 during the first round of PSAP implementation. An additional 103 persons could access PSAP funds as part of the bonus payment assuming 65% of bonus payment is channelled towards agricultural activities. Programme target: 129,323 beneficiaries adopting improved and/or new climate resilient livelihood options
ARA4 Ecosystems and ecosystem services	Core 4: Hectares of natural resources brought under improved low-emission	▪ PLUP and VFMP Monitoring Data ▪ Participatory land use plans developed under Activity 1.2.2	Project 1 target: 920,000 ha	Project 2:	Project 2:	Programme level – the final target in Project 2 includes continuation of activities that started under Project 1. Total

	and/or climate-resilient management practice	▪ Village Forest Management Plans developed under Activity 3.3.1 ▪ Protected Area Management Plans developed under Activity 3.2.1 ▪ Project M&E ▪ Mid-term evaluation report to have dedicated section on adaptation impacts		1,500,000 ha of terrestrial ecosystems brought under improved sustainable and climate resilient land management practices, of which: ▪ 1,100,000 ha are forest ecosystem ▪ 400,000 are agri-ecosystems	2,122,000 ha of terrestrial ecosystems brought under improved sustainable and climate resilient land management practices, of which: ▪ 1,422,000 ha are forest ecosystems ▪ 700,000 are agri-ecosystems	area of all land use plans for 530 villages. Area of agricultural land was calculated assuming 1,320.75 ha of agriculture land per village (the average agricultural area per village under Project 1) x 530 villages. Area of forest land was calculated assuming the inclusion of village forests, 5 NPAs and 1 NP. Village forests supported: ▪ 180,000 ha of village forests from Project 1 will continue to be supported by Project 2 ▪ Project 2 is expected to support 290 new villages with VFM. The average area of village forests covered under Project 1 was 700 ha. Therefore, it is estimated that new VF groups under Project 2 will cover 203,000 ha. In terms of NPAs: ▪ 672,200 ha are NPAs supported under Project 1, that will be continued to be supported under Project 2 ▪ 367,150 ha are additional NPAs that are included within Project 2 in the 3 newly added provinces (Bokeo, Oudomxay and Luang Namtha)

ARA4 Ecosystems and ecosystem services	Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under resoration and/or improved ecosystems		Project 1 target: 852,200 ha of National Park, NPAs and village forests	Project 2: 1,100,000 ha of National Park, Protected Areas and village forests	Project 2: 1,422,000 ha of National Park, Protected Areas and village forests	Area of national parks, NPAs and village forests covered within the programme. Village forests supported: ▪ 180,000 ha of village forests from Project 1 will continue to be supported by Project 2 ▪ Project 2 is expected to support 290 new villages with VFM. The average area of village forests covered under Project 1 was 700 ha. Therefore, it is estimated that new VF groups under Project 2 will cover 203,000 ha. In terms of NPAs: ▪ 672,200 ha are NPAs supported under Project 1, that will be continued to be supported under Project 2 ▪ 367,150 ha are additional NPAs that are included within Project 2 in the 3 newly added provinces (Bokeo, Oudomxay and Luang Namtha)

E.4. GCF Outcome level: Enabling environment
The following Table provides an overview of enabling environment-related GCF core indicators under the Integrated Results Management Framework. Annex 2e provides additional information on the rating for the current state.

Core Indicator	Baseline context (description)	Rating for current state (baseline)	Target scenario (description)	How the project will contribute	Coverage
Core Indicator 5: Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low emission climate-resilient development pathways in a country-driven manner	Project 1 advanced with the strengthening of institutional and regulatory frameworks for REDD+ in Lao PDR. This included, supporting various regulations to mainstream REDD+ and sustainable land and forest management, updating development plans. In addition, project 1 started institutional strengthening and capacity building in 3 of 6 provinces (Houaphan, Luang Prabang and Sayabouri). With these advances, there are clear experiences that can be replicated in the remaining three provinces (e.g. trainings on gender equality, social inclusion, FPIC, PLUP, PSAP, VFAGs and VFM, establishing PDMS, capacity building). In addition, project 1 has generated valuable experiences and supported capacity building of EPF through providing EPF the role of EE. Through supporting EPF with the establishment of their climate change funding window, project 1 has	low	The target scenario would see the capacities of government officials in PONRE, DONRE, PAFO, DAFO, POFI and DOFI strengthened in all six provinces, enabling them to continue to support and eventually replicate and scale up investments in climate resilient, deforestation free and low-emission sustainable land management. In terms of finance, the target scenario would see Lao PDR access additional sources of climate finance (e.g. adaptation fund, mechanisms under Article 6 of the Paris Agreement; and voluntary REDD+ initiatives), that will support the country to implement measures to meet the climate change targets set out in NDC and Climate Change Strategy. In addition, EPF would become accredited to GCF, enabling the fund to plan, implement, and monitor climate finance projects.	▪ Project 2 will support the establishment of proven management systems in the remaining 3 provinces (e.g. PDMS), and provide ongoing capacity support to government staff at the provincial and district level in all 6 provinces, understanding that upscaling and replication is a gradual process. This will ensure capacity building ranges from improving planning (considering best practices for adaptation mainstreaming, FPIC, gender equality and social inclusion), as well as implementation of best practices for PLUP, climate resilient and deforestation agriculture, SFM and FLR, and transparent and effective monitoring.	National level (one country)

	improved channelling of climate finance to priority investments within villages across Houaphan, Luang Prabang and Sayabouri. EPF has since begun the process of applying for GCF accreditation, although additional support is needed to support them with this process. While these advancements are a step in the right direction, there are several barriers that persist in Lao PDR that limit the transition to low-emission and climate resilient development pathways. First of all, Lao PDR is a LDC, and there are insufficient government resources and capacities for climate change adaptation and mitigation. Lao PDR's NDC (2021) highlights the urgent need to mobilize additional climate finance from the public and private sector to invest in climate change mitigation and adaptation, where forestry and agriculture are among two of its priority sectors. It further notes the need to strengthen the synergies between REDD+ and climate change adaptation, which are			▪ It will build on the manuals, guidelines, training materials and other resources developed under project 1, while providing additional support to mainstream adaptation throughout these processes and materials (strengthening the linkages between climate change mitigation and adaptation, and facilitating investments in resilience building within the AFOLU sector). ▪ Project 2 will also help fill the critical gap related to financing climate action. It will: ▪ Support EPF to continually strengthen their capacities, gain experience managing a matching grant scheme, and support its accreditation process to access international climate finance, and develop, implement and monitor high quality	

	often untapped. A key opportunity for this is to integrate adaptation within PLUP, PSAP and VFM, however until now there is no systematic approach.			climate change projects. ▪ Build the capacities of FPF to prepare them to eventually sustainably manage and disburse potential climate finance sources (e.g. Climate Change Funding Window, REDD+ Results-based Payments under the FCPF, and other sources) ▪ Support Lao PDR with a set of comprehensive measures that will facilitate the additional mobilization of climate finance to meet the country's NDC – this will include support to the readiness process for participating in mechanisms under Article 6 of the Paris Agreement (including supporting the process of developing eligibility criteria for programs, projects, and units); action plans for meeting the requirements of voluntary REDD+ initiatives; and supporting the NDA to	

				develop a financing strategy identify and fundraise climate finance to meet conditional NDC targets and the climate change adaptation investment needs outlined in the NDC	
Core indicator 7: Degree to which GCF Investments contribute to market development/transformation at the sectoral, local, or national level	Poverty and lack of alternative livelihood opportunities (e.g. off-farm employment) have resulted in a high dependence on land and forests for household income in the project area. Project 1 developed the PSAP approach for transitioning to deforestation free production in target villages. Further engagement of the private sector to support the development of deforestation free value chains is required. Agri-MSMEs are critical actors to support the development of these value chains given their position as a critical actor at the intersection of deforestation, production systems and value chains. However, they are often left out of discussions on sustainability, and here is a notable absence of financing opportunities for	medium	The targeted scenario would see deforestation free and climate resilient agriculture and agroforestry practices implemented by producers. Implementation would be supported, incentivized, and maintained through more predictable market demand for deforestation free commodities from value chain actors, especially by agri-MSMEs. This would lead to strengthened and more sustainable agricultural value chains. In terms of finance, the target scenario, would see the availability of finance for agri-MSMEs seeking to undertake investments in sustainability oriented activities.	Project 2 will scale the implementation of the PSAP approach (Activity 2.1.1) in the three new provinces. This will facilitate the transition to deforestation free and climate resilient agricultural production systems in the targeted villages and support producers to enhance their productivity. Specifically, the approach will address key drivers of deforestation, such as agricultural expansion and unsustainable pioneering and rotational shifting cultivation. The approach of Project 2 also seeks to integrate farmers into climate resilient and low-emission agricultural value chains. Through supporting private sector actors, and specifically, agri-MSMEs purchasing commodities from target villages	Multiple sub-national areas within a country

	agri-MSMEs to invest in sustainable forestry, agro-forestry, and deforestation free climate resilient agriculture activities. These factors contribute to creating a bottleneck for the development of deforestation free and sustainability oriented value chains.			(Activity 2.2.1) to enhance their capacities and sustainability performance and with targeted financial support for sustainable investments the project aims to strengthen these value chains and support a market-shift towards deforestation free and climate resilient agriculture. In terms of forestry, the project will support villagers to benefit from changes in the forest law to economically benefit from the sustainable management of village forests (Component 3). This is a new provision under the new forestry law, and the project enters at an opportune moment to support villagers from forest management planning to implementation and monitoring, while strengthening income-generating opportunities for local villagers from SFM and FLR.	

E.5. Project/programme specific indicators (project outcomes and outputs)						
The following table outlines the project specific indicators (project outcomes and outputs). Baseline values reflect progress made under Project 1.						
Project/programme results (outcomes/ outputs)	**Project/programme specific Indicator**	**Means of Verification (MoV)**	**Baseline**	**Target**		**Assumptions / Note**
				Mid-term	**Final**	
Outcome 1: Governance and the implementation of low-emission and climate-informed planning is strengthened and sustainable financing sources are accessed	Area (ha) of village agricultural and forested land covered by PLUPs and under more sustainable and climate-resilient management	▪ Approved participatory land use plans/ PLUP monitoring ▪ PDMS and reports from POFI/ DOFI ▪ Project M&E	Project 1 target: 920,000 ha	Project 2: 1,290,000 ha	Project 2: 2,100,000 ha	Average area per village under PLUP was calculated based on average values from Project 1, where the average PLUP village land use plan covered 3,838 ha. 530 villages: Comprised of 170 villages from Project 1 and 70 from KfW village forestry, plus 290 under Project 2 (240 in new provinces and additional 50 in existing provinces)
Output 1.1 Organizational structure and capacities of domestic (financial) institutions are strengthened to access, mobilize, manage and monitor the use of climate finance from diverse public and private sources	Number (#) of public institutions with strengthened capacities to manage and monitor climate finance from diverse public and private sources	▪ Documentation of trainings (attendance sheets, materials) ▪ Project M&E ▪ Gap assessment and action plan Article 6 ▪ Conformance plan with requirements of REDD+ voluntary initiatives NDA financing strategy for NDC implementation	Project 2: 0 public institutions	Project 2: 1 institution	Project 2: 2 institutions	Public institutions (EPF and FPF)
Output 1.2 Participatory village land use plans are developed, are climate informed and integrate measures to strengthen climate resilience	# of climate-informed participatory village LUPs developed	▪ Approved and finalized participatory land use plans / PLUP monitoring Project M&E	Project 1 target: 240	Project 2: 320	Project 2: 530	170 from project 1 and 70 from KfW village forestry, plus 290 under project 2 (240 in new provinces and additional 50 in existing provinces)

Outcome 2: Vulnerabilities of villagers are reduced and their livelihoods are improved by engaging in climate resilient, deforestation free value chains and access to markets	Area (ha) under sustainable, deforestation free and climate resilient agricultural practices	▪ PSAP work plan and PSAP monitoring ▪ VFAG documentation and registration for cooperation on sustainable agricultural practices ▪ Village Agricultural Activity and Investment Plan ▪ Field survey results Project M&E	Project 1 target: 14,400 ha Project 2: 0	Project 2: 4,350 ha	Project 2: 17,400 ha	Project 2 will target approximately17,400 ha. This was calculated considering the following assumptions: the average landholding of upland dependent families is of 1.2 hectares. The project will be able to support PSAP implementation on an average of 50 upland dependent families per village in 290 villages through the VFAG initial payment and the bonus payment (this would come to a total of 14,500 families with approximately 17,400 hectares in total). The VFAG initial payment will be on average of EUR 10,800 and can reach at least 27 families with EUR 400 for PSAP implementation (under project 1 there have been 29-30 families accessing PSAP funding under VFAGs).It is assumed that villages will receive a bonus performance-based payment averaging EUR 10,000 and that 65% of that bonus payment will be channelled to PSAP activities and support an additional 20 upland dependent families. This assumes also that across the 3 new provinces there are 523 people/village

						on average living in a total of 922 rural villages. That corresponds to an average of circa 100 families per rural village (5.3 persons/family). Assuming the figures are similar in the 3 provinces of Project 1, and in the 290 target villages in total, this adds up to a total of 29,000 families overall. PSAP only addresses the upland farming families, which are estimated to be 60% of the total. Total programme target: 31,800 ha
Output 2.1 Villagers are trained by capacitated government staff, and enabled to produce sustainable, climate resilient and deforestation free agricultural and agroforestry products, strengthening their access to sustainability-oriented markets	# of villages received funding for PSAP implementation from the VFAG for climate resilient and deforestation free agriculture and agro-forestry	▪ PSAP work plans ▪ PSAP and VFAG monitoring ▪ VFAG documentation and registration for cooperation on sustainable agricultural practices ▪ Village Agricultural Activity and Investment Plan ▪ Field survey results Project M&E	Project 1 target: 170 Project 2: 0	Project 2: 130	Project 2: 290	170 villages received funding for PSAP implementation from VFAG in Project 1 It is assumed all 290 villages supported under Project 2 will receive funding for PSAP implementation.
Output 2.2 Agri-MSMEs are capacitated, and have improved incentives and access to finance to invest in marketing and processing for locally sourced deforestation	# of agri-MSMEs receiving matching grants to invest in climate resilient, low-emission and/or	▪ Signed matching grant agreements ▪ Business plans Project M&E	Project 2: 0	Project 2: 15	Project 2: 60	Assumes that there will be 60 agri-MSMEs supported that will be able to access matching grants with average grants across categories of EUR 30,000

free and climate resilient agricultural products	deforestation free value chains					
Outcome 3: Sustainable management, protection and rehabilitation of forest ecosystems is improved	Area (ha) under more resilient and sustainable forest practices across forest categories (village forestry and protected areas)	▪ Approved Protected Area Management Plans ▪ Approved Village Forest Management Plans ▪ VFM and VilFoCA monitoring ▪ Project M&E ▪ Monitoring reports of PoFI and DOF	Project 1 target: 852,200 ha	Project 2: 1,100,000 ha	Project 2: 1,422,000 ha	Area (ha) under sustainable forest practices across forest categories = area of village forest and NPAs supported by the project. Project 2 will continue supporting NPAs and Village Forests Areas that are supported under Project 1. Village forests supported: ▪ 180,000 ha of village forests from project 1 will continue to be supported by Project 2 (with an average of 750 ha per village forest) ▪ Project 2 is expected to support 290 new villages with VFM. The average area of village forests covered under Project 2 was assumed at 700 ha.[132] Therefore, it is estimated that new VF groups under Project 2 will cover 203,000 ha. ▪ In total VFM will cover 383,000 ha. In terms of NPAs: ▪ 672,200 ha are NPAs supported under

[132] The average area was reduced to 700 ha per village to be more conservative, as village forest size in the additional 3 provinces is likely to be slightly smaller. This is partly linked with the size of NPAs, which are larger in area in the 3 NPAs covered under Project 1, where villagers in the same districts as these NPAs tend to have larger village forests.

						Project 1, that will be continued to be supported under Project 2 ▪ 367,150 ha are additional NPAs that are included within Project 2 in the 3 newly added provinces (Bokeo, Oudomxay and Luang Namtha) ▪ In total, these 5 NPAs and 1 NP cover 1,039,350 ha
Output 3.1 Village communities are trained by capacitated government staff and have the financial resources to implement sustainable (village) forest management plans that contribute to REDD+ and strengthen the resilience of forest ecosystems and the livelihoods that depend on them	# of village forest management plans developed and under implementation that contribute to strengthened resilience	▪ Approved Village Forest Management Plans ▪ Project M&E ▪ Grant requests from VFAG for VMP implementation ▪ Monitoring reports of PoFI	Project 1 target: 240	Project 2: 340	Project 2: 530	240 villages supported under Project 1 with VFM, who will receive continued support under Project 2 (as described under Chapter B.3). 290 additional villages will be supported under Project 2 (240 in Bokeo, Luang Prabang and Oudomxay, and 50 in Houaphan, Luang Prabang and Sayabouri)
Output 3.2 NPA management plans are developed and communities are enabled and actively engaged in implementing conservation agreements in NPAs that enable sustainable forest management and forest conservation	a) # of climate-informed NPA management plans revised and under implementation b) # of village forest conservation agreements signed and under implementation	▪ Approved Protected Area Management Plans ▪ Approved VilFoCA ▪ Project M&E ▪ PDMS and monitoring reports of PoFI and DOF	Project 2 baseline: a) 0 b) 41	Project 2: a) 4 b) 80	Project 2: a) 6 b) 140	All NPA and National Parks have management plans that will require revision for the period from 2025-2030 VilFoCA in baseline developed by development partners (4 in Nam Sam NPA, 23 in Nam et Phou Louey National Park, 14 in Nam Pouy NPA, 0 in Phou Hi Phi, 0 in Nam Ha NPA, 0 in Nam Kan NPA).

Project/programme co-benefit indicators						
Co-benefit 1: Improved food security	Percentage (%) of direct beneficiaries (male and female) who confirm improved food security	▪ Survey (mid-term, and final survey) ▪ Project M&E	0%	50% of female beneficiaries 50% of male beneficiaries	70% of female beneficiaries 70% of male beneficiaries.	Surveys to be conducted in target villages at project mid-term and project-end.
Co-benefit 2: Enhanced conservation of biodiversity	Area of NPAs where sustainable forest management and conservation are implemented with strong biodiversity benefits, including important habitats for diverse species including the black gibbon, among others	▪ Approved Protected Area Management Plans, VilFoCA ▪ Project M&E ▪ Monitoring reports of PoFI and DOF	Project 1 target: 670,000 ha	Project 2: 900,000 ha	Project 2: 1,039,350 ha	Baseline figures cover the 2 NPAs and 1 National Park covered under Project 1 (total area circa 672,200 ha): ▪ 70,000 ha Nam Sam NPA ▪ 411,000ha Nam et Phou Louey NP ▪ 191,200 ha Nam Pouy NPA Total Figure under project 2 includes 3 additional NPAs supported in Bokeo, Luang Namtha and Oudomxay (combined area 367,150 ha): ▪ 87,350 ha Phou Hi Phi NPA ▪ 222,400 ha Nam Ha NPA ▪ 57,400 ha Nam Kan NPA

E.6. Project/programme activities and deliverables

The following Table describes all project activities and sub-activities. For further information on their timing, refer to the Implementation Timetable in Annex 5.

Activities	Description	Sub-activities	Deliverables
Activity 1.1.1 Climate change funding window and sustainable finance	Activity 1.1.1 will strengthen institutional capacities to channel and mobilize additional climate finance (EPF and FPF). It will further support EPF with their GCF	▪ Sub-activity 1.1.1.1 Enhancing the capacities of EPF & FPF to manage and monitor climate finance, including results-based payments	▪ Capacity development plan for enabling EPF and FPF to manage and monitor climate finance implemented

	accreditation process. It also will support Lao PDR to assess additional options for finance for REDD+ results, with cross-cutting climate change benefits, in excess of the contract volume of the FCPF Carbon Fund; support the readiness activities for participating in mechanisms under Article 6 of the Paris Agreement; and will support the NDA in developing a financing strategy for climate change adaptation and for meeting the targets in the country's ambitious NDC.	▪ Sub-activity 1.1.1.2 Options assessment and action plan for securing long-term financing for NDC implementation, including through the participation in market mechanisms and Art. 6, for REDD+ results	▪ Gap assessment and action plan for enabling the participation of Lao PDR in market mechanisms under Article 6, including options to address issues related to corresponding adjustments ▪ Viability assessment for Lao PDR participation in existing REDD+ voluntary market and non-market mechanisms ▪ Conformance plan to meet the requirements of market-oriented REDD+ Financing strategy and implementation plan NDC implementation
Activity 1.2.1 Law enforcement and monitoring	Activity 1.2.1 will strengthen law enforcement and monitoring to ensure transparent and robust monitoring of … It will involve training provincial and district staff on best practices and SOPs developed under Project 1, supporting the development of 3 PDMS (Bokeo, Luang Namtha and Sayabouri), operationalization of PDMS in all 6 provinces, harmonization of approaches and improvement of knowledge management for strengthened law enforcement.	▪ Sub-activity 1.2.1.1 Training to facilitate implementation of enhanced law enforcement ▪ Sub-activity 1.2.1.2 Operationalization of provincial deforestation monitoring systems (PDMS) ▪ Sub-activity 1.2.1.3 Harmonization of approaches and improvement of knowledge management for strengthened law enforcement	▪ 3 new PDMS established for additional provinces included under Project 2 (Bokeo, Oudomxay and Luang Namtha) ▪ POFI and DOFI staff trained on PDMS, and are able to monitor forest cover change with new remote sensing technologies according to SOPs ▪ PDMS operational in all 6 provinces ▪ PDMS monitoring approaches are harmonized ▪ Annual summary reporting protocols from the village level made available at the DPMU
Activity 1.2.2 Land-use planning and improved tenure security	Activity 1.2.2 will support mainstreaming of climate change adaptation into PLUP 2.0 processes (through the development of an adaptation supplement), followed up training of PLUP teams at the provincial and district level on climate change adaptation, best practices for PLUP, FPIC, gender equality and social inclusion (GESI). With strengthened capacities, tools and supporting materials, PLUP teams then conduct PLUP in 290 villages	▪ Sub-activity 1.2.2.1 Mainstreaming climate-change adaptation into land use planning manuals and guidelines, and training district officers on climate risk and vulnerability, and suitable climate change adaptation interventions ▪ Sub-activity 1.2.2.2 Participatory village land use planning (PLUP) in target project districts (linked with	▪ Village land use plans developed and under implementation ▪ Land use plans (developed and under implementation) have at least 70% compliance ▪ At least 70% of all adult villagers in target (of which 50% are female) villages state that they feel actively included in the PLUP process

	(240 villages in Bokeo, Luang Namtha and Oudomxay, and an 50 in Houaphan, Luang Prabang and Sayabouri), which will guide the implementation of investments under Components 2 and 3.	Activity 1.2.1 and Components 2 and 3) in hotspot areas[133] ▪ Sub-activity 1.2.2.3 Monitoring and enforcement of land use plans	
Activity 1.2.3 Knowledge management, FPIC, safeguards and gender	Activity 1.2.3 focuses on knowledge management and communication related to the project. It further involves the implementation of the Environmental and Social Management Plan (ESMP) and Gender Action Plan (GAP), and ensures compliance with FPIC procedures and safeguards (where the FPIC process is cross-cutting throughout the project components and activities).	▪ Sub-activity 1.2.3.1 Knowledge management and communication ▪ Sub-activity 1.2.3.2 Implementation of the Environmental and Social Management Plan (ESMP) and Gender Action Plan (GAP) and ensuring compliance with FPIC and safeguards	▪ Project communication plan implemented ▪ Awareness campaigns designed and implemented in newly added project provinces and districts ▪ Project website maintained and regularly updated ▪ Safeguard-related activities systematically recorded
Activity 2.1.1 Promotion of sustainable, climate informed and deforestation free agricultural practices and technologies	Activity 2.1.1 will facilitate the implementation of sustainable, climate informed and deforestation free agricultural practices and technologies in 290 villages in the 6 provinces. It will involve institutional strengthening on PSAP at the provincial and district levels, climate change adaptation mainstreaming in PSAP processes and manuals, working with villagers to develop and implement PSAP investment plans that are tailored to their local context and priorities (which build on climate-informed PLUP developed under Activity 1.2.2), and support ongoing knowledge management and learning to continually strengthen and improve the PSAP approach and generate new information on best practices for deforestation free and climate resilient agricultural practices. Transferring of funds for PSAP investment plan implementation will be linked with VFAGs, established and operated under Activity 2.1.2.	▪ Sub-Activity 2.1.1.1 Capacity building and knowledge management for sustainable, climate resilient and deforestation free agricultural practices and technologies ▪ Sub-Activity 2.1.1.2 Scaling of PSAP planning approach to 290 villages ▪ Sub-Activity 2.1.1.3 Implementation of PSAP Agricultural Activity and Investment Plan	▪ DAFO and TSC staff trained on climate resilient good agricultural practices, related to the white list, and the PSAP/ VFAG process ▪ Climate resilient and deforestation free agricultural practices adopted, leading to increased yields, disaggregated by crops ▪ For climate resilient and deforestation free agricultural practices: Each eligible village receives approximately EUR 10,800 upfront as an incentive payment, and later approximately EUR 10,000 in the form of a performance-based bonus payment (contingent on performance and forest area size) ▪ Participation rates of women in community meetings are at least 40%

[133] In some district and target villages, donor-funded initiatives such as the GIZ LMPD project have supported land use planning. These land use plans will not require a new land use planning exercise and the programme will build upon and support their implementation and monitoring

Activity 2.1.2 Investments in sustainable climate informed and deforestation free agricultural practices and agroforestry	Activity 2.1.2 will support the set up and implementation of Village Forestry and Agriculture Grants (VFAG), following the guidelines developed under Project 1. VFAG will serve as the mechanism which will receive EPF grants, channelling funds to the village level.	▪ Sub-activity 2.1.2.1 Scaling up the VFAG approach to 290 villages ▪ Sub-activity 2.1.2.2 Capacity building of new VFAG committees ▪ Sub-activity 2.1.2.3 Monitoring of VFAGs	▪ VFAGs set up and operational in 290 villages, channelling funds from EPF to local villages for PSAP investment plan implementation (under Activity 2.1.1), and VFM (under Activity 3.1.1)
Activity 2.1.3 Watershed forest management to support small-scale irrigation investments	Activity 2.1.3 complements ADB investment in 11 small-scale agricultural irrigation schemes through support to ensuring that the forested landscapes in the catchment areas of the irrigation projects remain intact through improved land management (including good agricultural practices) and through reduced pressure from drivers of deforestation and degradation (e.g. lack of alternative livelihood opportunities, poverty, malnutrition, low agricultural productivity, lack of value adding activities and weak negotiation/marketing skills).	▪ Sub-activity 2.1.3.1 Market oriented production ▪ Sub-activity 2.1.3.2 Watershed ecological services protected ▪ Sub-activity 2.1.3.3Improved nutritional status	▪ 11 market assessments conducted for dry season and upland crops ▪ Small-scale irrigation schemes modernized, covering a command area of at least 2,900 ha ▪ 3 district nutrition teams operational
Activity 2.1.4 Implementation of benefit sharing plan for sustainable agriculture	Activity 2.1.4 will support the implementation of the ER-Programme's benefit sharing plan, with a focus on supporting community-level investments climate-smart and deforestation free agriculture	▪ Sub-activity 2.1.4.1 Operationalization of benefit sharing plan for sustainable agriculture	▪ Benefit sharing plan implemented, including investments in community infrastructure, and climate-smart agriculture practices
Activity 2.2.1 Catalysing private sector investments in sustainable climate-informed and deforestation free value chains	Activity 2.2.1 will channel support agri-MSMES to enhance their sustainability performance through targeted technical assistance support and will provide matching grants through EPF to eligible agri-MSMEs in 6 provinces to improve their access to finance for sustainable investments; support the development of sustainable value chains, and increase overall investments in sustainable deforestation free, low-emission and climate resilient agriculture.	▪ Sub-Activity 2.2.1.1: Climate resilient and deforestation free value chain development ▪ Sub-Activity 2.2.1.2: Matching grants to support agri-MSMEs develop climate resilient and deforestation free value chains	▪ Signed cooperation agreements with 60 agri-MSMEs from 6 provinces to work on climate resilient deforestation free business plans . ▪ 60 agri-MSMEs access matching grants, mobilizing at least EUR 1.8 million of private finance
3.1.1 Village forest management	Activity 3.1.1 involves the development, implementation and monitoring if VFMPs. Additional attention will be paid to	▪ Sub-activity 3.1.1.1 Mainstreaming of climate change adaptation in VFMPs and training DAFO and PAFO on	▪ Adaptation mainstreamed in VFMP guideline

	mainstreaming climate change adaptation within VFMPs.	climate change adaptation within village forestry ▪ Sub-activity 3.1.1.2 Development of VFMPs ▪ Sub-activity 3.1.1.3 Implementation and monitoring of VFMPs	▪ 290 VFMPs approved in target villages ▪ Village forests sustainably managed under approved VFMPs for 290 villages ▪ Participation rates of women in community meetings are at least 40%
3.1.2 Implementation of benefit sharing plan for SFM and FLR	Activity 3.1.2 will support the implementation of the ER-Program's benefit sharing plan, with a focus on supporting community-level investments in SFM and FLR. It will be implemented by the World Bank.	▪ Sub-activity 3.1.2.1 Operationalization of benefit sharing plan for SFM and FLR	▪ Benefit sharing plan implemented, including investments in SFM and FLR
3.2.1 National Protected Area management	Activity 3.2.1 will continue to support the sustainable management of NPAs and national parks (NPs) through improved law enforcement, NPA management and VilFoCa.	▪ Sub-activity 3.2.1.1 Capacity building on climate change adaptation and NPA management ▪ Sub-activity 3.2.1.2 Improvement of management and law enforcement in NPA conservation landscape ▪ Sub-activity 3.2.1.3 Development of new and amendment of existing VilFoCA ▪ Sub-activity 3.2.1.4 Implementation of VilFoCA (sustainable land use, forest conservation and management	▪ Development of new and revision of existing VilFoCA in 5 NPAs and 1 National Park ▪ Forests in 5 NPAs and 1 National Park sustainably managed in cooperation with local guardian villages under approved NPA management plans and through VilFoCA.

6.9 Project Budget and Source of Finance

The budget for Project 2 is summarised in the table below according to source. A description of the co-financing arrangements is described below.

Table 31: Budget Breakdown

Component/output	Activity	Total value (EUR)	GCF	GoL	BMZ (GIZ)	BMZ (KfW)	ADB	World Bank	IFAD
Component 1: Creation of an enabling environment for REDD+ implementation	Activity 1.1.1 Climate Change Funding Window and Sustainable Finance	1,706,635	1,643,720	10,920	51,995	0	0	0	0
	Activity 1.2.1 Law Enforcement and Monitoring	1,584,039	1,508,895	44,460	30,684	0	0	0	0
	Activity 1.2.2 Land-use planning and improved tenure security	3,815,171	2,162,763	1,488,825	41,083	122,500	0	0	0
	Activity 1.2.3 Knowledge Management, adaptation impact reportingm FPIC, safeguards and gender	1,245,483	1,165,403	80,080		0	0	0	0
	Subtotal	8,351,328	6,480.781	1,624,285	123,762	122,500	0	0	0
Component 2: Market solutions for agricultural drivers of deforestation	Activity 2.1.1 Promotion of sustainable and deforestation-free agricultural practices (PSAP) and technology	8,216,077	4,493,299	1,939,080	346,900	0	0	0	1,436,798

	Activity 2.1.2 Investments in sustainable climate informed and deforestation-free agricultural practices and agroforestry	8,057,181	7,393,544	0	0	0	0	0	663,637
	Activity 2.1.3. Sustainable Rural Infrastructure Watershed Management [ADB]	13,093,759	0	0	0	0	13,074,314	0	19,445
	Activity 2.1.4 Implementation of beneft sharing plan for sustainable, climate-informed and deforestation-free agriculture	6,021,400	0	0	0	0	0	6,021,400	0
	Activity 2.2.1 Catalyzing private sector investments in sustainable climate-informed and deforestation-free value chains	3,079,438	3,019,438	0	0	0	0	0	0
	Subtotal	38,467,855	14,966,281	1,939,080	346,900	0	13,074,314	6,021,400	2,119,880
Component 3: Climate Change mitigation and adaptation through forestry	Activity 3.1.1 Village Forest Management (VFM)	8,848,382	5,533,282	842,400	346,900	2,125,800	0	0	0
	Activity 3.1.2 Implementation of benefit sharing plan for sustainable forest management (SFM) and forest landscape restoration (EUR)	6,021,400	0	0	0	0	0	6,021,400	0
	Activity 3.2.1 National Protected Area (NPA) management	4,217,657	2,252,057	1,965,600	0	0	0	0	0
	Subtotal	19,087,439	7,785,339	2,808,000	346,900	2,125,800	0	6,021,400	0

Monitoring & Evaluation	Monitoring and Evaluation Costs	1,597,626	1,597,626	0	0	0	0	0	0
	Subtotal	1,597,626	1,597,626	0	0	0	0	0	0
Sub-Project management, coordination, monitoring and reporting (PMC)	PMC	6,074,271	1,493,417	534,196	42,438	0	0	3,597,200	407,020
	Subtotal	6,074,271	1,493,417	534,196	42,438	0	0	3,597,200	407,020
Total financing Output 1-3, M&E and PMCs		**73,578,519**	32,323,444	6,905,561	860,000	2,248,300	13,074,314	15,640,000	2,526,900
Contingencies		**500,000**	500,000	0	0	0	0	0	0
Total budget		**74,078,519**	**32,823,444**	**6,905,561**	**860,000**	**2,248,300**	**13,074,314**	**15,640,000**	**2,526,900**

7. Project Implementation

Since Project 2 will build upon Project 1 (with the only difference of not continuing the cooperation with JICA) and expand the area being covered to the initial 6 provinces, the institutional arrangements already in place will only change slightly. This is informed through the ongoing implementation of FP117, which validated the suitability of the implementation.

7.1 Accredited Entity – Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)

Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), with its headquarters in Germany, is the Accredited Entity (AE) in this project. GIZ with its management structure in Laos will operate as an Executing Entity. For the avoidance of doubt, these two GIZ functions will be strictly separated and are accountable to different management structures within GIZ. As the AE, GIZ has the oversight responsibility for the overall project as defined in the Accreditation Master Agreement (AMA) between GCF and GIZ. As AE, GIZ administers the funds on behalf of GCF and provides oversight guidance and quality assurance for the Executing Entities.

The GCF AE unit based at GIZ head office is responsible for:

- Oversight of the project during implementation and finalization:
    - Maintaining adequate documentation and communication with the GCF
    - Establishing internal control routines
    - Ensuring continuous project risk assessment
- Financial management**,** in particular receiving GCF proceeds as well as disbursing, administering and processing the funds. This implies:
    - Ensuring the proper use of GCF proceeds
    - Assessing the integrity and capacity of the Executing Entities (see Chapter 7.2 below for a detailed description of the project´s executing entities)
    - Setting up the subsidiary agreements
    - Monitoring the subsidiary agreements and the performance of Executing Entities
    - Ensuring Executing Entities' procurement activities comply with GIZ's policies and rules
    - Evaluating the project, including the commissioning of independent mid-term and final reviews

Furthermore, oversight and quality assurance are supported by specific departments in GIZ head office:

- *Finance Department:* Responsible for strategic and operational financial control, maintaining standards of financial management, financial control, accounting, elaboration of annual statements of accounts, among other responsibilities.
- *Procurement Department*: Responsible for procurement, contracting, setting up the financing agreements with the Executing Entities; and monitoring of tender processes through the procurement plan, among other responsibilities.
- *Compliance and Integrity Department*: Responsible for ensuring compliance with GIZ and government rules and regulations.

7.2 Executing Entities

As in Project 1 following two Executing Entities will implement the project:

1) The Government of Lao PDR through the Environment Protection Fund (EPF)
2) Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)

7.2.1 The Government of Lao PDR through the Environment Protection Fund (EPF)

The Government of Lao PDR possesses the legal personality to sign a subsidiary agreement with GIZ (AE) regarding the role that the EPF will play in establishing and operating the Climate Change Funding Window. While the legal agreement with GIZ (AE) will be signed with the Government, the GCF funding will flow from GIZ (AE) direct to the EPF, which will be responsible for (see Climate Change Funding Window Operations Manual):

- Securing fiduciary standards regarding all financial management, approvals and disbursements
- Disbursement of grants to 'project owners'
- Responsible for financial management at the project level, following the respective financial guidelines in the Climate Change Funding Window Operations Manual
- Annually submit project level reports to GIZ, as outlined in the Grant Agreement
- Write final programme level report to GIZ
- Submission of final financial statement to GIZ (AE)

EPF is also undergoing the process to apply for GCF Accreditation, and this project will further support them to build their capacities (under Activity 1.1.1) and gain valuable experience in implementing a GCF project.

EPF as an EE will be responsible for a GCF budget for Project 2 of EUR 19.39 million.

7.2.2 Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

GIZ has been operating in Lao PDR since 1993 and currently employs approximately 250 staff members, most of them Lao nationals. GIZ technical assistance in the Lao forestry sector amounts to Euro 21 million, with Lao PDR ranking among the top 15 recipient countries of forestry-related German development assistance worldwide.

In its capacity as an EE, GIZ Lao PDR will lead, and provide overall management of, the Technical Assistance (TA) to Project 2 at national and sub-national levels. It will be responsible for:

- Managing the project budget of GIZ (EE)
- Liaising with the GIZ Regional Office based in Vietnam regarding budget and finances, monitoring and reporting, staff and contracting
- Reporting to the German Embassy and BMZ regarding their financial contributions to the project, as well as the overall progress of project implementation
- Coordinating project implementation with the co-financing development partners and their projects and counterparts, as well as other donors and projects operating in the same technical and/or geographical area.
- Liaising with, and reporting to, the NPSC and PPSCs
- Coordinating with, and reporting to, line ministries involved in the project (MAF, MoNRE), as well as MPI and the GCF NDA in Lao PDR (Department of Planning and Finance within MoNRE)
- Supporting establishment and management of the NPMU, as well as the management of Provincial Project Management Units (PPMUs) in each of the 6 project provinces and District Project Management Units (DPMUs) in each of the project's target districts.

GIZ as an EE will be responsible for a GCF budget for Project 2 of EUR 14.14 million.

7.3 Other partners of the project

Project Partners (providing co-financing to the project): Apart from the Executing Entities, GIZ will work closely with a number of governmental and development partners for the implementation of the Funded Activity, including:

- The **Government of Lao PDR (GoL)** represented by the Ministry of Agriculture and Forestry (MAF) and the Ministry of Natural Resources and Environment (MoNRE), will provide in-kind co-financing to the project in form of inputs will be staff time contributions by national-,provincial- and district-level staff and serve as the main political partners. The government's role in this respect is driven by the following considerations:
    - The mandates and functions of the two ministries, notably their sectoral relevance and the fact that MoNRE is the GCF National Designated Authority (NDA) of Lao PDR and is responsible for the EPF; and
    - MAF serves as the Chair of the REDD+ Task Force and is (together with the Ministry of Finance) the contract signing party with the FCPF Carbon Fund to sell GHG emission reductions and receive results-based payments. MAF is further responsible for the FPF, which will have two roles as: a) a beneficiary receiving capacity building support; b) once its capacities are satisfactorily built to potentially channel funds to beneficiaries.
- **KfW** will implement through BMZ financing (Euro 2.25 million) parts of activities 3.1.1. through its Village Forest Management Programme (VFMP).
- **ADB** will provide co-financing of Euro 13.07 million to implement Activity 2.1.3 (in conjunction with the Sustainable Rural Infrastructure and Watershed Management Sector project, SRIWSM).
- The **IFAD** PICSA loan project with the Government of Lao PDR will co-finance Project 2 with Euro 2.53 million to support the implementation of Activity 2.1.3 . IFAD will provide loans direct to the Ministry of Agriculture. The IFAD loan is a stand-alone, sovereign loan to the Government, which will be supervised on technical and fiduciary aspects. IFAD will also supervise procurements. IFAD supervision will involve field missions to the project area to check compliance with procedures.
- The **World Bank** through the FCPF Carbon Fund will co-finance Project 2 with EUR 15.64 million to support and sustain the implementation of activities under Components 2 and 3. World Bank co-finance will implement Activities 2.1.4 and 3.1.2 through the operationalization of the Benefit Sharing Plan in the six target provinces.

7.4 Legal and Contractual Agreements

To implement Project 2, GIZ will need to establish legal arrangements with new partners (such as the World Bank) and amend legal arrangements with the main partners of Project 1 (see Figure 41 below):

- The German Federal Ministry for Cooperation and Development (BMZ) will amend the commissioning to GIZ with the implementation of Project 2 (amended commissioning agreement). The GCF will transfer funds based on the Funded Activity Agreement (FAA) to the Accredited Entity GIZ.

In order to implement Project 2, GIZ will need to establish legal arrangements with a new partner (World Bank) and amend legal arrangements with the remaining partners of Project 1 (see Figure 41 below):

- The German Federal Ministry for Cooperation and Development (BMZ) will amend the commissioning to GIZ with the implementation of Project 2 (amended commissioning

agreement). The GCF will transfer funds based on the Funded Activity Agreement (FAA) to the Accredited Entity GIZ.

The Government of Lao PDR (represented by MAF and MoNRE), as the Executing Entity (EE) will sign a subsidiary agreement with GIZ (AE) based on GIZ standard operating procedures for grant agreements. This subsidiary agreement establishes the legal basis on which GIZ makes the GCF Proceeds available to the Environmental Protection Fund (EPF), as under Project 1, to enable the EPF to continue managing and operating grants disbursement through the Climate Change Funding Window, in accordance with the AMA and FAA. Furthermore, GIZ (AE) will extend the under Project 1 signed co-financing agreements with KfW, ADB and IFAD and will secure co-financing by the World Bank.

Finally, GIZ (AE) will amend the implementation agreement signed under Project 1 with the Government of Laos.

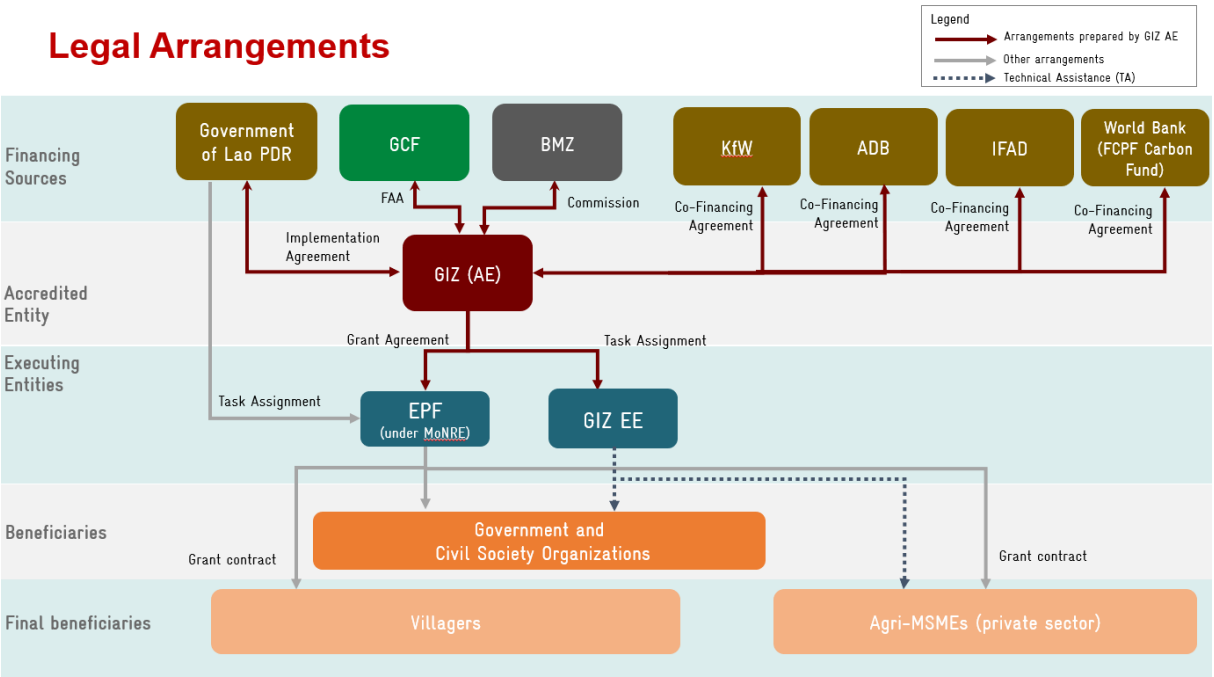


Figure 41. Contractual Arrangements

7.5 Flow of Funds Structure

The following

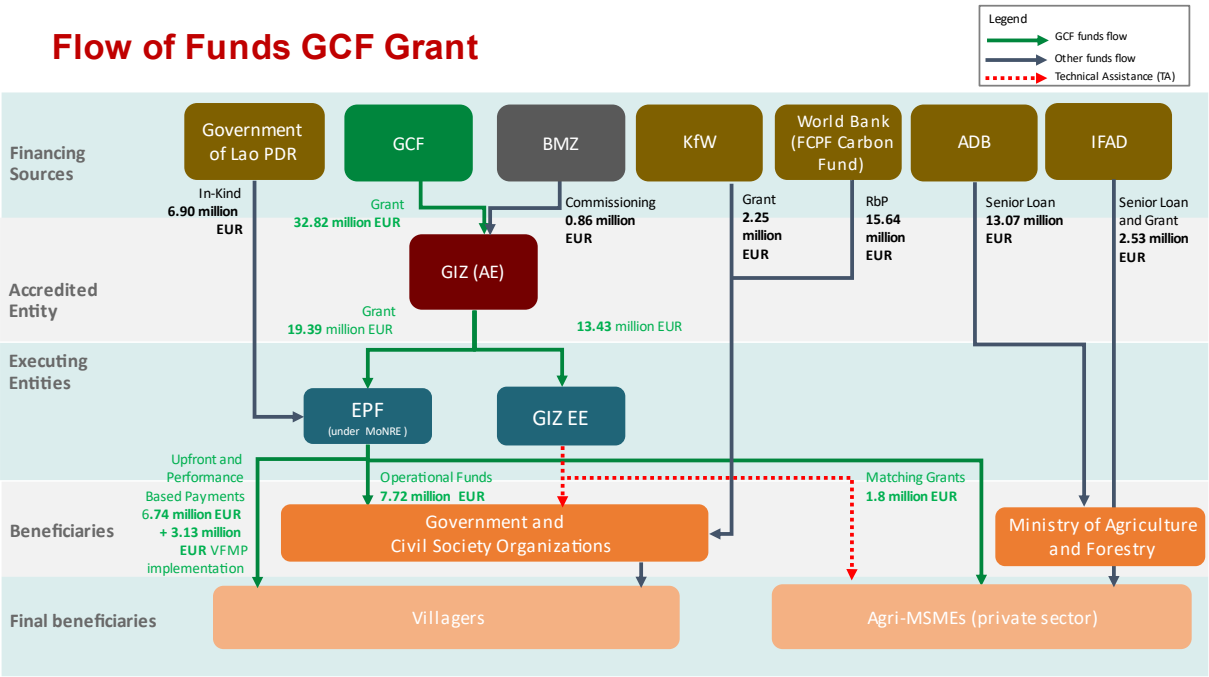


Figure 42. Flow of Funds GCF Grant depicts the overall flow of funds for Project 2. Funds from GCF will be transferred to GIZ as AE who will then transfer funds through the EPF Climate Change Funding Window to the beneficiaries and directly to GIZ Lao PDR (in its role as EE). KfW, World Bank, ADB and IFAD provide co-financing through the Government of Laos.

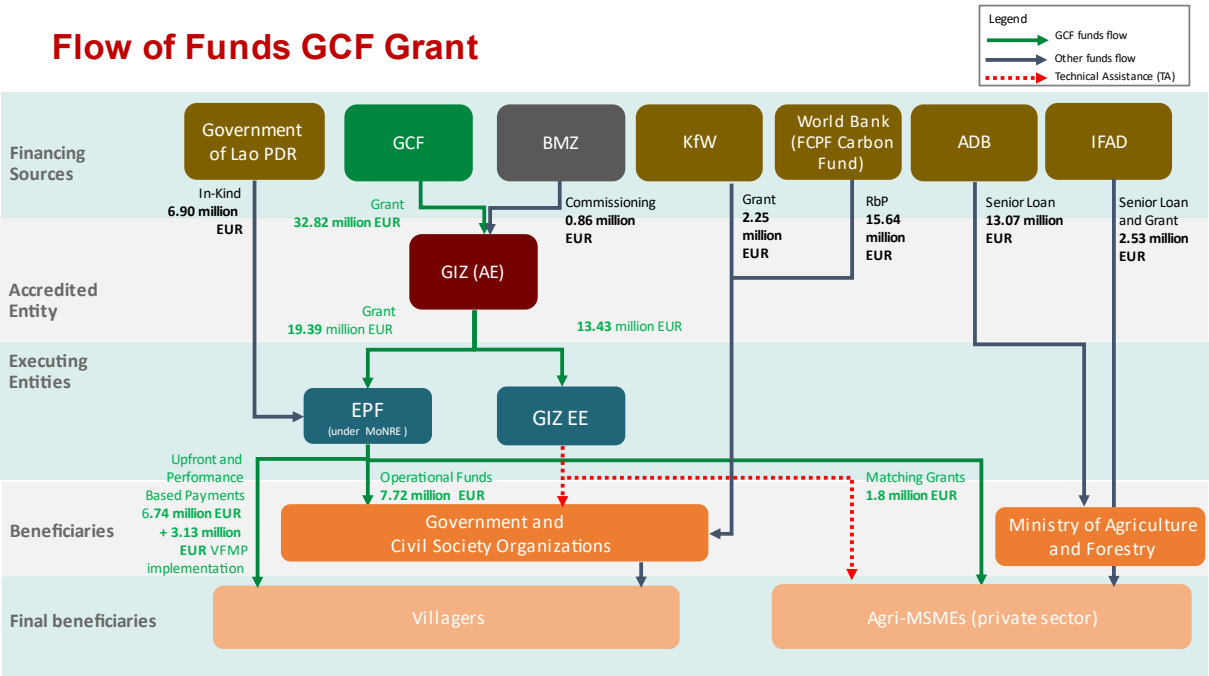


Figure 42. Flow of Funds GCF Grant

<u>Climate change funding window project cycle and fund disbursement process</u>

As described above, GIZ will make GCF Proceeds available to the Environmental Protection Fund (EPF), who will then channel funds to the beneficiaries through the Climate Change Funding Window, developed and utilized under Project 1. Detailed procedures are outlined in the Climate Change Funding Window Operations Manual (Annex 21).

The EPF, as described in the Operations Manual (Annex 21), is responsible for the administration and transfer of project funds to beneficiaries, including all related financial monitoring and auditing and ensuring compliance with the GCF ESS and Gender requirements. Detailed responsibilities and the role of the NPMU and EPF are stated under chapter 1.4 Processes and Responsibilities in the Operations Manual.

Grant payments channelled through the Climate Change Funding Window are of five types: operational funds, investment payments, upfront payments, bonus payments and matching grants. Operational payments ensure the implementation of planned activities (for instance, capacity development measures, equipment procurement, etc.). Upfront payments are ex ante payments issued to beneficiaries to support defined activities (outlined in a written budget request submitted by the beneficiary to the NPMU). Bonus payments are ex post payments issued by the Climate Change Funding Window to support defined activities that have been achieved according to a pre-defined performance metric. Investment payments are ex ante payments issued to VFAG-Cs to support activities listed in a white-list (for Good Agriculture Practices). Matching grants are payments issued in form of business contracts for agri-MSMEs to support (linked to Activity 2.2.1), and were redesigned under Project 2.

The choice of payment modality for particular project elements has been made primarily on the basis of beneficiaries' capabilities and incentives (i.e. a realistic assessment of their ability to implement activities using pre-existing skills and financial resources). Note, however, that in some respects the distinction between upfront payments and performance-based payments is somewhat artificial. Upfront payments will be issued on an annual basis. This means that, if continued funding is required, the beneficiary will be required to submit a new funding request. This provides an opportunity for the NPMU technical team to assess beneficiary performance to date and, if needed, to stipulate corrective actions or to withhold subsequent payments. Thus, even for upfront payments there is a performance-based element.

Grant payments to beneficiaries through the Climate Change Funding Window will range between approximately Euro 10,000 to Euro 50,000. The value of each grant payment will be determined by the amount requested by the beneficiary for specific activities (in the form of an ex ante written funding request), the amount subsequently agreed with the NPMU technical team and the beneficiary on the basis of the beneficiary's initial request, and – if there is an ex post performance element – on the verified performance of the implemented activities. The basis for all payments besides matching grants is detailed annual workplans for national, provincial and district (including village) levels. Workplans will be developed during joint planning meetings and through the participation/involvement of all concerned stakeholders (government, CSOs, private sector, etc.). Within those plans, the timelines, budgets, concerned organizations, implementing agencies, performance metrics (if relevant), etc. will be noted and agreed on.

Through the Climate Change Funding Window, the EPF will channel Euro 16.5 million of the GCF grant to Project 2 beneficiaries (Table 32 below).

Table 32: Climate Change Funding Window Grant Allocations

Climate Change Funding Window Sub-Window	Total Operational Funds (Euro)	Total Upfront Payments (Euro)	Total VFMP/ViFoCA Implementation	Total Performance-based Payments (Euro)	Total Payments (Euro)

Government and CSOs[134]	7.72 million				7.72 million
VFAGs		3.84 million	3.13 million	2.9 million	9.87 million
Agri-MSMEs		1.8 million			1.8 million
Total	7.72 million	5,64 million	3.13 million	2.9 million	19,39 million

Table 33: Activities and Eligibility Criteria for specific Beneficiaries of the Climate Change Funding Window

Beneficiary Category	Activities supported through the Climate Change Funding Window	Eligibility Criteria to receive Funding through the Climate Change Funding Window
Government agencies (at national, provincial and district levels)	Law enforcement; land use planning; agriculture and forestry; MRV; safeguards implementation	▪ Approval of budget requests submitted to the NPMU
VFAG	PSAP investment plans, VFAG-related management and monitoring	▪ Eligible VFAGs must be in the target villages. VFAG guidelines outline various conditions and criteria that VFAGs must comply with. This includes (among others): Approval of budget requests submitted to the NPMU; establishment of a VFAG committee in beneficiary villages; activities seeking funding conform with a white list of eligible activities (PSAP). ▪ For more information please refer to the VFAG guidelines (Annex 2f).
Micro, Small and Medium agri-Enterprises (MSMEs)	Matching grants (up to 50%) to support climate resilient and deforestation free value chain development	• Agri-MSME • Focus on processing or marketing at least 1 commodity within the subset of the "White List" • Eligible investment areas (see table Indicative positive list of investment categories) • Must be officially registered with DoIC in Lao PDR • Company must be in operations for at least 2 years. • Must have operations in one of the 6 target provinces (at the province, district, or village level) • Must have a bank account at the point of matching grant application; must show financial statements for at least one year.

7.6 Governance Structure

The National Project Steering Committee (NPSC) provides administrative oversight of the project, ensuring coordination across ministries – initially for Project 1 and upon approval also for Project 2. The NPSC provides strategic implementation guidance to the National Project Management Unit (NPMU) and Provincial Project Steering Committees (PPSCs, the Provincial REDD+ Task Forces), whilst ensuring compliance with the NDC, the National REDD+ Strategy and national socio-economic development objectives. The structure of the NPSC builds upon the existing institutional structure for REDD+ in Lao PDR. Thus, the REDD+ Task Force, as the responsible government entity for REDD+, serves as the NPSC. GIZ, as the GCF Accredited Entity (AE) and one of two Executing Entities (EEs), will maintain observer status on the NPSC in order to provide strategic guidance and ensure that GCF-related guidance and compliance is provided to the national actors. The National Project Steering Committee will meet twice per year throughout the project implementation period, as well as on an ad hoc basis as and when required.

[134] The Government and CSOs sub-windows are presented in combined form here because they closely complement each other (as merged in the Operational Manual).

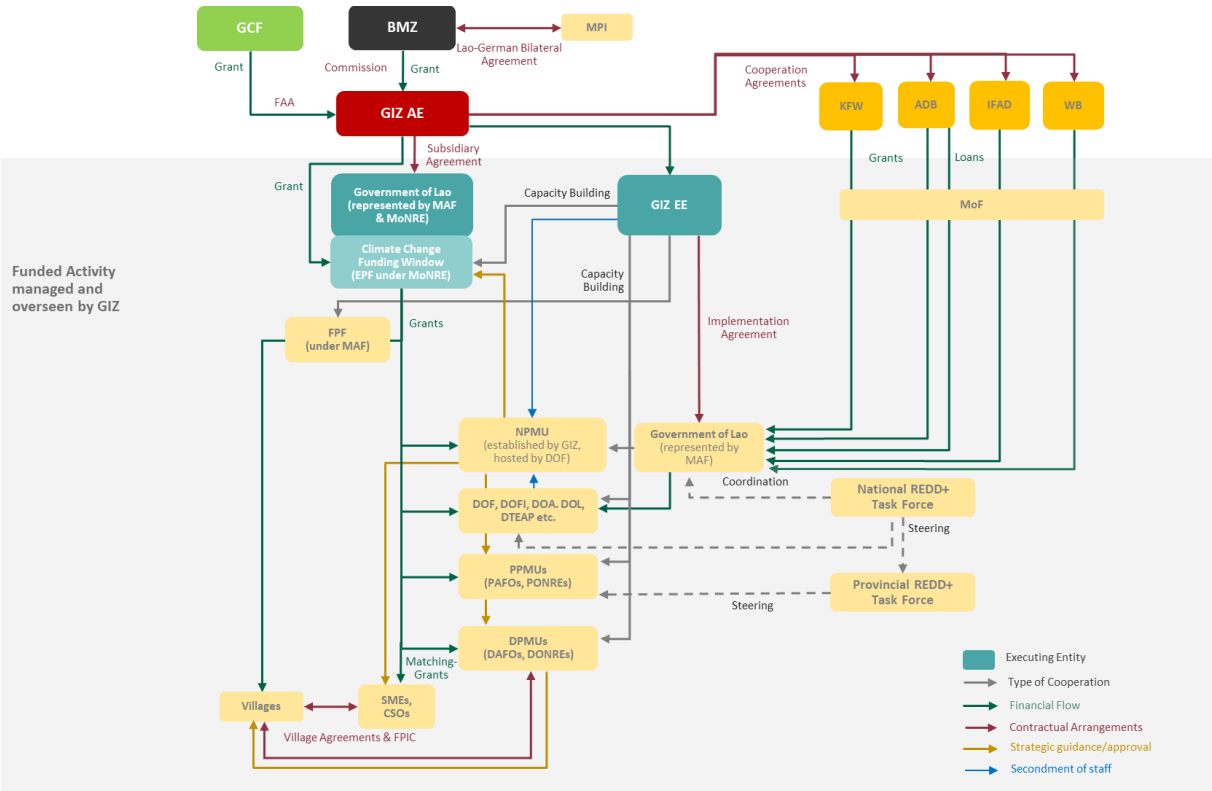
At the provincial level, the **Provincial Project Steering Committees** (PPSCs, one for each participating province) will be led by the provincial REDD+ Task Force in each province, which are already in place under the broader ER-Programme. At the provincial level, the PPSCs will meet 4 times per year and review project implementation progress and provide support to address potential bottlenecks related to implementation.

Project management units will be established at the national, provincial and district level, following the structure applied under Project 1. **The National Project Management Unit** (NPMU), established within the Department of Forestry (DoF) of MAF under Project 1, will remain in place to manage Project 2. The NPMU's physical location in DoF will continue to foster local ownership of the project, build institutional capacity and to ensure continuous linkage with Government policy-making and implementation of other initiatives. The same NPMU structure will be used for the implementation of GIZ-managed BMZ financing and activity implementation.
NPMU will continue to closely coordinate with the responsible government agencies on relevant activities and will provide technical and financial management support. In relation to the operationalisation of the Climate Change Funding Window the NPMU will take following responsibilities:

- Revision, and consolidation and approval of the Annual Work Plan (AWP)
- Supporting the preparation of quarterly plans at the national, provincial and district level
- Provision of technical assistance to national government entities, PPMUs, DPMUs and civil society organizations (CSOs)
- Assigning a NPMU team to supervise the implementation of national government entity and CSO quarterly plans
- Appraisal, approval and monitoring of all quarterly plans (following criteria outlined in the Operations Manual in Annex 21)
- Final approval of "VFAG Fund Requests" from VFAG-Cs
- Jointly approval together with the EPF and GIZ of applications of Agri-MSEMs Matching Grants during NPMU quarterly meetings
- Monitoring of the Agri-MSEMs Matching Grants investments
- Support the preparation and final approval of monthly implementation reports
- Give recommendations to PPMU and DPMUs based on implementation monitoring
- Supporting risk management processes as outlined in the Project Operations Manual
- Oversee project implementation

PPMUs and DPMUs, under the instruction of the NPMU, will assist the NPMU team in executing the above responsibilities. In addition to mirroring national-level responsibilities at the local level, PPMUs and DPMUs will have an additional responsibility at the provincial and district levels. In the event that project beneficiaries (e.g. VFAGs) are not able to independently prepare adequate annual operational plans and budgets, PPMUs and DPMUs will assist beneficiaries to complete appropriate plans. Detailed responsibilities and processes are described in the Climate Change Funding Window Operations Manual.

The Figure 43 below illustrates the governance structure.



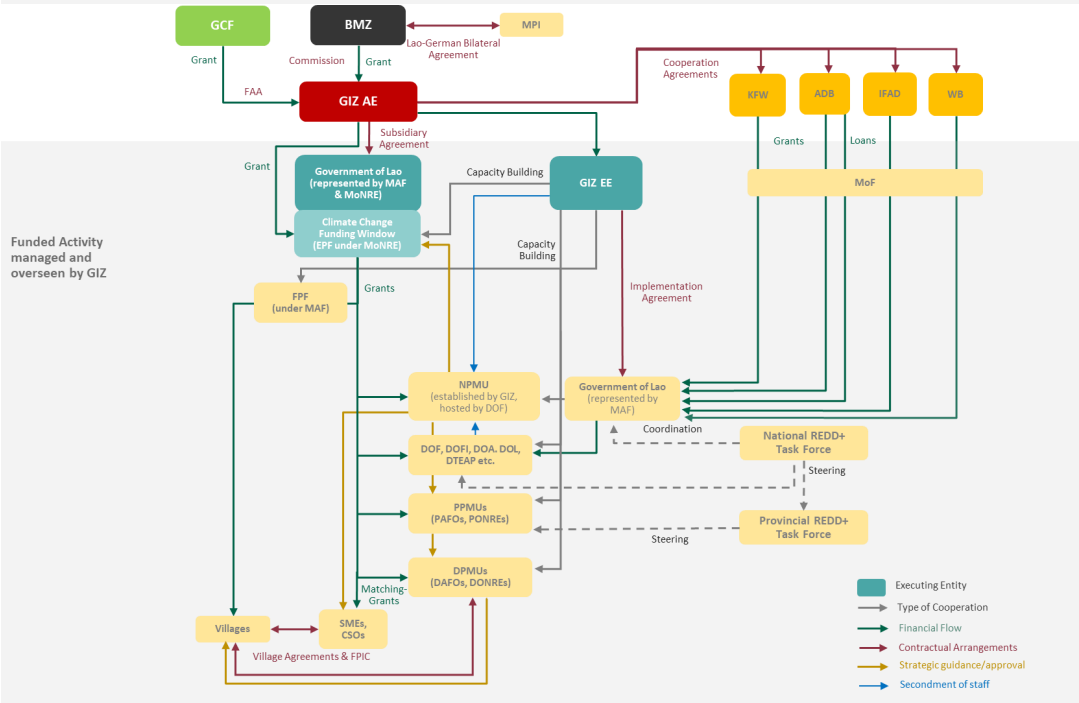


Figure 43. Governance Structure

7.7 Knowledge Management

The table below summarises the knowledge management for Project 2 that already reflects lessons learnt from Project 1.

Table 34: Knowledge Management Plan

Knowledge Required and created by the Project
A.1. What knowledge is required by the Project during implementation?

- Public engagement processes are essential for REDD+ and for enhancing the resilience of livelihoods and ecosystems. However, many institutions do not have the necessary resources to undertake awareness-raising activities and campaigns. Agencies need to be supported in developing awareness-raising strategies and the associated capacities, including budgets, equipment and skills.
- Many government institutions state they have only basic knowledge of REDD+ and of adaptation measures to strengthen the resilience of livelihoods and ecosystems. Knowledge of REDD+, its aim (reducing deforestation and forest degradation), its relationship and synergies with adaptation approaches and overall relation to land use planning, sustainable forest management and improved agricultural practices, will further developed during Project 2. Specific emphasis will be placed on adaptation information and mainstreaming as the scope of Project 2 has been expanded to include adaptation.
- The ability to assess the effectiveness of Project 2 requires knowledge on Monitoring and Evaluation, information and communications technology, data collection and analysis systems, IT software and hardware.

For the sustainable implementation of Project 2 Components and Outputs, the following specific knowledge is required:

- Knowledge on PSAP practices
- Knowledge on financial literacy for business plan development, financial analysis, planning and accounting.
- Knowledge on well-structured cascading data collection and information systems, specifically spatial information systems, for village-level land use planning.
- Knowledge on sustainable land use practices, including sustainable forest management and forest landscape restoration

A.2. What processes and individuals will contribute to generating, processing and disseminating this knowledge?

Comprehensive communication and exchange of information about relevant topics for land users, politicians and the broader public will be provided, so they understand the purpose and benefits of REDD+, its synergies with climate change adaptation, and the need for behavioural change of business-as-usual land use. Coordination with the Designation National Authority (DNA) at MONRE (the same institution as the GCF NDA) will ensure the provision of relevant information to the DNA subsequent BUR and National Communications. Communication and collaboration with national universities will be sought to provide the programme with key lessons learned and relevant education material, as well as to support these universities in acquiring research projects related to REDD+ and climate change adaptation.

For awareness raising, three campaigns will be organized:

- One campaign on laws and the regulatory framework of the forestry and agricultural sector (closely linked to Activity 1.1.3 (improved law enforcement)).
- One local media campaign on REDD+ and the needs to reduce deforestation and forest degradation. The campaign will be implemented in local newspapers in all district of the provinces. It will include the negative impacts of deforestation on the resilience of livelihoods and ecosystems and the potential strategies to sustainable land use.
- One school campaign on the importance of sustainable land use and REDD+ and its synergies with adaptation. Education material will be distributed in the target districts and local teachers will be trained.

Other knowledge processing/dissemination activities/processes include:

Component 1

- Trainings on key laws and regulations (e.g. Forest Law, Land Law, PMO 9, PMO 15) for government authorities (national, provincial, district and *kumban* level), civil society organizations and villagers.
- Trainings on strengthened standard operational procedures and anti-corruption safeguards for national, provincial and district authorities (POFI, DOFI; venue, transportation costs, trainers, training materials)
- Trainings for targeted individuals (with intermediate experience on GIS/mapping) to use remote sensing data, generating maps and supporting monitoring of deforestation to support POFI and DOFI with monitoring deforestation.

- Dissemination of regulations and guidelines on permitted and prohibited clearing and utilization of forest (timber and non-timber) products, as well as streamlined, accessible and effective reporting channels to CSOs, villagers, etc.
- Trainings for PAFO, DAFO, PONRE, MONRE, POFI and DOFI staff on reporting channels (venue, transportation costs, trainers, training materials)
- Awareness-raising and capacity building on revised guidelines for land-use planning (including forest landscape restoration (FLR)) on province and district levels
- DAF capacities will be supported to assess options for participating in market and non-market voluntary REDD+ initiatives .
- EPF capacities will be developed for enabling the fund to identify and access additional sources of climate finance and to work with private sector agri-MSMEs in the development of climate-resilient value chains.
- FPF's capacities will be supported to enable it to receive, manage and disburse REDD+ results-based payments, other international sources.

Component 2

- Exchange workshops on good practice in the implementation of the PSAP approach will be organized. The workshops will contribute to knowledge exchange and sharing of lessons learned, according to the cropping calendar.
- Documentation and dissemination of successful experiences and lessons learned of on the implementation of the PSAP and VFAG approach. Existing structures and media of national, provincial and district governments will be used. Translation of materials and trainings will be made available as necessary.
- Trainings for agri-MSMEs on business management and financial literacy: production costs, risks, creating business plans, bookkeeping, credit use, financial management, and saving accounts.
- Trainings on negotiation and marketing skills for villagers.

Component 3

- Training on Village Forest Management for PAFO, PONRE and DOF.
- Training for DAFO and DONRE staff on equipment use (GPS, camera and relascope).
- Training of PAFO and/or PONRE staff on the preparation of simple maps, data management and GIS applications
- On-the-job training and technical assistance to village land use and forest management committee and DAFO staff.
- Capacity building for VFOs and managing inclusive VFCs, and training for villagers on SFM, forest management plans and monitoring.
- Capacity building for provincial and district officials to support with forest management planning and eventual implementation (especially focused on provision of support to villagers).
- Capacity building for provincial and district authorities, as well as villagers (especially VFCs), on monitoring (e.g. forest inventory revision, remote-sensing and ground truthing) and enforcement (patrolling techniques).
- Capacity development for NPA and DOFI staff, and provision of equipment to support improved monitoring and enforcement of National Protected Area (NPA) management plans.
- Technical assistance, awareness-raising and capacity building to villagers to implement sustainable forest management and land use activities based on approved land use plans and co-management agreements.

A.3. Who are the key beneficiaries of the project-created knowledge?

Categories of programme beneficiaries will benefit from programme -created knowledge:

- The rural population as the primary Project
- National-, provincial- and district-level government agencies responsible for the management of natural resources in Lao PDR;
- Private sector: at least 120 agri-MSMEs .

Knowledge Products

B.1. What knowledge products will be created/supported by the Project?

- Project 1 has already developed land use planning guidelines and manuals – but Project 2 will support the mainstreaming of climate change adaptation considerations in them either through “adaptation supplements” or revisions to the guidelines
- Training materials on agri-MSME development
- Documentation of successful experiences and lessons learned from the implementation of PSAP
- In-depth value chain studies for key existing and alternative agricultural commodities – already undertaken under Project 1.
- Informative materials on sustainable forest management (brochures, posters, informative materials – including picture books, translation of materials into local languages), translation of rules and management plans for ethnic minorities
- Documentation of experiences and lessons learned with village-based forest management
- Training and workshop materials (for all trainings and workshops as described in this Feasibility Study.

B.2. How are the different needs of project beneficiaries addressed (e.g. gender, ethnic and educational backgrounds)?

- Outreach, extension/technical support at the community-level, workshops and capacity building activities will be socially inclusive, aware of culturally diverse contexts and norms, and take into consideration local knowledge. Where necessary, Project 2 will ensure the availability of translators (either from within the community or from external sources, if necessary) to facilitate the dissemination of knowledge and information.
- To ensure the widest dissemination and disclosure of Project information, including any details related to applicable environmental and social safeguards, local and accessible disclosure tools including audio-visual materials such as flyers, brochures, videos and community radio broadcasts will be utilized in addition to other communication modes. Furthermore, particular attention will be paid to women, ethnic groups, illiterate or technologically illiterate people, and people with hearing or visual disabilities, people with limited or no access to internet and other groups with special needs. The dissemination of information among these groups will be carried out with the programme counterparts and local actors such as village leaders, producer associations, CSOs, Lao Women´s Union, among other regional actors.
- Opportunities for collaboration with other stakeholders (e.g. CSOs) will be sought out to strengthen stakeholder outreach and the engagement of various ethnic groups and vulnerable households.
- A participatory and inclusive approach will be applied that consider regional and cultural diversity within the programme area. FPIC processes will be initiated with all participating villages.
- Programme staff and trainers will include male and female representatives from diverse ethnic groups. They will all receive training on gender equality and social inclusion within the context of the programme.

Knowledge Mainstreaming and Sustainability

C.1. How is the project’s knowledge management approach linked to complementary information channels (e.g. government, donors, CSOs)?

Lessons learned and information sharing will be conducted at the policy-making level to inform national stakeholders and policy makers on Project progress and the key lessons learned that can support the implementation of REDD+ at the national level while realising its adaptation synergies.

C.2. How will knowledge benefits be sustained beyond the lifetime of GCF funding?

The long-term sustainability of programme interventions is enhanced by the continuation on Project 2 of the focus on individual and institutional capacity building, both of the implementation entities and the key beneficiaries. Measures focused on institutional strengthening at the provincial, district and local levels form an essential element of the individual activities, given local capacities and the generally low level of knowledge on sustainable practices. Government entities and programme beneficiaries will have improved their knowledge and skills for sustainable, climate-resilient land use management and REDD+, and thus it is likely they will continue to support such measures after Project 2 completion.

8. Project Funding Justification

8.1 Justification for GCF Funding Request

After decades of losing tropical forest, Lao PDR is actively seeking to implement an ambitious REDD+ emission reductions programme. Laos has committed substantial domestic resources, and has worked closely with bilateral and multilateral donors, to reach its current level of REDD+ readiness and ability to transform its forest sector. But capacity and funding gaps remain. No developing country has ever managed to achieve sustainable management of its forests and landscapes alone anywhere in the world. The degree and complexity of the necessary change is high. The need for financial and technical assistance is high. The updated NDC (2020) explicitly highlights the need for external support in achieving the 70% forest cover and the conditional target for emission reductions.

At the same time, Northern Lao PDR is among the most vulnerable regions in the country to climate change, which poses substantial risks to the local population who are highly dependent on the particularly exposed agricultural sector for their livelihoods and wellbeing. Climate change poses a risk to human wellbeing, food security, and ecosystem health. The updated NDC notes the forestry and agriculture sector are among prioritized sectors in terms of climate change adaptation, and specifically highlights the need to strengthen cross-cutting measures with clear climate change mitigation and adaptation benefits. The AFOLU sector has substantial potential to strengthen cross-cutting measures, and Project 2 has been designed to strengthen the role of adaptation through building capacities, strengthening the use of climate information in planning and decision making, mobilizing finance for both mitigation and adaptation in the AFOLU sector, and scaling up cross-cutting investments with clear adaptation and mitigation benefits. Building on, and coordinating with, complementary initiatives, Lao PDR will deploy GCF support to remove investment barriers to unlock future results-based payments, domestic taxes and fees, and to create a sustainable environment for scaling-up REDD+ and climate resilient land use activities. The transformation envisioned by the programme requires the active participation of private sector actors in the forestry and agriculture sectors. However, sustainability focused markets are severely underdeveloped and those focused on deforestation free products are almost non-existent. The development of these markets necessitates that significant technical support and targeted financial support is also provided to the private sector.

Lao PDR needs GCF support in the form of a patient long-term commitment, which goes beyond the potential of Laos's existing development partners and other potential financing alternatives:

- **Alternative 1 – More public financing:** The Government of Lao PDR is committed and contributes a substantial amount of co-finance (Euro 11.8 million) to Project 1 and anticipates a co-financing contribution of EUR 6.9 million to Project 2.
- **Alternative 2 – More grants from other development partners:** All of Lao PDR's main development partners in the forest sector already support the GCF project. Germany and Japan have both committed grant financing to Project 1, and ADB and IFAD have committed loan packages for the implementation of improved agricultural practices and to reduce the pressure on expansion into forested landscapes. The World Bank (FCPF Carbon Fund) is offering Lao PDR REDD+ results-based payments. Additionally, the FCPF has worked closely with GIZ and the government to support the development of the GCF Programme by scheduling the ESMF and gender work streams to match the project's needs. The FCPF has also provided key data for the

development of the project. With this support, there are still gaps to meet the country's ambitious climate targets.

- **Alternative 3 – Additional loans for the Government of Lao PDR:** According to the IMF's Debt Sustainability Analysis, *"Lao PDR's risk of external debt distress remains high, suggesting the urgent need to tighten fiscal policy, strengthen public financial management, and develop a comprehensive medium-term debt management strategy."* Despite these constraints, the government borrowed Euro 24.1 million from ADB and Euro 11.35 million from IFAD to complement both GCF projects. Since the development of Project 1, Lao PDR's economy has been hit hard by the COVID-19 pandemic. UNICEF released a series of reports in 2021 that note the country's economy could contract by 1.8-3.3%, and there are substantial urgent investments needed to support the country´s pandemic response (e.g. health care, nutrition and food security, among others) (UNICEF Load PDR, 2021). In August 2020, Moody's downgraded Lao PDRs issuer rating to Caa2 from B3 noting a negative outlook and highlighting *that "Laos is facing severe liquidity stress, given sizeable debt servicing payments due this year and persisting until 2025, and constrained financing options. Heightened liquidity risk is exacerbated by weak external and fiscal buffers and poor governance, and points to a material probability of default in the near term." (Moody's 2020).* Thus, there is limited ability for Lao PDR, a LLDC, to take on additional loans for climate change in this particularly challenging context, although support for a climate action and a green recovery to the COVID-19 pandemic is urgently needed.
- **Alternative 4 – Loans for households and agri-MSMEs:** The beneficiary groups – village and subsistence farmers – are among the poorest population groups in Lao PDR, with a high dependence on natural resources and poor access to markets and financial services, and they have insufficient assets for the repayment of loans. Approximately 28% of inhabitants in the Project area live below the poverty line, higher than the national average of 23%. The possibility of working with local financial institutions was scoped during the project formulation process. During the development of this FP, five local financial institutions were consulted to assess their potential support to the project and specifically for managing the matching grants for agri-MSMEs and developing tailored products. The consultations revealed that this would not be feasible amongst other reasons due to the inability of institutions consulted for managing international grant finance and their operational footprint in target areas. Thus grant financing combined with technical assistance has been determined to be the most appropriate financing instrument for these beneficiary groups. The GCF's added value will be to support the poorest population groups of the country in the transformation towards more sustainable land use practices. Support for agri-MSME's will require matching grants, to ensure their ownership and commitment to the project, while the provision of business plan development and investment support will enable them to implement and scale up more sustainable investments in the future, after the GCF project provides initial support to get their investments in sustainable and deforestation free value chains off the ground.

8.2 Choice of Instruments and Concessionality

In the absence of viable alternatives as described above, the Government of Lao PDR requests GCF grant financing. Grant financing combined with technical assistance has been determined to be the most appropriate financing instrument for the beneficiary groups under Project 2. The GCF's added value will be to support the poorest population groups of the country in the transition towards more sustainable land use practices. Support for MSME's will require matching grants, to ensure their ownership and commitment to the project, while the provision of business plan development and investment support will enable them to scale up more sustainable investments in the future after the GCF project provides initial support to get

their investments in sustainable and deforestation free value chains off the ground. Grant financing will enable the Project to:

- Help overcome the government's constraints to source public funding or assume additional debt to invest in measures needed to reduce deforestation and forest degradation and strengthen climate resilience.
- Demonstrate and scale-up investments in deforestation free, and climate-resilient agriculture, and forest landscape restoration and related value chains.
- Strengthen the use of climate-data in land use planning and ensure integrated planning at the watershed level (through scaling up the implementation of the revised PLUP 2.0 process, and related capacity development).
- Build the capacities of forest-dependent persons to understand climate-risks, and suitable risk reduction practices in the AFOLU sector, while supporting the capacity development of institutional structures (VFAGs) that may facilitate access to additional funds for climate change mitigation and adaptation in the future.
- Build national capacities to mobilize, channel and monitor climate finance, from both domestic and international sources.
- Strengthen an enabling environment for REDD+, climate-resilient agriculture and ecosystem-based adaptation in Lao PDR, including strengthened law enforcement and monitoring, and climate-informed land use planning.
- Strengthen the often-overlooked interlinkages between REDD+ and climate change adaptation, and support the mobilization of funds for cross-cutting measures in the agriculture and forestry sectors.
- Implement Lao PDR's updated NDC, including adaptation measures in the agriculture and forestry sector, and helping the country to meet conditional emission reduction targets.
- Facilitate the engagement of the private sector, and specifically agri-MSMEs through the use of matching grants, in the development of sustainable, climate resilient and deforestation free value chains that remain after project implementation. This would not happen in the absence of concessional finance due to the barriers faced by these actors to access finance in general and finance for sustainability-oriented investments in particular.

The Project will apply the following principles to ensure the efficiency and effectiveness in the use of grants:

- The AE and EPF will disburse GCF grants in tranches, with the second and consecutive tranches conditional on results delivered.
- Grant finance channelled by EPF will benefit from efficiency gains from the processes developed, and experiences generated, under Project 1. It will also help the fund acquire capacities related to climate finance and prepare them to develop, implement, manage and monitor their own GCF or climate finance projects in the future
- The GoL will make available unlocked financing (results-based payments, tax, fees) to finance sustainable deforestation-free and climate-resilient investments in AFOLU, replacing GCF grants and closing the funding gap to transform the forest sector.
- Concessionally to the private sector will be minimal and processes will be in place to ensure that matching grants are specifically targeted at closing the viability gaps faced by agri-MSME for investments that support the development of climate resilient and deforestation free value chains and the predictability of demand for sustainably produced agricultural products at village level.

In addition, lessons learned from Project 1 have been reflected in the design of the Project 2, where activities have been adjusted to strengthen climate change adaptation, and ensure the efficient and effective use of grant resources. A clear financial exit strategy has been

developed, which shows how project activities will contribute to a sustained paradigm shift, and continue to mobilize additional public and private financial resources in the future that will enable continued scaling up of sustainable land use practices and investments (see Section 6.5).

8.3 Financial and Economic Assessment

8.3.1 Financial Analysis

The financial analysis focuses on the two components that have the potential to generate financial reflows, specifically Components 2 and 3. The activities of Component 1 are of public good nature and will not generate financial reflows, even if they can contribute to further unlock climate finance.

Component 2

Component 2 promotes the transition to sustainable agricultural practices that do not put additional strain on existing forest resources. Most of GCF funding for Component 2 is concentrated in Activity 2.1.1, "Promotion of Sustainable (climate resilient and deforestation-free) Agricultural Practices (PSAP) approach." The objective of Activity 2.1.1 is to shift 17,400 hectares of land away from two unsustainable agricultural practices: (i) shifting cultivation of upland rice ("rice baseline") and (ii) unsustainable maize cultivation ("maize baseline") into climate-resilient and deforestation-free practices promoted under the PSAP approach – comprising tree-based systems, cultivated NTFPs, perennial cash crops, annual crops, vegetable gardens, fodder grass and improved grazing areas, and apiculture.

In the maize baseline scenario, a farmer cultivates one hectare of land exclusively with maize for an extended period and without rotation. Farmers are often lured by purchase contracts from foreign buyers, especially Vietnamese who use maize to feed pigs. This activity is profitable, but highly damaging to soil quality. In the maize baseline, it is estimated that 1 ha of land generates EUR 691 of revenues per year (subject to market conditions). This more than covers an estimated USD 441 in annual labour costs and other costs for purchase of seeds and small equipment. The NPV of baseline maize cultivation on one hectare of land over 20 years is EUR 894.

The climate-resilient and deforestation-free models promoted under the PSAP are for the most part financially more attractive than the baseline agricultural practices (See table below and Annex 3 for per-hectare NPV and IRR calculations for an indicative sub-set of production systems)[135] A GCF grant is still deemed as the most efficient and effective financial instrument. This is because subsistence farmers in the target areas face, in practice, much more substantial barriers that prevent them from capturing any financial upside from sustainable farming altogether. In particular, subsistence farmers may lack knowledge, awareness and expertise on sustainable farming, and lack access to downstream markets for any crops other than rice and maize. The GCF grant for component 2 will address capacity barriers, primarily through the implementation of the PSAP approach and will focus on providing farmers with downstream market access through the support of value chain development.

Component 3

Component 3 aims at the large-scale adoption of sustainable forest management practices across all forest types as per the categorisation of the Lao PDR government. Specifically, it aims to support the transition from unsustainable forest use which results in the gradual,

[135] When IRR calculations show an error, it is because the cashflow is already positive starting in year 1 of the IRR calculation period

complete depletion of economic value over an estimated period of 10-years. The NPV of such unsustainable practices is mildly negative (-USD 73/ha) – although in practice this is a subsistence practice done regardless of textbook financial considerations. The main financial reflow is assumed to happen under activity 3.1.1 village forest management where 191,500 hectares of forests will transition from unsustainable to sustainable forest management and utilization of NTFPs promoted as by the project ensure that the forest is never depleted, extending the period over which economic value can be extracted; as a result, the NPV of sustainable management is positive (circa EUR 450/ha over 20 years). It is assumed that the main returns from activity 3.2.1 will be generated through its contribution to delivering emissions reductions at scale and will be social and economic in nature.

As with Component 2, in theory the SFM model promoted by the programme is financially more attractive than the baseline practices. A GCF grant is still deemed as the most efficient and effective financial instrument. This is because beneficiaries in the target areas face, in practice, much more substantial barriers that prevent them from capturing any financial upside from SFM altogether. In particular, they lack knowledge, awareness and expertise – barriers that the GCF grant will help address.

The first three models in the table are the Business-as-usual models (Non timber forest production, shifting rice cultivation and unsustainable maize production). A 10% discount rate and a 20-year time horizon were used for the calculation of NPV. [136] Where internal rate of return (IRR) is not presented this could not be determined because the model was cashflow positive from year 1.

Table 35: Results of per hectare cashflow models

TYPE	MODEL	NPV (EUR)	IRR (%)	BCR (RATIO)	BREAKEVEN POINT (YEARS)
BAU	Non timber forest product production (Business-as-usual)	-136		0.7	21
	Rice: shifting cultivation	-288		0.9	21
	Unsustainable maize production	894		1.2	-
	Unsustainable forest management	-25	13%	0.9	15
Tree-based cultivation system	Orange	5,136	29%	4.4	6

[136] In line with other development agencies and to facilitate comparability among projects, GIZ applies a real discount rate of 10% in all its projects. All forecasts are in real terms (i.e. assuming zero inflation) and on a pre-tax basis.

Tree-based cultivation system	Rubber	-2,263	5%	1.3	19
\Cultivated NTFPs	Cardamon	1,089	25%	2.0	4
Perennial cash crops	Pineapple	502	17%	1.1	6
Annual crops	Rice: wet season paddy	456	25%	1.2	4
Annual crops	Maize: upland	589	24%	1.2	5
Annual crops	Maize: lowland	960	30%	1.2	4
Vegetable garden	Coriander	6,300	33%	1.3	3
Vegetable garden	Lettuce	3,917	22%	1.2	5
Vegetable garden	Onion	5,983	26%	1.2	4
Vegetable garden	Morning glory	552	12%	1.1	8
Apiculture	Bee Keeping[137]	7,441	136%	3.1	1
Tree-based cultivation system	Coffee	976	12%	2.2	9
Forestry	Sustainable natural forest management	256	42%	1.5	3

Source: prepared for GIZ

8.3.2 Economic and Landscape Level Analysis

The economic analysis applies to the entire project and uses the entire project budget (both GCF – 32.9 million - and GCF plus co-finance - 73.17 million) in economic NPV and IRR calculations. The lifetime of the programme (period over which the programme will bear its entire environmental benefits and socioeconomic co-benefits) is estimated at 20 years[138],

The overall economic results for the model were calculated for project and baseline scenarios. There are two separate sets of economic results provided; one from the perspective of the GCF, which includes only costs borne by the GCF. The second set of economic results includes all project costs paid by the contributing funds (in other words including contributions from BMZ, Laos Government and other partners).

The landscape level economic model compares two scenarios: a business-as-usual and a project scenario. The business-as-usual scenario assumes that unsustainable land use practices including Non-Timber-Forest-Product harvesting, unsustainable forest management,

[137] The contribution of beekeeping to the model is marginal and the financial indicators represent one family under the project adopting beekeeping during PSAP rather than a per hectare calculation.
[138] This excludes the project's mitigation impact, as that is calculated against a FREL and only for the duration of the project implementation period.

shifting rice cultivation, and unsustainable maize production, are continued across 208,900 ha of the area under direct intervention of activities 2.1.1 and 3.1.1.

In the project scenario, land use changes have been modelled according to a four-year transition from three unsustainable land uses towards a subset of models under the "White list for the Promotion of Sustainable Agricultural production (PSAP)". The transition of 17,400 hectares of unsustainable agricultural land use practices to sustainable practices under Component 2 is shown in Figure 44.

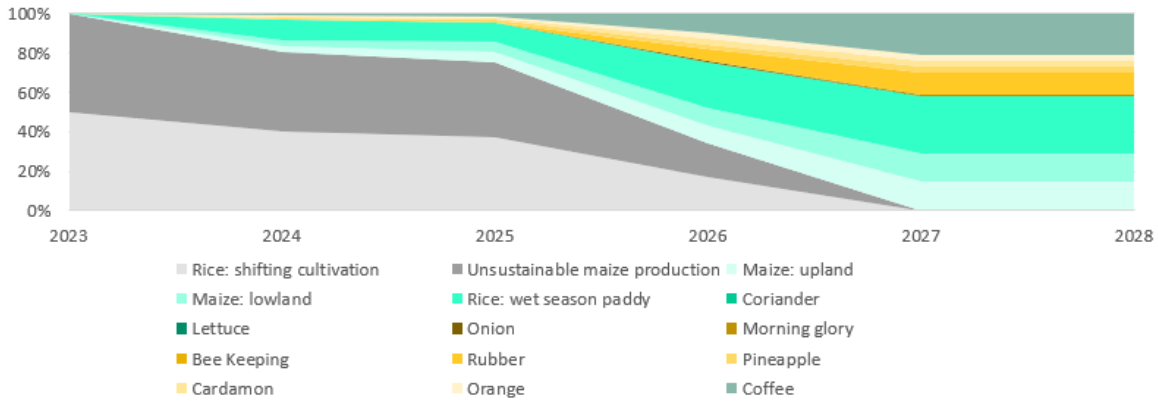


Figure 44. Transition to sustainable agricultural land uses
Source: prepared for GIZ

For Component 3, the transition from unsustainable management of forests to sustainable forest management and sustainable NTFP utilisation in 191,500 ha is shown in the Figure 45 below.

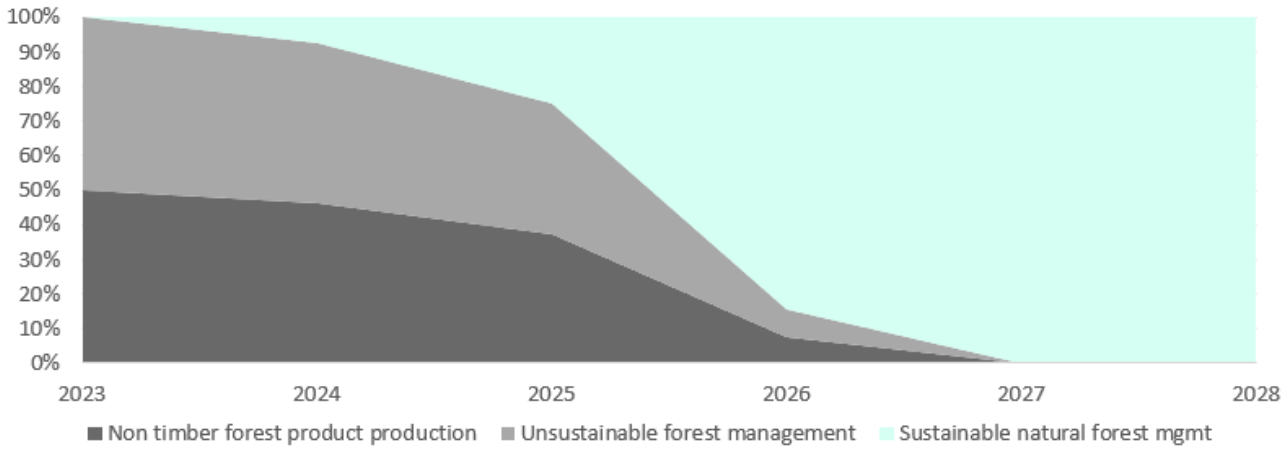


Figure 45. Transition to sustainable forest management
Source: prepared for GIZ

Carbon inputs from the model were derived from an ex-ante estimate of an average of 1.14 million tCO_2eq per annum over the first four years of the project (see GHG note for assumptions on carbon calculations). Estimates of carbon prices vary widely. This economic analysis uses a conservative USD 5 per tCO_2eq, given that it is the price point at which most payments for ERs under national or sub-national level REDD+ have been made (both under the GCF pilot for results-based payments and the FCPF Carbon Fund). Using estimates of the social cost of

carbon or following the European Investment Bank (EIB) and European Commission (EC) recommend using a central value of EUR 25/tCO_2eq in 2010, raising gradually to EUR 45 by 2030 would result in significantly higher results

Table 36: Economic results over the landscape area

ECONOMIC INDICATOR	UNITS	TOTAL PROJECT COSTS	ONLY GCF FINANCING	BASELINE
NPV	EUR	13,194,342	48,858,089	-10,128,239
IRR	PERCENT	13%	31%	28%
BCR	RATIO	1.3	1.4	0.9
BREAKEVEN POINT	YEARS	10	6	16

Source: prepared for GIZ

The project will also deliver significant environmental and social co-benefits as outlined in chapter 9 including the improved resilience of ecosystems and the delivery of ecosystem services, however, due to the wide number of variables[139] that ultimately determine these values and the wide range of estimates, we opted for not including them in the economic analysis. However, the value of any ecosystem service would only add to the positive economic return.

[139] See for instance TEEB, *The Economics of Ecosystems and Biodiversity for National and International Policy Makers* (2009).

9. Project Impacts and Benefits

9.1 Climate Change Mitigation Benefits

GHG mitigation and carbon removals summary for Project 2 and programme**:**

For the 7-year GCF programme implementation period (2020-2027), the ex-ante estimate of reduced emissions and increased removals is 11.7 million tCO2eq (an estimated average of close to 1.7 million tCO2/year). This is comprised of 7.3 million tCO2eq emission reductions (due to reduced deforestation and forest degradation), which is equivalent to a reduction of 62% compared to the Forest Carbon Partnership Facility (FCPF) Reference Level; and an increase in removals equivalent to 4.3 million tCO2eq, which is an increase of 37% compared to the removals in the Reference Level (Table 37). Projections of emission reductions and removals beyond the programme implementation period are not calculated as impacts are calculated against a RL. [140]

For the programme implementation period 2020-2027: This results in an estimated cost per tCO_2eq of 10.04 Euro per tCO_2eq) and estimated cost GHG mitigation cost to GCF equivalent to (3.21 Euro/tCO_2eq).

Table 37: Summary of GCF programme GHG mitigation impact

GHG emission / removal source	Reference Level (tCO_2eq/year)	Annual net programme impact (2020-2027) 7 years (tCO_2eq/year)	Net GCF programme GHG mitigation benefit (tCO_2eq/year)	Est. net emission reduction Total 2020 – 2029 (tCO_2eq/year)
Deforestation	3,748,646	32,242	3,716,403	225,696
Forest degradation	6,748,827	1,014,829	5,733,998	7,103,804
Restoration	(1,418,502)	19,107	(1,437,608)	133,746
Reforestation	(545,904)	600,386	(1,146,290)	4,202,699
Total	**8,533,067**	**1,666,563**	**6,866,503**	**11,665,944**

Table 38: Key efficiency and effectiveness indicators – Programme

	Estimated cost per tCO_2 eq, defined as total investment cost / expected lifetime emission reductions (mitigation only)[141]	
GCF core indicators	(a) Total programme financing	€ 117.46 million
	(b) Requested GCF amount	€ 37.56 million
	(c) Expected lifetime emission reductions overtime	11.7 million tCO_2eq
	(d) Estimated cost per tCO_2eq (d = a / c)	€ 10.04 / tCO_2eq

[140] This is a key difference with the approach utilized to calculate ERs during the development of the feasibility for the programme and hence why there is a discrepancy with the ex-ante estimates provided at that state.
[141] Calculations are based on budget allocations for investment and do not consider budget allocations for PMC, M&E and incidentals

	(e) Estimated GCF cost per tCO_2eq removed (e = b / c)	€ 3.21 / tCO_2eq

Table 39: Key efficiency and effectiveness indicators – Project 2

	Estimated cost per tCO_2 eq, defined as total investment cost / expected lifetime emission reductions (mitigation only) [142]	
GCF core indicators	(a) Total project financing	€ 56.36 (mitigation)
	(b) Requested GCF amount	€ 23.36 million (mitigation)
	(c) Expected lifetime emission reductions overtime	4.6 million tCO_2eq
	(d) Estimated cost per tCO_2eq (d = a / c)	**€ 12.25 / tCO_2eq**
	(e) Estimated GCF cost per tCO_2eq removed (e = b / c)	**€ 5.08 / tCO_2eq**

All key assumptions are further described in the subsequent sections. Detailed GHG calculations are provided in an Excel workbook.

9.1.1 Methodology used for calculating GHG mitigation benefits

The methodological approach is based on the methodology used for the preparation of the Reference Level (RL) of the Lao PDR Emissions Reduction Programme (ER-P), which was submitted and approved (in June 2018) by the FCPF Carbon Fund and is compliant with the Carbon Fund Methodological Framework (Forest Carbon Partnership Facility, 2020) and the Lao PDR's Forest Reference Emission Level and Forest Reference Level for the REDD+ Results Payment under the UNFCCC – submitted in January 2018 (Government of Lao PDR, 2018). The approach equals a Tier 3 approach under the IPCC terminology.

The ER-P Reference Level accounting area covers precisely the same 6 provinces (Bokeo, Houaphan, Luang Namtha, Luang Prabang, Oudomxay and Sayabouri) as are covered by the GCF programme: the geographical footprints of the ER-P Reference Level and the GCF programme are identical.

For a detailed description of the Reference Level (RL) methodology, please refer to the ER-PD (Chapters 8 and 11) and respective Annexes (activity data, emission factors and forest degradation assessment) (Forest Carbon Partnership Facility, No Date). The same methodology will be replicated for the ex-post assessment of the achieved GHG emission reductions and removals within GCF programme, Project 1, Activity 1.6 with support from

[142] Calculations are based on budget allocations for investment and do not consider budget allocations for PMC, M&E and incidentals

JICA.[143] This will be also use for the determination of results-based payments by the Carbon Fund for the period 2019 – 2024 for which the RL is valid. The validity beyond 2024 is subject to further international guidance by UNFCCC.

9.1.2 Projection of the reference level without the implementation of the GCF programme (for 6 provinces)

To ensure full consistency with the RL methodology, first, the reference level 2005 – 2015 was projected for the duration of the GCF programme (2020-2027).

Table 40: Projection of the Reference Level

Category	FREL tCO_2eq/a	Projection for programme duration 2020-2027 tCO_2eq
Deforestation	3.748.646	26.240.519
Degradation	6.748.827	47.241.790
Reforestation	- 1.418.502	- 9.929.511
Restoration	- 545.904	- 3.821.330

Project activities were then assigned to a specific to activity category and associated land use change strata. Consistent with the RL methodology and IPCC guidance, carbon removals were spread over time (20 years).[144] Thus, if reforestation has taken place in the Reference Level, accounting of removals is spread over a period of 20 years. This recognizes that in forest ecosystems, forest biomass increase slowly over time to reach their full biomass and removal uptake takes time if there a change from lower carbon stock (non-forest land) to a higher carbon stock land use (e.g. regenerated natural forest) (IPCC, 2006)[145]. The same approach applies to the GCF programme implementation period (restoration and reforestation are partly accounted for depending on the start date of Project 1 (7/20) and Project 2 (4/20)). The removals that may happen after programme implementation are not accounted for.

9.1.3 Emission reductions and removals

The RL is used as a basis to develop the programme scenario. Using the RL and land use change matrix, the GCF programme interventions is linked with the respective activity data. Thus, each land-based intervention of the GCF programme (Component 2 and 3 interventions) is attributed to a specific land use class and land use change.

For example, the implementation of village forest management (Activity 3.1.1), will help protect forests from deforestation and degradation and will support regeneration of degraded forest. On average, approximately 75% of village forest management will be implemented on Current Forest/high-carbon-stock forest (EG/MD/CF/MCB) and 25% on Potential Forest (low-carbon-stock forest (P/B/RV). This is translated into a reduction of the change from MD/CF/MCB to P/B/RV (i.e. reduced forest degradation in the case of high-carbon-stock forest) and into a reduction of deforestation (P/B/RV to NF) in the case of degraded forest area.

Table 41 below summarizes the GCF programme interventions and their impacts on emission reductions and carbon removals in the land use change matrix. Considering that

[143] The new JICA project F-REDD will support FIPD/DoF to undertake the MRV as well as implement the National Forest Monitoring System. The methodology used will be the same and hence, we will be able to report on ex-post ERs respectively.
[144] For the expected removals for each five-year period, 25% for that period and for each of the next three five-year periods was accounted for. Note that, by using this methodology, removals from activities during the reference period also generate removals in the accounting period of 2020-2028.
[145] IPCC (2006) suggests default period of 20 year time interval for forest ecosystems to be established. See also Lao PDR ER-PD, Section 8.3.5, Step 4, available at https://www.forestcarbonpartnership.org/sites/fcp/files/2018/May/LaoPDR_ERPD_FinalDraftMay.2018-Clean.pdf

implementation of the GCF interventions is not likely to be 100% effective, adjustment factors were applied to account for imperfect effectiveness of GCF programme interventions.

For each programme and project activity (outlined in the project description) a different adjustment factor is applied. The quantitative values of the adjustment factors are based on consideration of the total implementation area and the observed deforestation/forest degradation and removals area. Further, the estimates are based on expert judgement and consultation with experts who have experience with programme implementation in Lao PDR, similar to the approach in the ER-PD development to estimate the ex-ante GHG emissions reduction potential and approval by the Technical Assessment Panel (TAP).

In total, the land-based activities of Components 2 and 3 (forestry and agricultural interventions) are expected to occur on an area of 1.6 million hectares within the selected 28 districts (30% of total district area; 5.41 million ha, or 20%, of the total 6-province area of 8.1 million ha). The interventions will be targeted towards deforestation/forest degradation hotspots[146].

[146] Please refer to programme area selection section in the feasibility study.

Table 41: Key GCF programme interventions, linkage to RL activity data and assumptions on effectiveness of interventions

Project activity	Activity 3.1. Implementation of village forest management		Activity 3.2 National conservation forest management (NPAs)		2.1 Promotion of private sector investments in community-based agroforestry	Activity 2.1-2.4. PSAP[147]	Activity 2.1-2.4. PSAP[8]
REDD+ activity	3.1. Reduced forest degradation	3.1. Restoration and avoided deforestation	3.2 Reduced forest degradation	3.2 Restoration and avoided deforestation	2.4. Reforestation	2.1-2.4. Reduced forest degradation	2.1-2.4. Reduced deforestati on
Intervention area Project 1	150,000	50,000	502,500	167,500	10,000	14,400	14,400
Intervention area Project 2	195,000	65,000	297,750	99,250	-	17,100	17,100
Total Intervention area	345,000	115,000	800,250	266,750	10,000	31,500	31,500
Effectiveness Factor[148]	2%	15%	2%	15%	80%	15%	15%
Reduced area due to effectiveness factor Project 1	3,000	7,500	10,050	25,125	8,000	2,160	2,160
Reduced area due to effectiveness factor Project 2	3,900	9,750	5,955	14,888	-	2,565	2,565
Reduced area due to effectiveness factor reduction (use of new change matrix)	6,900	17,250	16,005	40,013	8,000	4,725	4,725
LUC matrix from:	MD/CF/MCB	P/B/RV	MD/CF/MCB	P/B/RV	NF	MD/CF/MCB	P/B/RV
LUC matrix to:	P/B/RV	MD/CF/MCB	P/B/RV	MD/CF/MCB	P/B/RV	P/B/RV	NF
Emission factor	257	(257)	257	(257)	(48)	257	48
Impact category	Degradation	Restoration	De-gradation	Restoration	Reforestation	De-gradation	Deforestatio n

[147] Promotion of sustainable, climate resilient and deforestation free agricultural practices and technologies
[148] Factor that reduces deforestation / forest degradation compared to Reference level

Result of activity data on direct and indirect emission reduction and removals

As a result of the implementation programme activities the GCF programme will achieve:

- A reduction of deforestation and forest degradation of 32,355 ha
- An increase of restoration equivalent to 57,000 ha and 8,000 ha reforestation.

Table 42: Programme Area Impact

	Impact Area Project 1	Impact Area Project 2	Programme Impact Area
	ha	ha	ha
Deforestation	2.160	2.565	4.725
Degradation	15.210	12.420	27.630
Reforestation	8.000	-	8.000
Restoration	32.625	24.638	57.263
Total	**57.995**	**39.623**	**97.618**

- To maintain conservative assumptions in the overall programme impact most activities addressing deforestation are accounted for as degradation.

Emission/Removal factors (E/R factors)

For all calculations, the following emission and removal factors were used, fully consistent with the RL methodology (see ER-PD Chapter 8 and Emission and Removal Factor Report (DOF/MAF, 2018b). The emission factors are Tier 3 factors according to the IPCC definition. The following Table 43 summarizes the carbon stock and the carbon stock changes for land use changes.

Table 43: Assumed and quantified carbon stocks for forest and non-forest land cover types

Land cover classification code	Land cover classification	Above-ground and below-ground carbon stock (tCO_2eq)
EG	Evergreen Forest	733.43
MD/CF/MCB	Mixed Deciduous Forest / Coniferous Forest / Mixed Coniferous and Broadleaved Forest	322.89
DD	Dry Dipterocarp Forest	158.33
P/B/RV	Forest Plantation / Bamboo / Regenerating Vegetation	65.78
NF	Non-Forest	18.02

Table 44: E/R factors for land use changes (tCO_2eq) for above-ground and below-ground biomass

	EG	MD/CF/MCB	DD	P/B/RV	NF

EG	-	-410.5	-575.1	-667.6	-715.4
MD/CF/MCB	410.5	-	-164.6	-257.1	-304.9
DD	575.1	164.6	-	-92.6	-140.3
P/B/RV	667.6	257.1	92.6	-	-47.8
NF	715.4	304.9	140.3	47.8	-

Note: Negative figures indicate GHG emissions; positive figure indicate carbon removal

In total, compared to the RL, the GCF programme will achieve emission reductions and removals of 11.7 million tCO_2eq over the programme implementation period 2020-2027.

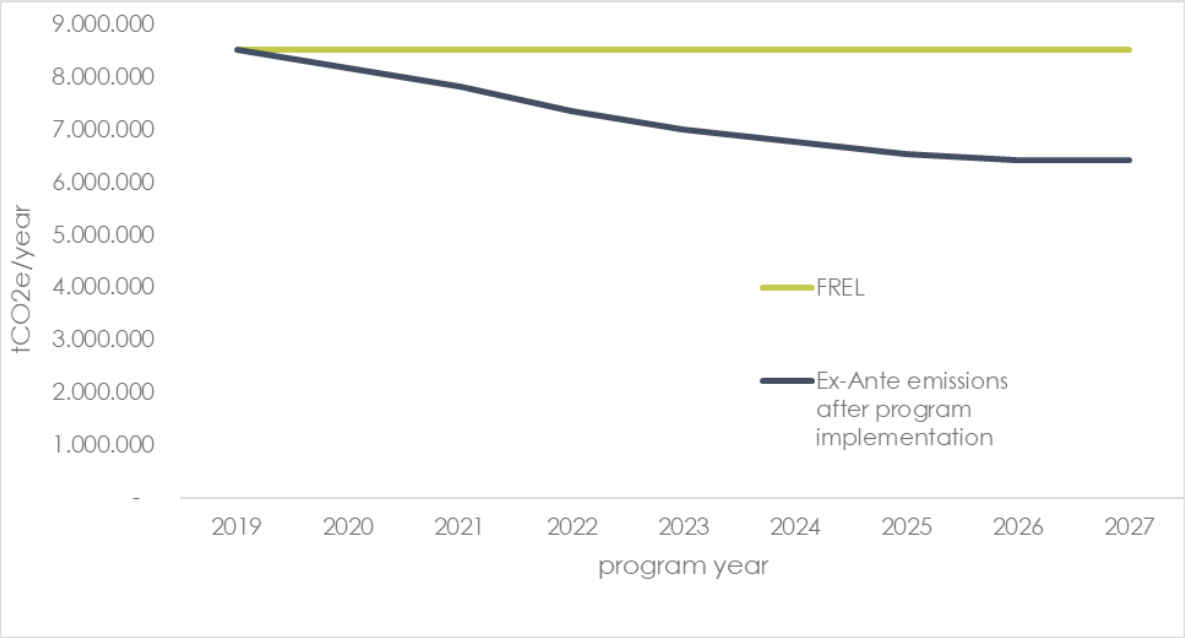


Figure 46. Indicative programme performance against RL

Based on experience in similar projects, however, it is reasonable to assume that project activities, especially those that relate to reducing deforestation, will grow in effectiveness over time as agricultural and forestry sector transformation take place in the country.

9.2 Climate Change Adaptation Benefits

9.2.1 Overview

Even though the project has its origins in mitigation, it does have adaptation merits, and Project 2 has been intentionally designed to mainstream adaptation throughout its activities. Lao PDR is a LDC with limited adaptive capacities, which is highly vulnerable to climate change impacts. Indeed, forestry and agriculture are two of four key sectors highlighted by Lao PDR's National Adaptation Programme of Action (NAPA) (Lao PDR, 2009), as well as two of five key sectors identified in the NDC as being highly vulnerable to climate change (Lao PDR, 2021c). The country is considered to have a high risk of river flooding, landslides, cyclones and wildfires, a medium risk for extreme heat; (GFDRR, no date) and there are specific climate change impacts identified for the regions to be targeted with this project (see also Chapter 3.2 in the FS and CRVA in Annex 2d).

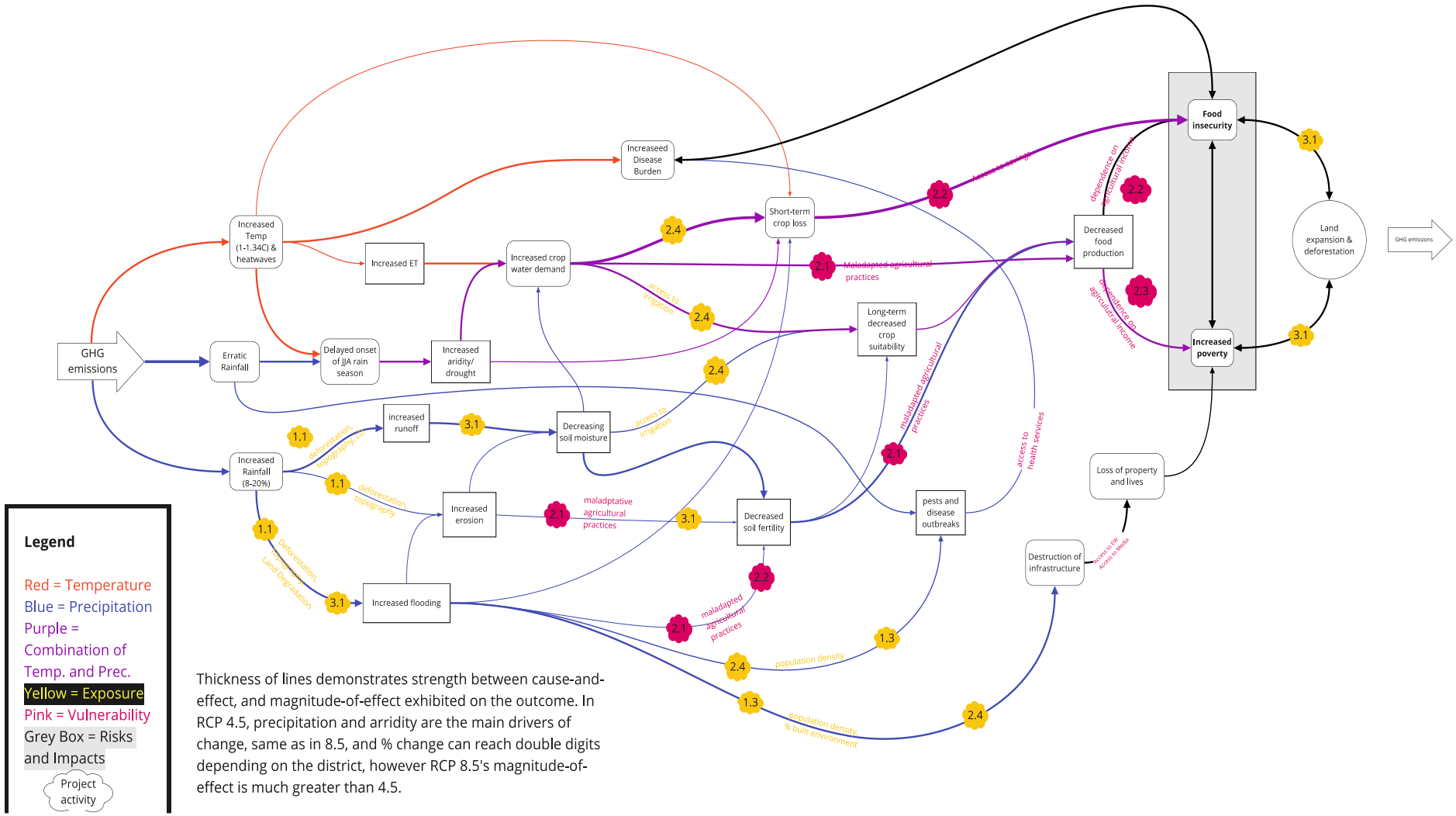
Although this GCF proposal is a REDD+ initiative, it builds on the NDC that highlights the possibility to strengthen cross-cutting measures in the forestry and agricultural sectors. The proposal incorporates interventions that will promote climate change adaptation – notably

enhanced land-use planning (including improved considerations to link local level planning to the watershed level), improvements to irrigation infrastructure, reforestation in catchment areas and low-emission and climate resilient agriculture, among others. It further supports private sector MSMEs to strengthen climate resilient and low-emission agricultural value chains, which will provide incentives that help mobilize additional finance for climate change mitigation and adaptation in the country. Awareness raising on climate change risk and vulnerability and best practices to strengthen resilience, linked with support from climate-informed participatory land use planning to targeted support for the implementation of sustainable agriculture and forest land management, will further strengthen the resilience of local livelihoods.

The project specifically aims to strengthen the resilience of vulnerable communities in Northern Lao PDR and the resilience of the ecosystems upon which they depend through reducing deforestation and forest degradation and facilitating the implementation of climate-resilient agriculture and sustainable land management. As highlighted in Chapter 3, by addressing deforestation and forest degradation there is already a major adaptation benefit by increasing forest cover and supporting the restoration of vital ecosystem services that facilitate adaptation (e.g. soil cover, river bank stabilization, erosion control). The project will additionally mainstream additional adaptation measures, based on climate informed PLUP, that will further ensure synergies between mitigation and adaptation are tapped. Beyond impacting livelihoods and ecosystems in the project area, the project will also support the mobilization and improved channelling of public and private funds for climate finance, including a strengthened emphasis on supporting investments that have cross-cutting climate change impacts (not only mitigation).

Figure 47 below provides an overview of the climate change impact chains, and how the project will result in climate change adaptation impacts.[149] Table 45 below provides more detailed information about how the project addresses the main climate-related hazards.

[149] For more information refer to the CRVA in Annex 2d to the FP.



Thickness of lines demonstrates strength between cause-and-effect, and magnitude-of-effect exhibited on the outcome. In RCP 4.5, precipitation and arridity are the main drivers of change, same as in 8.5, and % change can reach double digits depending on the district, however RCP 8.5's magnitude-of-effect is much greater than 4.5.

Figure 47. Mapping project interventions onto climate change impact pathways.

Please click here for a larger screen version.*

*For further information refer to the CRVA in Annex 2d to the Funding Proposal.

Table 45: Overview of climate-related hazards and their impacts and how the project aims to address them

Hazard	Impact	Project Interventions	Project Impact
Increased occurrence of extreme precipitation events and floods in the monsoon season	Increased occurrence of seasonal flooding during the monsoon season may lead to damage and losses of crops and livestock, damage to rural and transportation infrastructure, as well as a change in environmental services due to adverse environmental impacts (e.g. soil erosion and sedimentation). As majority of the population in the project area are smallholder farmers, including a high proportion of farmers from ethnic minorities, their livelihoods and food security will be adversely impacted.	Development and implementation of village forest management plans that consider climate risk and vulnerability within their planning and management practices (e.g. restoration of riparian buffer zones, stabilization of gully zones with trees and bamboo, implementing ecosystem-based approaches to strengthen resilience). Adoption of climate resilient agricultural practices, based on climate-informed PLUP, will also promote the selection of suitable practices with adaptation benefits (e.g. stabilization of soils and reducing sedimentation through agroforestry, planting bamboo in gully areas, etc.)	• Increased resilience of local, and forest and agro-ecosystems to floods through ecosystem-based adaptation and the adoption of climate resilient agricultural practices. • Reduced risk of food insecurity due to EbA increasing the resilience against floods.
Increased occurrence of extreme heat and droughts	Rising temperatures and increased occurrence of droughts and extreme heat may lead adversely impact crops (e.g. maize) and livestock (e.g. loss of productivity, crop failure, need for more input, erosion and soil degradation, pests and disease, among others). As majority of the population in the project area are smallholder farmers, many of which belong to ethnic minority groups, their livelihoods and food security will be adversely impacted due to agricultural losses and damages.	Promotion of climate resilient agricultural practices based on climate-informed PLUP processes, considering climate risk and resilience. Examples of practices promoted include: agroforestry (cardamom, coffee, fodder, fruit trees),[150] intercropping, improved livestock grazing areas (including shade), beekeeping with native bee species, among others. Attention will be paid to measures that improve soil moisture and enable water conservation. ADB financed Activity[151] applies a value chain and market linkage strategy to reduce the market and business risk for dry-season irrigators, including ensuring climate-informed planning and upgrading irrigation schemes, to strengthen the resilience of production and related value chains against increasingly dry conditions and drought. In addition, IFAD and ADB will support efforts that link agriculture to nutrition and natural resources promoting climate resilient practices that help	• Increased resilience of local livelihoods and agro-ecosystems due to the adoption of more resilient agricultural practices, based on climate-informed land use plans. • Reduced risk of food insecurity due to the adoption of climate resilient agriculture and EbA increasing the resilience against droughts, and extreme heat (improving production, promoting diversification and reducing risk). • Value adding opportunities associated with climate resilient and deforestation free value chains are expected to further strengthen adaptive capacities of farmers.

[150] Promotion of agroforestry (with site-species matching of appropriate species) through Component 2 “White List”, which can help stabilize soils and protect them against erosion (wind and rain), improve soil moisture, and create a micro-climate buffering effect, among other positive environmental impacts.

[151] The provincial teams in charge for the implementation of Project 1 are working closely together with the ADB and IFAD project in the three provinces. Cooperation modalities are in place, e.g. through PPMU (Provincial Project Management Unit), regular technical exchanges, often staff are based in the same office; exchange on and alignment of approaches and methodologies (e.g. ADB/IFAD applies the PLUP 2.0 guidelines; at district level the same people are in charge to implement I-GFLL (GCF 1) and ADB/IFAD project.

Hazard	Impact	Project Interventions	Project Impact
		address food and nutrition security (e.g. village nutrition teams). Implementation of measures for forest landscape restoration (FLR) with native species that protects soils from drying and supports climate-buffering, and provides shade.	
Increased occurrence of wildfires due to increasing temperatures and increasingly dry conditions.	While it is not possible to separate wildfires from the anthropogenic triggers (e.g. the use of fire for clearing fallow land), there will be an increased risk that could increase both the frequency and severity of fires due to increasingly dry conditions and increasing temperatures. It may also be more difficult to put out forest fires in increasingly drier and warmer conditions. As an indirect impact of wildfires, there may also be a higher risk of erosion and sedimentation, that can in-turn increase flooding risks. Large scale forest fires can adversely impact forest function. In addition, fires can spread to adjacent villages, national parks (and ecotourism facilities), forest and agricultural plantations leading to losses and damages. They can lead to the loss of human life, and are attributed with diverse adverse health impacts including respiratory problems, and cardiovascular disease, among others.	Development and implementation of village forest management plans and revision of NPA management plans that consider climate risk and vulnerability within their planning and management practices (including wildfire prevention and management). Capacity development on awareness and best practices will be supported for provincial and district governments on wildfire prevention and management, and village forestry groups will be trained on climate risks and best practices for prevention and resilience building. VFM and NPA management will support, where suitable, implementation of good practices for wildfire prevention (e.g. digging fire breaks, ploughing firebreaks, controlled burning of fire breaks, etc.)	• Increased resilience of the livelihoods of forest-dependent communities and forest ecosystems upon which they depend through the application of sustainable forest management practices that helps strengthen their resilience to wildfires (e.g. fire break-lines, fire management, improved awareness and warnings).

Adoption of climate resilient agricultural practices (for an overview of the practices and its adaptation impacts please see Appendix , based on climate-informed PLUP, will also promote the selection of suitable practices with adaptation benefits (e.g. stabilization of soils and reducing sedimentation through agroforestry, planting bamboo in gully areas, etc.)

9.2.2 Adaptation results areas

Table 46 provides an overview of the GCF results areas and the corresponding core and supplementary indicators that are applied to Project 2, as per the GCF Integrated Results Management Framework (IRMF). The specific results areas and indicators are presented in greater detail in the following sub-sections.

Table 46: Adaptation results area, and the corresponding core and supplementary indicators from the GCF Integrated Results Management Framework (IRMF)

Adaptation Results Area	IRMF core indicator	Supplementary indicators
ARA 1: Most vulnerable people and communities	Core 2: Direct and indirect beneficiaries reached	Supplementary 2.1: Beneficiaries (female/male) adopting improved and/or new climate-resilient livelihood options
ARA 4: Ecosystems and ecosystem services	Core 4: Hectares of natural resources brought under improved low-emission and/or climate-resilient management practice	Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under restoration and/or improved ecosystems

MOST VULNERABLE PEOPLE AND COMMUNITIES

As described in Chapter 3.2, the project will work in some of the most vulnerable areas of Lao PDR, focusing on a sub-set of the population who is particularly at risk – smallholder farmers in predominantly upland areas, of which nearly half belong to ethnic minority groups.

Core Indicator 2: Direct and Indirect Beneficiaries reached

For IRMF core indicator 2, the number of direct and indirect beneficiaries reached have been calculated based on the following approach and assumptions:

- **Direct beneficiaries:** Direct beneficiaries are considered as the population of all villagers within the 530 villages supported by Project 2.[152] Villagers within these villages will directly benefit from participatory land use planning and other project supported interventions.

- **Indirect beneficiaries:** Indirect beneficiaries are considered the population in the 29 districts covered by the project (17 districts within Luang Prabang, Sayabouri and Houaphan, and an additional 12 districts from Bokeo, Oudomxay and Luang Namtha), minus the number of direct beneficiaries. The population in all 29 districts will benefit from strengthened legal and regulatory frameworks from Project 1 and continued awareness raising and capacity building under Project 2, improved forest monitoring through PDMS, and strengthened government capacities on climate change mitigation and adaptation. The 29 districts are listed in Chapter 6.7, and the district population data was collected from the Lao PDR Population and Housing Census (2015).

[152] ***Direct beneficiaries*** *calculated based on the following assumptions:*

- It is assumed al villagers in the target villages are direct beneficiaries, as they will benefit from land use planning and other project-supported interventions.
- 530 villages will be supported in Project 2 (240 villages with continued support from project 1, and an additional 290 villages under Project 2).
- Population data is based on the average rural village size in the project area based on the Lao Population and Housing Census Data 2015 (https://lao.unfpa.org/sites/default/files/pub-pdf/PHC-ENG-FNAL-WEB_0.pdf).
- For Project 1, an average of 500 inhabitants per village was used to calculated the number of direct beneficiaries, based on the Lao Housing and Population Census, which focused on three provinces: Houaphan, Luang Prabang and Sayabouri.
- An average value of 530 inhabitants per village was assumed for Project 2 villages (based on the Lao Housing and Population Census, considering the inclusion of an additional 3 provinces.

Project 2 will directly support 153,700 persons (76,850 men and 76,850 women – equivalent to 2.15% of the national population) to implement climate resilient practices, including climate resilient and low-emission agriculture, as well as various measures for forest landscape restoration (implementing FLR in village forests and NPAs). It will also contribute to increased generation and use of climate information in decision-making, through improved participatory land use planning, considering the link between local land use planning and the watershed level. By supporting the implementation of FLR, Ecosystem-based Adaptation (EbA), SFM and low-emission and climate resilient agriculture, based on integrated planning processes, it will further strengthen awareness of climate threats and risk-reduction processes.
Indirectly, Project 2 is expected to benefit 332,991 persons (166,496 women and 166,496 men – equivalent to 4.6% of the national population) through investments in sustainable land practices that will maintain or improve the provision of vital ecosystem services, as well as through improved forest monitoring and strengthened government capacities on climate change mitigation and adaptation.
At the Programme level (i.e. Projects 1 and 2) 273,700 persons will directly benefit (136,8500 women and 136,850 men – equivalent to 3.8% of the national population) from the programme. Indirectly, the programme will benefit 723,382 persons 361,691 women and 361,691 men – equivalent to 10% of the national population).[153]

Supplementary Indicator 2.1: Beneficiaries (female/male) adopting improved and/or new climate-resilient livelihood options
The number of beneficiaries adopting improved and/or new climate-resilient livelihood options was calculated considering the number of beneficiaries who access PSAP funds. Under Project 1, an average of 158 persons (50% female) accessed PSAP funds per village during the first round of PSAP implementation, and an additional 103 persons (50% female) could access PSAP funds during the second round of VFAG funding (from the bonus performance based payment). Thus, it was assumed that 261 persons could access PSAP funds on average per village during Project 2. Project 2 will support VFAG and PSAP reaching a total of 460 villages,[154] and thus in total it is assumed the Programme will support 129,323 beneficiaries to adopt improved and/ or new climate resilient livelihood options.

AREA OF ECOSYSTEMS

ARA Cored Indicator 4: Hectares of natural resources brought under improved low-emission and/or climate-resilient management practice

The hectares of natural resources brought under improved low-emission and/or climate-resilient management practices was calculated to reflect the total area covered by participatory land use plans and NPA management plans for the project's 530 villages. It is assumed the overarching Programme will bring 2,112,000 ha of terrestrial ecosystems under improved sustainable and climate-resilient land management practices informed by PLUP, of which:

- 1,422,000 are forest ecosystems[155]

[153] **Indirect beneficiaries** calculated based on the following assumptions:
- Population in all 29 districts (17 districts within Luang Prabang, Sayabouri and Houaphan, and an additional 12 districts from Bokeo, Oudomxay and Luang Namtha) benefit from strengthened legal and regulatory framework, improved monitoring and government capacities on climate change mitigation and adaptation.
- Indirect beneficiaries = population in all 29 supported districts minus the direct beneficiaries – the number of direct beneficiaries
- District population data from Lao Population and Housing Census Data (2015)

[154] The project supports 530 villages in total. 70 villages will involve support only on village forestry. The figure included here for the beneficiaries focuses only on those implementing activities under the PSAP approach described under Component 2.

[155] Area (ha) under sustainable forest practices across forest categories = area of village forest and NPAs supported by the project. In terms of forest ecosystems, the project will support sustainable planning and interventions in sustainable land and forest management practices in both village forests and NPAs and NPs. In terms of village forests, 180,000 ha of village forests supported under Project 1 will continue to be supported by Project 2. Project 2 is expected to further support an additional 290

- 700,000 ha area agro-ecosystems.[156]

Focusing on the area of land covered directly by measures financed from VFAGs (related to PSAP and VFM), forest landscape restoration and sustainable forest management practices, considering also EbA, will be implemented on 191,500 ha of forested land,[157] and low-emission and climate resilient measures will be implemented on in an additional 17,400 ha for a total Programme coverage of 31,800 ha of agricultural land. [158]

Appendix 12.3 provides an overview of the adaptation and mitigation impacts of a subset of crops included within the White List, and Appendix 12.6 provides an overview of adaptation and mitigation impacts from forest management. The development of tools and strengthening institutional capacities on climate change adaptation within the AFOLU sector, supported throughout all 3 components as a cross-cutting element, will further facilitate replication and upscaling beyond project completion.

Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under restoration and/or improved ecosystems

In terms of forest ecosystems, the project will support sustainable planning and interventions in sustainable land and forest management practices in both village forests and NPAs and NPs.

Project 2 will work in 5 National Protected Areas and 1 National Park, where it will facilitate the restoration of forested land and the vital ecosystem services it provides. Through updating NPA management plans, strengthening forest monitoring and law enforcement, and through working closely with local communities to implement village forest conservation agreements the project will support the restoration and/or adoption of improved practices in 1,039,350 ha of conservation forests (see Chapter 6 for more information on the practices implemented in NPAs).[159]

The Programme (and Project 2) will work in a total of 383,000 ha of village forests, of which 180,000 ha under Project 1 will continue to be supported under Project 2 and an additional 203,000 ha will be added under Project 2.[160]

villages with VFM. The average area of village forests covered under project 1 was 700 ha. Therefore, it is estimated that new VF groups under Project 2 will cover 203,000 ha.

In terms of NPAs and NP3, 672,200 ha correspond to the area of 2 NPAs and 1 NP supported under Project 1, that will be continued to be supported under Project 2 (see Activity 3.2.1). An additional 367,150 ha corresponding to 3 additional 3 NPAs that are included within Project 2 in the provinces of Bokeo, Oudomxay and Luang Namtha. The areas of the NPAs are based on their latest Management Plans.

[156]Calculated assuming 1,320.75 ha of agriculture land per village (the average agricultural area per village under Project 1) x 530 villages.

[157] Equivalent to 50% of the VFM area (total area 383,000 ha). Sustainable interventions include: Forest patrolling for protection against encroachment; fire prevention (e.g. digging fire breaks, ploughing firebreaks, controlled burning of fire breaks, etc.); building small water reservoirs to provide water for firefighting and water for watering planted tree seedlings; reforestation to promote river bank stabilization and ecosystem-based adaptation; identification and marking of trees to be left as mother trees for seed production; selective cutting (in small quantities in different diameter classes in accordance with the sustainable forest model to improve forest structure and provide timber and fuelwood for villages); close parts of forest temporarily and protect young regeneration trees, fencing off of some parts to encourage regeneration; conduct weeding around valuable tree seedlings; marking of trees to be cut every year; enrichment planting; promotion of natural regeneration (e.g. in case of fire damage, shifting cultivation, excessive degradation/tree cutting); direct seeding in barren, highly degraded areas; and NTFP management and development. See Chapter 0 for more information on the activities implemented in VFMPs.

[158] Project 1 target is 14,400 ha and project 2 is to add an additional 17,400 ha (resulting in the Programme total of 31,800 ha of agricultural land.

[159] Areas of NPAs and NP are determined based on their latest management plans. The Programme and Project 2 Target are the same, as Project 2 will support NPAs and NPs that were also supported under Project 1. Project 2 will work in 5 NPAs and 1 NP. Areas of NPAs and NP are determined based on their latest management plans. Baseline figures cover the 2 NPAs and 1 National Park covered under Project 1 (total area circa 672,200 ha): 70,000 ha Nam Sam NPA; 411,000ha Nam et Phou Louey NP; and 191,200 ha Nam Pouy NPA. The total area under project 2 includes the baseline figures plus an 3 additional NPAs supported in Bokeo, Luang Namtha and Oudomxay (with these additional 3 NPAs having a combined area of 367,150 ha): 87,350 ha Phou Hi Phi NPA; 222,400 ha Nam Ha NPA; and 57,400 ha Nam Kan NPA.

[160] A total of 180,000 ha of village forests from project 1 will continue to be supported by Project 2 (with an average of 750 ha per village forest). Project 2 is expected to support 290 new villages with VFM. The average area was reduced to 700 ha per village to be more conservative, as village forest size in the additional 3 provinces is likely to be slightly smaller. This is partly linked with the size of NPAs, which are larger in area in the 3 NPAs covered under Project 1, where villagers in the same districts as these

9.3 Economic Co-benefits

The project will generate diverse economic benefits, including:

- **Poverty eradication livelihood improvement:** Some of the poorest districts of the country are in the project area, which are among the most vulnerable to climate change. The poverty headcount-ratio (percentage of the population living below the national poverty line) in the project area ranges between 20.2% and 37%. The project will ensure the participation of poor and vulnerable households (Component 2 and 3), and help them to strengthen their resilience to climate change (e.g. through climate-informed land use planning and the identification of the most suitable land use practices, facilitating access to markets by strengthening of agri-value chains and supporting agri-MSMEs, scaling up village forestry, and implementing conservation agreements with local communities in NPAs, among other measures).
- **Increased land productivity and incomes of supported households:** investments in the implementation of PSAP promoted practices will help farmers increase yields and maintain land productivity. By strengthening the links between farmers at village level and agri-MSMEs and by strengthening the transformation, value adding, and marketing capacities of agri-MSMEs in support of climate resilient and deforestation free value chains, the predictability of demand for sustainably produced products will be enhanced, contributing to increasing incomes of supported farmers. In the long-term, incomes can also be enhanced through the sustainable commercial use of timber from village forests as outlined in the new forest law.
- **Strengthened adaptive capacities and resilience of local livelihoods to climate change in order to avoid future losses and damages:** The project's main beneficiaries are smallholder farmers in upland areas, whom are among the most vulnerable to climate change in Lao PDR. By promoting climate resilient agricultural practices, the project will also help strengthen villagers' adaptive capacity – enabling them to adapt to climate change and reduce future impacts (e.g. through diversification, implementation of climate resilient practices, among others). This could help avoid losses and damages in the future, whereas diversification can help to strengthen farmers' coping capacities and ultimately their resilience to climate change (see also CRVA in Annex 2d).
- **Improved mobilization and channelling of finance for climate action and sustainable land management:** Improved mobilization (from public and private sources, supported under Activity 1.1.1) and channelling of climate finance to VFAGs will improve villagers access to funds for investments in low-emission and climate resilient AFOLU.
- **Strengthened business plans and value chains**: Project support for agri-MSMEs will support businesses to develop bankable business plans and will enable them to move towards more sustainable value chains. Support under Activity 2.2.1 will further improve the agri-MSMEs possibilities to access loans and private finance through developing investment ready business plans for the sustainable processing of promoted commodities under the "White List" supporting the development of more sustainable agricultural value chains. Tax revenue from taxes and charges may also rise as a result of this enhanced economic activity.

NPAs tend to have larger village forests. Therefore, it is estimated that new VF groups under Project 2 will cover 203,000 ha. In total VFM will cover 383,800 ha.

Table 47: Summary of project economic co-benefits and their contribution to the SDGs

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
SDG 1 No poverty	▪ **1.1** By 2030, eradicate extreme poverty. ▪ **1.4** By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance. ▪ **1.5** By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.	▪ Increasing access to markets, land productivity, income. ▪ Avoiding losses and damages related to climate change to livelihoods, properties and income. ▪ Investments in villages through the VFAGs.
SDG 8 Decent work and economic Growth	▪ **8.3** Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services. ▪ **8.10** Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all.	▪ Supporting villagers access to markets through the work on agri- MSMEs under activity 2.2.1 ▪ Support to agri-MSMEs to access additional sources of finance for sustainability oriented investments ▪ Mobilization and channelling of resources for climate finance
SDG 10 Reduced Inequalities	▪ **10.1** By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average. ▪ **10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.	▪ Increasing access to markets, land productivity, income. ▪ Ensuring the participation of poor and marginalized persons in the project activities
SDG 12 Responsible Consumption and Production	▪ **12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.	▪ Promoting climate resilient agricultural practices. ▪ Supporting agri-MSMEs to develop bankable business plans, which will enable them to move towards more sustainable value chains.

9.4 Environmental Co-benefits

In addition to the climate change mitigation and adaptation, the project is expected to generate key environmental benefits, including (among others):

- **Enhanced biodiversity conservation:** Enhancing biodiversity conservation through the protection of natural forests and the promotion of more resilient and sustainable forest management in at least 1,039,350 ha of national parks and NPAs through the implementation of the full Programme.[161] Project 2 will work in 367,150 ha of NPAs (plus continuation on 672,000 ha of NPAs under Project 1), with particularly strong biodiversity benefits, including important habitats for diverse species including the black gibbon, among others. Supporting village forestry establishment and VilFoCA operations in each village will also help to restore landscapes, foster healthy and resilient ecosystems, and help establish biodiversity corridors.

[161] See ER-PD p.31 for details on endangered species.

Biodiversity corridors will be strengthened by their deliberate inclusion in the land use planning at village level. These efforts are aligned with those outlined in the country's Biodiversity Strategy and Action Plan (2016-2025).

- **Enhanced provision of vital ecosystem services:** Reducing deforestation and forest degradation, and implementing sustainable and climate-resilient land use practices will help improve the provision of vital ecosystem services, including (among others): carbon storage, water regulation, climate regulation (e.g. micro-climate buffering), habitat provision, flood regulation, and the provision of food, fibre and fuel. This will further benefit from watershed protection and more holistic land use planning under the PLUP 2.0 approach (with strengthened adaptation mainstreaming and capacity building under Project 2), which considers the interlinked dynamics of land use practices and ecosystem services.
- **Facilitation of sustainable production practices:** Strengthening the development of sustainability oriented-markets and climate-resilient value chains will provide new incentives towards sustainable production patterns. Promoting the use of climate resilient and deforestation free agricultural practices will also help improve soil quality, strengthen agro-biodiversity (through intercropping and agroforestry systems), reduce soil degradation, erosion and sedimentation, and reduce agrochemical use (and thus the risk of soil and water contamination, and potential health impacts).

Table 48: Summary of project environmental co-benefits and their contribution to the SDGs

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
SDG15 Life on Land	▪ **15.1** By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements. ▪ **15.2** By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally. ▪ **15.5** Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.	▪ Protection of natural forests and the promotion of natural forest regeneration on at least 1,039,350 ha of land through the implementation of the full Programme. ▪ Landscape restoration and establishment of biodiversity of corridors. ▪ Reducing deforestation and forest degradation and implementing sustainable and climate-resilient land use practices. ▪ Sustainability oriented-markets and climate-resilient value chains will incentivize sustainable production practices.

9.5 Social Co-benefits

Project 2 is expected to continue to generate additional social benefits in the project area:

- **Improved food security and nutrition:** Malnutrition is a permanent threat to the rural population in the project area, as the inhabitants depend on traditional smallholder rain-fed agricultural and shifting cultivation systems, which are particularly vulnerable to climate change. The prevalence of undernourishment in Laos is currently 17.1% with higher rates in the project area (ADB, No date). The project will increase the nutrition and food security of beneficiary households (Component 2) through improved climate-resilient agricultural practices.

- **Health benefits**: The project will generate various health benefits. Northern Lao PDR is particularly impacted by forest fires, which are projected to become more frequent and intense due to climate change and increasingly dry conditions. The project will support the implementation of measures to improve forest fire prevention and preparedness (e.g. digging or ploughing fire breaks, controlled burning of fire breaks, building small water reservoirs for providing water for firefighting etc.), which will have a positive health benefit for local communities (e.g. reducing adverse respiratory and cardiac health impacts from smoke inhalation and haze).[162] Ecosystem-based adaptation measures will further strengthen the resilience of local villagers against climate-related natural hazards that often result in injury or loss of life (e.g. floods, wildfires). Studies in other regions of Southeast Asia have found tropical deforestation has accelerated local warming, and worsened local's exposure to heat and heat-related ailments.[163]
- **Inclusion of ethnic minorities**: There are at least 23 specific ethnic groups present in the Project area. The Project aims to work with diverse ethnic groups and provide targeted support that is culturally appropriate and targeted to their needs. Social inclusion is a cross-cutting theme within the GCF-supported Components, Activities and Actions. Project 2 aims to continue to promote an inclusive approach, ensuring beneficiaries from diverse ethnic groups and marginalised villages are included and empowered. An Ethnic Group Development Planning Framework has been developed(following the GCF Indigenous Peoples Policy, which can be found under the ESMP), highlighting the specific needs of ethnic and indigenous groups. Priorities outlined in the framework include: strengthening their voice in the context of village decision-making; access to land, forest and natural resources for livelihood purposes; respect for customary use of land, including for ancestral and spiritual uses; and appropriate access to information, including use of ethnic languages and simple imagery to accommodate lower literacy rates. Project 2 will continue to support the implementation of the plan and will closely monitor the project's impact on ethnic minorities and social inclusion. For more information refer to the Ethnic Group Development Plan in Annex 6d.

Table 49: Summary of project social co-benefits and their contribution to the SDGs

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
SDG 2 Zero Hunger	▪ **2.1** By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round. ▪ **2.2** By 2030, end all forms of malnutrition. ▪ **2.4** By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.	▪ Introducing and improving deforestation-free and climate-resilient agricultural practices
SDG 3 Good Health and Well-Being	▪ **3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.	▪ Improve forest fire prevention and preparedness reducing adverse respiratory and cardiac health impacts from smoke inhalation and haze

[162] This is particularly relevant in northern Lao PDR, where there is a high correlation between poverty and exposure to harmful particulate matter due to forest fires. For more information refer to Reddington, et al. (2021)
[163] For example Parsons, et al. (2021)

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
SDG 10 Reduced Inequalities	▪ **10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.	▪ The Project Ethnic Group Development Planning Framework includes priorities such as strengthening their voice in the context of village decision-making; access to land, forest and natural resources for livelihood purposes; respect for customary use of land, including for ancestral and spiritual uses; and appropriate access to information, including use of ethnic languages and simple imagery to accommodate lower literacy rates.

9.6 Gender Co-benefits

Women, as the main collectors of forest products, know forests well and have seen the impact of deforestation and forest degradation on their livelihoods. As forests become increasingly degraded, women must either travel longer distances, or use less NTFPs for domestic consumption. Women are also highly dependent on agriculture for their livelihoods, where 63% of working women are employed in the sector (World Bank, 2021). Consulted female stakeholders noted they can see the impact of some land use practices resulting in soil degradation and productivity declines (e.g. maize monocropping), however they noted there is a need for additional technical and financial support to facilitate actual investments, and build capacities (while addressing barriers for women to access information and extension/ investment support on good agricultural practices).[164] They further noted the need for support in marketing and identifying suitable opportunities (based on participatory land use planning).[165] Beyond this, women are often particularly adversely impacted by climate-related natural disasters, and support is needed to reduce their exposure and vulnerability to such hazards.[166]

The Project developed Gender Assessment and a Gender Action Plan (GAP) (presented as Annex 8b of the Funding Proposal) which builds on the assessment and action plan conducted for FP117. The GAP forms the basis for operationalizing the results and recommendations of the gender analysis. It contains specific gender elements to be implemented through project implementation, where gender equality is considered a cross-cutting element throughout the project's components and activities.

Project 2 will follow the approach outlined in the GAP. It will continue to work closely with the Lao Women's Union to ensure the effective engagement of women. All project activities will proactively involve empowerment elements for village women, including promoting their leadership roles in local structures, including ensuring a quota of at least 30% female in village committees. The project will include training on business skills development for women that will help to address common participation gaps and barriers, including financial support. The project will seek economic opportunities for women related to agroforestry, forest management and climate-resilient agricultural activities. It will also strengthen awareness for women and men within the project area on climate risks and best practices to reduce these risks and strengthen the resilience of local communities and ecosystems. All extension staff and trainers supporting Project 1 will be trained on gender equality and social inclusion, including time-saving activities (see gender assessment and gender action plan in Annexes 8a and 8b).

[164] FP117 Gender Assessment.
[165] FP117 Gender Assessment.
[166] Women are often particularly adversely impacted by climate-related natural disasters, as they often are responsible for caretaking and face increased risk of gender-based violence, poverty, insecure employment, and human trafficking. These impacts are further exacerbated by their lower access to and management of resources, access to services and political representation, as well as the persistence of gender norms and stereotypes (with such barriers particularly pronounced for women from ethnic minorities - see the Gender Assessment for more detailed information). See also Desai & Mandal (2021); Uniacke (2018).

Table 50: Summary of project gender co-benefits and their contribution to the SDGs

SDG	Examples of relevant SDG target	Example of how the project contributes to SDG
SDG 1 No Poverty	▪ **1.4** By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.	▪ The project will include training on business skills for women to address participation gaps and barriers. ▪ It will seek economic opportunities for women related to agroforestry, forest management and climate-resilient agriculture.
SDG 5 Gender Equality	▪ **5.1** End all forms of discrimination against all women and girls everywhere. ▪ **5.5** Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.	▪ Project activities will proactively involve empowerment elements for village women, promoting their leadership roles in local structures, including ensuring a quota of at least 30% female in village committees.
SDG 10 Reduced Inequalities	▪ **10.3** Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard	▪ It will seek economic opportunities for women related to agroforestry, forest management and climate-resilient agriculture.

10. Project Risks and mitigation approaches

The programme was categorized as a GCF Category B. Category B programmes are defined as: "*activities with potential mild adverse environmental and/or social risks and/or impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures*." For GIZ, Category B equals a project with "*potentially rare or locally limited occurrence, largely reversible consequences, easy to manage*." For both organizations, the emphasis is on risks that are "*site specific*," few in number and can be adequately managed with ease. Project 2 is also categorized as a GCF Category B project.

The following table provides an overview of the main technical and operational, financial and governance risks associated with the project. Avoidance and/or mitigation measures are also presented for each risk.

Table 51: Overview of Project Risks

Selected Risk Factor 1 - Loss of capacities and knowledge due to turnover among project related government staff		
Category	**Probability**	**Impact**
Technical and operational	Medium	Low
Description		
High staff turnover and limited numbers of government extension staff impedes retention of skills and knowledge in the relevant sectors and institutions.		
Mitigation Measure(s)		
• Lessons accrued during Project 1 showed that emphasis on documentation and dissemination are important to facilitate knowledge retention, capacity building and knowledge exchange. This includes the development and utilization of clear and user-friendly guidelines and protocols (including those developed under Project 1, including, but not limited to: PLUP 2.0, PSAP, VFAG and VFM guidelines), the institutionalization of trainings/workshops (e.g. developing training modules and supporting training of trainers, to facilitate replication and upscaling of trainings), and improving knowledge management systems. • Continuous engagement with relevant authorities at the national, provincial and district level will further help strengthen knowledge exchange and maintain organizational knowledge. National, provincial and district PMUs and project steering committees will further help to sustain this exchange. • Experience from Project 1 has also shown that training of multiple staff members in each department / province/ district or team will mitigate the risk of knowledge and capacity drain. Such an approach will be continued within Project 2. • A knowledge management plan has been developed for Project 2, which is available in Chapter 7.		
Selected Risk Factor 2 - Weak forest law enforcement and corruption		
Category	**Probability**	**Impact**
Technical and operational	Medium	Medium
Description		
While efforts to reduce corruption in the forest sector have improved law enforcement and reduced corruption, there is still a risk that corruption could persist.		

Mitigation Measure(s)
• Project 1 developed SOPs improved investigative procedures, whistle-blower systems and improved anti-corruption safeguards that form the basis of efforts for law enforcement and forest monitoring. Continued support under Project 2 Activity 1.2.1 will further strengthen law enforcement, increase transparency and reduce corruption in the forest sector (e.g. training on aforementioned procedures, systems and safeguards, establishment and operationalization of PDMS). PDMS includes a transparent reporting system that is effective, accessible and culturally appropriate to permit reporting at village-, district-, province- and national-level. Lessons learned from Project 1 highlighted the relevance of this tool, and the need for continued support for scaling up PDMS within the project area (see Activity 1.2.1) for more detailed information). • Project 1 further strengthened the regulatory framework, supporting revisions in the Decree on Protected Areas (ongoing), Forestry Strategy 2021-2035 the National REDD+ Strategy (April 2021), technical guidelines for village forest management planning (June 2021), among others, which have created a stronger basis for reducing deforestation and forest degradation – including forest law enforcement and monitoring. Project 2 will continue to raise awareness on the legal and regulatory framework. • Projects 1 and 2 support to improve land use planning and implement sustainable land management activities (e.g. PSAP, VFM), further provides tailored incentives to facilitate the sustained adoption deforestation free and climate resilient sustainable land management activities.

Selected Risk Factor 3 - Insufficient demand from agri-MSMEs for matching grants and limited participation of private sector actors in the implementation of project activities		
Category	**Probability**	**Impact**
Technical and operational	Medium	Medium
Description		
Investments in climate resilient and deforestation free value chains may not materialize. This could be due to various factors (e.g. private sector actors do not want to participate in the project activities and prefer to continue using BAU practices or face competing priorities, private sector actors may not meet the project's eligibility criteria, or business plans do not meet a sufficient quality).		
Mitigation Measure(s)		
• Private sector assessments undertaken for Project 1 and interviews undertaken for the feasibility study of Project 2 reveal that there is willingness by companies to participate in the project and receive technical support for strengthening operational capacities and diversifying their business models.[167] • Project 2 will hire an international technical specialist, with expertise on agriculture and private sector engagement, to support all activities under component 2, given the project's strengthened emphasis on Component 2 and private sector investments through agri-MSMEs. • The project will contract a technical assistance provider to support the process of identifying, screening, shortlisting, and selecting agri-MSMEs to partner with the project. They will further support agri-MSMEs throughout the matching grant cycle. This will ensure there are sufficient companies seeking to benefit from the access to matching grants, and will support them		

[167] Under Project 1, detailed interviews were conducted with agri-MSMEs in Luang Prabang and Sayabouri. The main objectives of the survey were to review the current Agri-MSME landscape in the 2 provinces, assess common business models, attempt a first categorization of companies, and assess their financial situation and need for external financing. Additional private sector analyzes have been undertaken in the Project 1 target provinces, with interviews of 167 companies/traders. As a result, 18 products were identified that matched with the "White List" under Project 1 developed (including broom grass, job's tear, paper mulberry, rice, cardamom, rattan, red bean, bamboo, tea, coffee and sesame).

throughout the matching grant cycle (e.g. with business plan development, compliance with white list and eligibility criteria, and processes to seek additional alternative sources of finance (e.g. bank loans).

- The process to access matching grants will be reflective of the capacities available among agri-MSMEs in northern Lao PDR. The design of the matching grant component under Activity 2.2.1 has been informed by consultations with other donors in Lao PDR, including World Bank and ADB, on best practices and experiences for developing matching grant schemes.[168]

Selected Risk Factor 4 – Promoted investments implemented by villagers and agri-MSMEs could become more financially attractive and create perverse incentives that could accelerate deforestation and forest degradation

Category	Probability	Impact
Technical and operational	Medium	Medium

Description

Promoted investments implemented by villagers and agri-MSMEs could become more financially attractive and create perverse incentives that could accelerate deforestation and forest degradation.

Mitigation Measure(s)

- Awareness raising is cross-cutting throughout project activities on climate change and the importance of forests for both climate change mitigation and adaptation, and other socio-economic and environmental benefits.
- Investments in PLUP, law enforcement and monitoring will facilitate improved transparency and monitoring and law enforcement, improving the detection and enforcement of infractions. Villagers will be incentivized to
- At the village level, the PLUP developed under activity 1.2.2 informs the PSAP process which with its White List outlines sustainable practices that have already been screened for their sustainability and suitability for the project area and Village Forest Management Plans. In addition to law enforcement, compliance with the plans will be promoted through village peer pressure and incentivized through bonus payments and a second VFAG funding cycle.
- Eligibility criteria are developed which will screen agri-MSMEs, and contracts with agri-MSMEs will further include legal commitments to deforestation free and sustainable practices. The implementation of business and investment plans by agri-MSMEs will be continuously monitored by a contracted TA provider to ensure that they contribute to climate resilient and deforestation free value chain development.
- Long-term relationships between farmers and companies are being actively facilitated with a focus on sustainability and TA will be used as an essential tool to link agri-MSMEs receiving matching grants with producers adopting deforestation free and climate resilient practices
- Long-term relationships between farmers and companies are being actively facilitated.
- TA is an essential too to link companies, matching grants and sustainable producers.
- The financial infrastructure put in place in the form of VFAGs can be used by subsequent projects to further build on the installed systems.
- Ultimately, profound behavioural change cannot be expected within a project lifetime of only a few years. Project efforts thus focus on creating insights and options, that may show effect beyond the project duration.

Selected Risk Factor 5 – limited institutional and cross-sectoral coordination limits the effectiveness of project activities

[168] For example, it was strongly recommended to include technical assistance to support MSMEs to develop business plans and support them with administrative procedures, which has been reflected within the project design.

Category	Probability	Impact
Technical and operational	Low	Medium
Description		
Sub-optimal cross-sectoral coordination and potential conflicting interests may limit the adoption and effectiveness of REDD+ and related measures.		
Mitigation Measure(s)		
▪ The project is well aligned with the priorities of the Government of Lao PDR. This project has been developed together with the Government of Lao PDR, through extensive consultations and meetings with government actors and other stakeholders at the national, provincial, district and village level. ▪ Improved cross-sectoral planning and dialogue between key actors (including MPI, MAF, MONRE, PONRE, PAFO, POFI) is a cross-cutting measure throughout various project activities. ▪ The GCF Project 2 continues to build on the strengthened relationships and cross-sectoral planning established through the REDD+ Task Force and promotes continuous dialogue and ongoing capacity building and coordination. It continues to strengthen multi-stakeholder ownership of REDD+ based on donor projects/programmes. As in Project 1, the National and Provincial REDD+ Task Forces will support project steering, and ultimately facilitate ongoing cross-sectoral coordination. ▪ REDD+ Results-based payments from the FCPF Carbon Fund provide an additional incentive for the Government to maintain strong ownership over the GCF programme and commitments to achieving the Project 2 results. ▪ Improved land use planning under PLUP (Activity 1.2.1) will continue to improve monitoring and enforcement of land use based on plans. PSAP and other agricultural support under Component 2 *and* improved planning and monitoring of forest areas under Component 3, will increase accountability and enforcement, ultimately limiting encroachment, over-harvesting and unsustainable forest use.		
Selected Risk Factor 6 - Noncompliance of land use plans		
Category	**Probability**	**Impact**
Other	Low	High
Description		
Participating households may not comply with land use plans that are developed and approved and undertake illegal harvesting activities to generate income. Ethnic groups poor households could be particularly affected, as they are the most likely to experience economic dislocation due to their reliance on the land.		
Mitigation Measure(s)		
▪ As in Project 1, participation in Project 2 activities is voluntary and based on the principle of (FPIC). A Grievance mechanism will be clearly communicated in culturally appropriate ways in the same manner it has been done in Project 1 participating villages, and villagers are able to access the mechanism to file any grievance (see ESIA for more details on the grievance redress mechanism).		

- The PLUP methodology ensures that land use plans are developed using participatory stakeholder processes and aligned to priorities and interests of each village thereby reducing risks of non-compliance.
- PLUP teams will be trained on social inclusion and how to target the inclusion of marginalized or vulnerable households. Awareness will be raised on current practices and their impacts, as well as sustainable land management**,**
- VFAG will provide incentives that will help overcome opportunity costs and support the transition to sustainable land use – through PSAP and VFMP this will be combined with regular patrolling and forest cover monitoring (Activity 1.2.1) are accompanying measures to mitigate encroachment in forest areas.
- Capacity building and supported investments in monitoring, knowledge dissemination, and training/capacity building and awareness-raising will help improve compliance and adoption.
- Extension and training materials will include visuals such as videos, pictures, and other tools to communicate content, including translations to key languages (as necessary). Strengthened capacities and technical support for ongoing monitoring will assess potential trade-offs or unforeseen impacts and will identify the need for potential adjustments.
- The bonus payments are structured as incentives to promote compliance with land use plans.

Selected Risk Factor 7 – insufficient capacities within the Forest Protection Fund slow project activities

Category	Probability	Impact
Technical and operational	High	Low

Description

The capacity development process of FPF takes too long and FPF is unable to channel RBPs and project funding during the implementation of the project

Mitigation Measure(s)

- Dedicated support to FPF is considered in activity 1.1.1, including the provision of support for the FPF to enhance its governance structure, and processes to be able to meet international fiduciary and safeguard standards as well as to be able to screen, assess, and monitor climate mitigation and adaptation projects in the forestry sector.
- A contingency plan is in place, as FPF currently does not meet fiduciary requirements to channel results-based payments as co-finance for Project 2 (for Activities 2.1.4 and 3.1.2). As stated in the draft Benefit Sharing Plan (BSP) (Government of Laos PDR, 2021), “the activation of the contingency plan puts the DoF as the modality to receive and disburse the advance and results-based payments under the ERPA, while committing to improve the FPF’s capacity to meet World Bank’s fiduciary requirements. Under this modality, the REDD+ Division under the DoF will oversee funds disbursement and reporting”. Once FPF is deemed ready to take-over fund management by DoF, the WB will conduct a complete and comprehensive fiduciary assessment.

Selected Risk Factor 8 – Risk of money laundering, terrorist financing, prohibited practices and sanctions

Category	Probability	Impact
Prohibited practices	Low	High

Description

Risk of project funds being used for money laundering, terrorist financing, prohibited practices and sanction risks.

Mitigation Measure(s)
▪ None of the project activities will be undertaken in any jurisdiction which is subject to or affected by United Nations Security Council Resolutions (UNSC). ▪ No individual or entity that is listed on any UN sanctions list will be involved in any manner with the project or its activities, either as a counterpart, Executing Entity, implementation partner nor beneficiary. ▪ The project will not provide direct cash payments from EPF to villagers. EPF transfers funds amounting to an average of 10.800 EUR to each established VFAG account, plus the equivalent of 1.500 EUR for the first year of VFMP activities. Only the elected VFAG committee is entitled to withdraw funds from the VFAG account (multiple signatures) and only based on the approved "PSAP investment plan" and the "annual village forest management activity plan". In the PSAP investment plan the participating families of upland farmers are listed with their selected White List activity, the grant amount to receive from the VFAG (up to 400 EUR), their own contributions, and the items to be funded by the VFAG funds. Depending on the type of agricultural inputs required, some of these will be purchased directly by the beneficiary family (e.g. tools and small materials) against receipt, while seeds or planting material will generally be ordered and purchased by DAFO in bulk. Only for those items that the family will purchase directly, cash payments will be made by the VFAG committee to the individual family. This could be for any of the White List activities, as selected by the particular family. Official receipts will need to be provided to VFAG in return. These measures (VFAG committees, and ensuring alignment with the white list and approved VFM annual plan and PSAP investment plans) will prevent fraud, abuse, money laundering, terrorist financing or prohibited practices. Procedures are described in greater detail within the Project Operations Manual and related guidance (see Annex 21). ▪ In addition to controls applied for VFAGs, the project will follow GIZ (AE)'s approved Procurement and Consultant Guidelines, which have been reviewed and accepted by the GCF as part of its accreditation process. Procurement will be carried out by the EEs and procurement activities will be agreed upon between the AE and EEs as part of the annual operational planning. When awarding contracts for goods, works and consulting services to be financed in full or in part from the GCF grant, the EE shall observe the regulations for public procurement, which apply in the EE's country. Minimum standards are presented within the Project's Procurement Plan in Annex 10a to the FP. A Procurement Operational Manual, with guidelines and templates to provide guidance for the implementation of the procurement plan, will be developed. Project procurement will be transparently documented, as per the Plan in Annex 10a. ▪ The EPF has, in the frame of the Readiness Support to help them become accredited to the GCF, developed a code of business conduct where principles to be considered related to money laundering and anti-terrorist financing are described. The document pending final approval by the EPF board. In addition, the process to detect anti-money laundering, anti-terrorist and financial provisions have been updated. ▪ Complaints and allegations of impropriety, wrong-doing or other related issues in the project will managed following GIZ's Compliance Management System (CMS). GIZ's CMS is based on Standard 980 issued by the German Institute of Public Auditors (IDW PS 980) and the international management standard ISO 37301.The CMS includes a code of ethnics, annual compliance reporting,[169] an anti-corruption policy, and a whistleblowing procedure. GIZ's whistle blowing procedures includes an anonymous entry channel for information on serious violations of GIZ's internal principles of conduct, internal rules as well as applicable laws (e.g. related to corruption and bribery, embezzlement, fraud, misappropriation, conflicts of interest, sexual misconduct and sexual exploitation, and violation of human rights).

[169] E.g. The 2020 GIZ Annual Compliance Report is available at the following link: https://www.giz.de/en/downloads/giz2020-en-annual-giz-compliance-report.pdf

Selected Risk Factor 9 Extreme climatic events and pests and diseases		
Category	Probability	Impact
Other	Low	Medium
Description		
Extreme climatic events, pests and diseases may limit programme effectiveness and damage programme investments in sustainable agriculture and forest management		
Mitigation Measure(s)		
▪ Regular monitoring conducted within the framework of the programme will lead to early detection, follow-up and the identification of suitable management practices/adjustments as necessary. Programme team will include a staff member dedicated to monitoring the impact of the programme and implementation of the ESMP. ▪ Inclusion of drought-resilient crops and varieties in Component 2. ▪ Capacity building and training on sustainable water harvesting techniques, risk mitigation processes (including good agricultural practices with strong climate change adaptation co-benefits that can reduce risk). For example, reducing shifting cultivation and increasing vegetative cover in upland areas can help reduce erosion and sedimentation that contribute to riverbank cutting and riverbed rise downstream, as well as landslides in steep areas. ▪ Capacity building for farmers on sustainable pest and disease management (Activity 2.1.1) ▪ Land use planning will help improve land use practices, including reducing exposure to risk (e.g., identifying high-risk areas for landslides, flooding, etc.), and will support the planning, adoption and monitoring of sustainable land use processes that can help reduce risk (see above). ▪ The timing of programme activities will be conducted considering seasonal conditions, climate, etc. (e.g., tree planting season in dry season).		

Selected Risk Factor 10 Noncompliance of sustainable practises in or near high conservation value areas		
Category	Probability	Impact
Other	Low	Low
Description		
Programme activities will be implemented within and adjacent to high conservation value areas (e.g., National Protected Areas/Conservation Forests); if sustainable practices are not followed, they could have a negative impact on biodiversity		
Mitigation Measure(s)		
▪ The programme is expected to have positive impacts on protected areas: e.g. improved livelihoods for villages within or adjacent to NPAs, increased conservation of natural habitat for biodiversity, increased forest restoration/rehabilitation, increased protection of watersheds, streams and water sources, improved participation in forest management, improved capacities for forest management, monitoring and enforcement, and improved transparency in decision-making, among others. ▪ Supported activities will be based on approved management plans, revised, validated and approved by diverse stakeholders, and developed based on a participatory process. ▪ General land use planning-related mitigation actions are described above in Risk 2. ▪ Improved monitoring and law enforcement will help ensure that negative impacts are avoided or detected and addressed quickly.		

- Improved awareness of local villages on regulations and the importance of forests, wildlife and biodiversity.

Selected Risk Factor 11 Insufficient incorporation of marginalized, vulnerable ethnic groups		
Category	Probability	Impact
Other	Medium	Medium
Description		
Inadequate inclusion of ethnic groups, particularly marginalized or vulnerable groups		
Mitigation Measure(s)		

- Proactive inclusion of diverse ethnic groups, including marginalized groups, in the implementation of the programme. Increased participation, particularly of ethnic groups, in sustainable forest management, land use planning and village development activities will be ensured through enhanced support from extension services and ongoing technical support. There are important aspects of the planned activities that lead to enhanced recognition and rights of villages in planning, managing, protecting, using and benefiting from village forest resources (e.g. village forests within national forest land).[323]
- The GCF programme's Stakeholder Engagement Plan and safeguard measures will ensure participation of ethnic groups and other marginalized groups through the inclusion cross-cutting measures that target their engagement, ensure meaningful participation and consultation with communities, ensure responsive monitoring of social inclusion and gender, and ensure that diverse communities and beneficiaries are able to benefit from the programme. They will further provide a framework to avoid, mitigate and/or manage any unintended adverse impacts.
- The programme´s grievance mechanism will be clearly communicated in culturally appropriate ways, and villagers will be able to access the mechanism to file any grievance.
- Development of agricultural and forestry value chains will enable villagers to produce and market improved products, addressing common concerns highlighted during programme development related to the lack of alternative livelihoods, especially for marginalized and vulnerable groups.
- Trainers and PMU staff will be trained on social inclusion and culturally appropriate training practices.
- FFSs and trainings will increase knowledge, skills and participation among rural villages, including ethnic groups and marginalized groups.
- Trainings (including FFSs and other workshops), and training/ informational materials will be available in other common languages as necessary (translation support also available). Materials will also be presented in ways to reach diverse audiences (e.g. using photos and diagrams to reach illiterate households, etc.).

Selected Risk Factor 12 Inadequate inclusion of women		
Category	Probability	Impact
Technical and operational	Low	Low
Description		
Inadequate inclusion of women in the programme		
Mitigation Measure(s)		

- The project aims for balanced participation of women, and includes measures targeted to strengthen gender equality across all Components and Activities.
- Gender is seen as a cross-cutting theme within the project, and the Gender Action Plan identifies concrete activities and indicators for the project across Components and Activities, as well as roles and responsibilities and the timeline for the implementation of these measures. The GAP has been fully integrated into the programme log-frame and timeline, and ensures the programme not only promotes gender equality but also gender-responsive monitoring and management. For more information, please refer to the ESMP and the GAP**.**

Selected Risk Factor 13 Contamination with UXO		
Category	Probability	Impact
Technical and operational	Low	Low
Description		
Parts of the programme area is contaminated with Unexploded Ordnances (UXO), which is relevant for agriculture and forestry related (Components 2 & 3)		
Mitigation Measure(s)		

During the Second Indochina war (1964-1975), more than 2 million tons of bombs were dropped on Lao PDR, making it one of the most heavily bombed countries in the world. Hence, large areas of Laos are contaminated with UXO and affect in certain areas the socio-economic development of the country, preventing access to agricultural and forest land and increasing the costs, through land clearance, of all development projects. Also, within the GCF programme Area, sizeable tracts of land are contaminated in Houaphan and Luang Prabang, while the provinces of Sayabouri, Bokeo, Oudomxay and Luang Namtha are just slightly affected. Since certain agriculture and forest related activities (e.g. rice cultivation, ploughing, tree planting, timber harvesting operations) might cause accidents with UXO, the following measures should/can take place at all sides to avoid under any circumstances such incidents:

- Impact assessments based on historical bombing data as well as on the Information Management System for Mine Action (IMSMA324).
- Confirm clearance of UXOs with provincial authorities before commencing project activities
- Applying NRA UXO guidelines and other standardised resources available online at http://www.nra.gov.la/resources.html
- Working with the local population and guides, who know the area

If needed:

- Clearance can be initiated through the Government's National Unexploded Ordnance Programme (UXO Lao) or alternative land plots or other forms of cultivation must be identified
- Community-based Mine Risk Education activities to offer people knowledge and alternatives for living and working safely in mine/UXO contaminated areas

Selected Risk Factor 14 Insufficient resources for expert guidance are provided		
Category	Probability	Impact
Technical and operational	Low	High
Description		

• The project size will require guidance by experienced managers and technical experts to deal with the significant challenges that can be expected during implementation. It must be guaranteed that appropriate funds for crucial positions are provided to ensure efficient project management.		
Mitigation Measure(s)		
• The proposed budget has been adjusted to accommodate such essential positions, pending donor approval. • Justifications for such positions have been provided in this document. • Experiences from Project 1 have been analysed and the project structure of Project 2 has been adjusted.		
Selected Risk Factor 15 Increasing depreciation of the LAK and high inflation		
Category	Probability	Impact
Forex	Medium	Medium
Description		
• Inflation in Laos has devaluated the LAK by 20% since 2018 and is currently at its highest rate since 2013 with 7.31%..Whilst inflation of the national currency currently at around 5% relative to the project currency may provide a larger leeway for project activities, the impacts on trade and the economic situation of project beneficiaries are uncertain.		
Mitigation Measure(s)		
• The budgeting team was made aware of the issue during budget development. • GIZ will follow its cash management processes to ensure mismatches between conversions of contributions received and project spending are kept at minimum times. In the context of the project the EPF receives (according to the plan and depending on the degree of implementation) funds from GIZ every 3 months. This is paid into a EUR account of the EPF. • GIZ will continue monitoring potential impacts from currency and inflation risks throughout the implementation of the project		
Selected Risk Factor 16 The demand for technical assistance outweighs the demand for capital items		
Category	Probability	Impact
Technical and operational	Medium	Medium
Description		
• Feedback from other matching grant schemes as well as the conducted field missions indicate that the Agri-MSME sector in Laos suffers more from a lack of operational funds and the need for technical assistance (e.g. capacity building etc) than it thirsts for capital items.		
Mitigation Measure(s)		
• The TA component has been strengthened to support agri-MSMEs throughout the process • The matching grant allocation ceiling was raised to capture a wider range of possible agri-MSME beneficiaries		

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12. Appendix

12.1 Relevant Baseline Projects and programmes in the Sector

There are a number of past and existing projects that have been implemented in the target programme region. The design of the GCF programme largely builds upon the lessons learned from these projects and seeks to address and complement them. An overview of each project is provided in the following table:.

Project name: Land Management and Decentralized Planning (LMDP)	
Funding entity	BMZ
Timeframe	2015 – expected 2023 (LMDP I: 2015-2017; II: 2017 III: 2021)
Financing volume	EUR 7 million
Project objectives and components	To improve policies, practices and planning processes in relation to land in the Lao PDR, particularly among investors, village authorities and villages. The five components include: (i) provision of policy and technical advice to the Lao government on improving land governance, (ii) land use and spatial planning, (iii) land registration, tenure security and improved knowledge of villages on land issues (iv) decentralized development planning and (v) promoting high-quality investment promotion. All measures entail capacity development and cooperation with related projects, such as the GIZ Improving Land Management in the Mekong Region project. The core focus of LMDP 3 is to integrate land related information systems and procedures developed under the previous projects (LMDP 1+2). And capacity building of important actors to ensure partners are able to apply the developed tools and procedures. This involves: training courses at provincial and district level to improve local expertise in software development, procedural issues and technical tools training (GIS and UAV-drones are provided); implementation in the pilot province Sayabouri; and policy dialogues between government partners and other donors in topics related to good land use governance.
Linkage/relevance to REDD+ and GCF programme	**Closely linked to Outputs 1.2 and 2.1 of the GCF programme design**: Both LMDP and the GCF programme support capacity development/training towards pro-poor development and management; including rural villages in planning and decision-making regarding land; advancing external communications with donors, government and non-governmental actors; bolstering land regulations, as well as increasing productive and sustainable investments on land to reduce pressure on forests and increase incomes. Another link between the projects: LMDP focuses on registration of plots of land and the GCF programme contains a boundary demarcation element. 3 of the 4 LMDP project provinces overlap with GCF programme target areas, namely Houaphan, and Luang Namtha. Villages with land use plans supported by the LMPD project will be targeted by the GCF project. LMPD project does not support the implementation of the village management plans, the GCF project will fill this gap. <u>Barriers:</u> National legislation, irregular implementation and enforcement of laws (land registration was conducted, but unclear if these can be converted to land titles under current legal framework), villagers' lack of income/resources to invest in land

	and repay loans, low turnout of women in trainings/information dissemination workshops, project's inability to influence/directly resolve land conflicts, problematic nature of land leasing (one of the land transaction activities resulting from increased land security).
Achieved results / impacts	LMDP III started recently; the following are impacts of LMDP I and II: • In selected villages, villagers in intervention areas are consistently more aware of land rights than in non-intervention areas; however, enhanced knowledge of key topics was found more among men than women. • Land tenure security improved to some extent (PLUP conducted across 67 villages, 31,000 plots of land were registered, 25,000 land titles issued, and a GIZ-supported digital cadastre (the Lao LandReg) was established). While there are existing PLUPs, most if not all can be reassessed and some updated. • Land transactions have increased. The land titling process did not play a strong role in resolving land conflicts but did support village authorities in tackling these issues locally. • The project has contributed to improved land governance, including land use planning at all levels. • In some cases, the titles helped villagers access loans; in others, land collateral was not required. • 6 district level spatial plans (called 'Area Physical Frameworks') have been drawn up, with input from more than 2000 villagers from 40 villages
Intended coordination	Preferably, villages with land use plans supported by the LMPD project will be targeted by the GCF programme. The LMPD project does not support the implementation of the village management plans. The GCF programme will fill this gap and support the implementation, monitoring and evaluation of the land use plans within the targeted area.

Source:https://www.giz.de/en/worldwide/31066.html;https://snrd-asia.org/wpcontent/uploads/2020/11/20200114_Factsheet_LMDP_Final_ENG_pr.pdf

Project name: CliPAD Climate Protection through Avoided Deforestation (CLiPAD)	
Funding entity	German government (BMZ).: GIZ (Technical Cooperation), KfW (Financial Cooperation)
Timeframe	2009 – expected 2024
Financing volume	TC module GIZ: 9.8 million Euro
Project objectives and components	TC component: The project objective is to meet the central conditions for performance-based payments from the Carbon Fund of the World Bank set up by the FCPF: i.e. to improve conditions for SFM and REDD+ measures for stakeholders, as well as strengthen policy and institutional frameworks and initial implementation strategies at national and sub-national levels. The four components include: (i) national REDD+ support, (ii) provincial REDD Action Plans (PRAPs) development, (iii) access to climate finance and (iv) implementation of village forest management.
Linkage/relevance to REDD+ and GCF programme	**Closely linked to Outputs, 1.2 and 3.1 of the GCF programme design. GCF programme builds upon the achieved results, experiences and lessons learned from the CliPAD project;** both projects focus on strengthening the enabling environment for REDD+ and supporting planning and implementation processes of village forestry through developed Village forest management plans, to involve villagers in SFM. Village forest management: The project has piloted innovative co-management approaches for certain National Protected Areas and forest areas outside of the three forest categories and promoted/disseminated new knowledge and sustainable practices among villages, especially among women. New mitigation

	activities have been introduced in some pilot villages: e.g. Forest Law enforcement and agriculture extension measures. Many pilot villages also completed their first village forest management plans and agreements. REDD+ readiness and implementation support: CliPAD supports Houaphan province with REDD+ readiness, piloting of climate change mitigation measures including village forestry, and supported the development of the first PRAP in Lao PDR (2016). Also, PRAP development in Luang Namtha and Sayabouri was supported by the project (2017). CliPAD supported the establishment of Village Development Funds; the GCF programme will use this type of institution to access finance for deforestation-free agricultural value chain development in the future. Both projects also support marketing and easing access to markets and market information for project beneficiaries for agricultural products, to reduce pressure on forests. The regional focus of CliPAD (Houaphan) also overlaps with that of the GCF programme. The project team supported the preparation of the ER-PD for six Northern Provinces. GCF programme development: The project has invested in the preparation of the GCF programme and the mobilization of international climate finance for the implementation of REDD+ in Lao PDR.
Achieved results / impacts	70 Local villages in Houaphan are supported in developing sustainable natural resource management practices and finding alternative income sources. In collaboration with the Village Forestry and NTPF Management Division and provincial and district forestry officers, the project supported the development of an implementable village forest management guideline which is now the official VFM guideline of Houaphan province. This has contributed to the strengthening of the enabling environment for the forestry sector. Further, the REDD+ Task Force, REDD+ Division in the Department of Forestry and working groups have been established, and baseline studies on the current state of forests in Lao PDR has been completed, creating reliable data for monitoring purposes. The ER-PD of Lao PDR was approved in June 2018 by the Carbon Fund. Additionally, CliPAD, the Wildlife Conservation Society (WCS) and counterparts developed the first time in Laos a provincial Law Enforcement Action Plan (LEAP)[147] to reduce Deforestation and forest degradation in Houaphan Province. This included the setup of so-called rapid response teams (members from different law enforcement agencies, e.g. forest office, police, army) on provincial and district level and a close cross border cooperation with Forest Protection Departments in Vietnam.
Intended coordination	The project team of the CliPAD project (GIZ) will lead the national project management unit (NPMU) of the GCF programme and ensure coordination with national and international partners.

Source: https://snrd-asia.org/climate-protection-through-avoided-deforestation-clipad/

Project name: Forest Law Enforcement, Governance and Trade FLEGT	
Funding entity	BMZ (implemented by GIZ)
Timeframe	Oct. 2013 - 2021
Financing volume	5.8 + 4.6 + 5.7 = EUR 16.1 million
Project objectives and components	The programme objective is to improve opportunities for the Lao timber industry to access the EU market, diversify their timber products and increase revenue from timber exports.
Linkage/relevance to REDD+ and GCF programme	**Closely linked to Activities 1.3 and 1.6 of the GCF programme design (Law enforcement and monitoring).** In 2016, a first draft Timber Legality Definition with Principles was elaborated for the first face-to-face FLEGT/VPA negotiations between Lao PDR and EU. This was significant as a concrete definition is crucial

	for Lao PDR to generate new export opportunities in ASEAN and other markets and thus enhance competitiveness of the timber industry, improve the supply of raw material, etc. Private sector actors such as timber processing, furniture and handicraft companies/industries will be able to plan their operations more effectively due to more regulated and sustainable supply of raw material. In this way, FLEGT and the GCF programme are synergetic and focus on improving regulation and enforcement, with the FLEGT process focusing on improving transparency and traceability as well as standards and protocols for sustainable commercial wood markets (e.g. (e.g. wood legality standards, key definitions, timber legality assurance system, elaboration of a voluntary partnership agreement between Lao PDR and the EU), and the proposed programme increasing participation of villages in planning and decision-making, inducing behavioral change and improving access to, and involvement of villagers in sustainable markets. These factors together contribute to the mutual goal of both projects of improving sustainable management of forests, landscapes and natural resources and supporting livelihoods. Institutional and political barriers: Maintaining committees/teams at all levels of Government. In the FLEGT VPA process, high level of support required from upper echelons of Government to amend legislation related to forest management, inspection, timber sales, wood processing, trade, etc.; need to increase capacity of new divisions under the Dept. of Forest Inspection to serve as focal points for FLEGT VPA development and implementation; and lack of full participation of decision-makers and directors of appropriate departments in meetings: i.e. coordination issues.
Achieved results / impacts	Reforms to the wood processing industry are increasingly making products compatible with international regulations and principles. Furthermore, the FLEGT process is creating an understanding among Government authorities regarding the necessity to amend all relevant forest-related degrees and regulations and initiate the review (among others, needed for the Timber Legality Assurance System and Timber Legality Definitions). In 2019, the country announced commitments to revise sectoral strategy and policies such as Forestry Strategy as well as to linking FLEGT and REDD+ under the framework of the National Green Growth Strategy.
Intended coordination	The GCF programme development team from GIZ has closely coordinated with the FLEGT project. From the moment the FLEGT-VPA is approved, it has positive impacts on the programme, improving timber legality, markets for sustainably produced timber and likely increased interest in sustainable forestry activities from the private sector. Project ended, key lessons learned have been revised and integrated for the design of the GCF project.

Source*:* https://www.euflegt.efi.int/laos

Project name: Village Forestry Management Project (VFMP)	
Funding entity	BMZ, implemented through KfW
Timeframe	2018-2026
Financing volume	EUR 7.7 million: EUR 7 million are provided by the German Government and EUR 760.000 by the Government of Lao
Project objectives and components	The objective of this programme is the improvement of forest ecosystems and the livelihood of the population in the project areas by the sustainable management of village forests. Planned outputs: (i) Enhanced GoL capacity and an enabling environment for village forestry, (ii) Financially sustainable and climate resilient village forestry models operating under varied conditions with secure tenure, (iii) Improved Socio-economic conditions in the VFMP villages as a result of village forestry.

Linkage/relevance to REDD+ and GCF programme	**Closely linked to output 3.1 of the GCF programme design** to plan and implement VFM together with villagers and to support the commercial use of sustainable harvested timber from Village Use Forests. Hence, the pilot provinces and districts of the VFMP are also target areas of the GCF programme (Phiang in Sayabouri and Phonxay in Luang Prabang).
Achieved results / impacts	Project's start was delayed, but expected to begin in spring 2019. No further update information of the project available in the KfW Website.
Intended coordination	The VFMP project provides co-finance for Component 3 implementation The GIZ CliPAD team will closely coordinate with the project implementation team to: - Ensure the close involvement and enhance the capacity of the Department of Forestry (DoF)/Division of Village Forest Management and Non-Timber Forest Products regarding the formulation of a national/technical framework for village forest management (VFM concept/guidelines) towards the sustainable management of village forests as well as on monitoring and evaluation of the work packages. A national VFM concept should promote the legalization of commercial timber use according to forest management plans and the allocation of communal forest land titles. - Provide technical advice and practical capacity building in collaboration with FC for staff of the Provincial and District Agriculture and Forestry Offices (PAFO/DAFO) in the two pilot provinces and districts regarding Village Forest Management.

Source:https://www.kfw-entwicklungsbank.de/PDF/Entwicklungsfinanzierung/L%C3%A4nder-und-Programme/Asien/2020_Projektinformation_Laos-Village-Forst_EN.pdf

Project name: Sustainable Forest Management and REDD+ Support Project (F-REDD) and F-REDD 2	
Funding entity	JICA
Timeframe	1: Oct. 2014 – Sep.2021 2: 2022-2027
Financing volume	USD 7.1 million for F-REDD (for F-REDD2 N/A)
Project objectives and components	F-REDD project: The project aims to strengthen the capacity of forestry sector through strengthening policies, effective incorporation of REDD+, and improvement of forest resource information as the foundation of sustainable forest management (SFM) in both central and provincial level. The four components are: (i) enhanced capacity of the central Government on policy development, implementation and sector coordination, (ii) enhanced quantification of emission reductions and removals resulting from the implementation of the REDD+ activities at a national scale using the National Forest Monitoring System (NFMS), (iii) enhanced institutional development, management and coordination of the national REDD+, and (iv) enhanced REDD+ readiness in pilot site (Luang Prabang Province).
Linkage/relevance to REDD+ and GCF programme	**The JICA activities are closely linked to the GCF programme Outcome 1:** JICA supported the development of the Provincial REDD+ Action Plan (PRAP) in Luang Prabang. JICA supported the Forest Inventory and Planning Division (FIPD) in developing the Forest Reference Level for the ER-Programme and will be responsible for the implementation of GCF programme Activity 1.3 in close coordination with FIPD and the national project management unit (NPMU). JICA will co-finance the implementation of the GCF programme in the provinces Luang Prabang and Oudomxay.

	F-REDD 2 Project will support the GoL to promote the implementation of FS 2035 and national REDD+ strategy, national forest monitoring system, and REDD+ capacity building in Savannakhet Province
Achieved results / impacts	• Supported the PRAP in Luang Prabang. • JICA led the development of the Forest Reference Level and GCF programme will build upon this. • Lao PDR submitted a CN for results-based payments for the period 2015-2018
Results-based payments	• The REDD+ results of Lao PDR, which were submitted to the UNFCCC in 2020, were accepted after a six-month technical analysis by the UNFCCC. • The UNFCCC confirmed Laos' achievement of an emissions reduction, in the context of the F-REDD project, of approximately 12.8 million tCO_2eq and increased removals of 1.9 million tCO_2eq for 2015-2018. • Disclosed under the UNFCCC REDD+ Web Platform (external link)
Intended coordination	Under Project 2, JICA is committed to fully support the NFMS and MRV of the Lao PDR. The support needed from GCF is already covered under Project 1 activity 1.6. Throughout the preparation of the ERPA, F-REDD cooperated with partners to support the GoL on issues including emissions reduction monitoring, safeguards and benefit sharing. To support the completion of REDD+ results, F-REDD collaborated with GIZ to implement the GCF project. JICA support for national level forest monitoring, and capacity building will support the sustainability of Project 2

Source: https://www.jica.go.jp/project/english/laos/018/index.html

Project name: Scaling-Up Participatory Sustainable Forest Management Project (SUPSFM)	
Funding entity	WB/IDA
Timeframe	Aug 2013 – July 2022
Financing volume	USD 39.39 million: Breakdown: USD 19 million IDA grant, a USD 12.83 million grant from the Forest Investment Programme (FIP) under the Strategic Climate Fund (SCF), and a contribution of USD 7.56 million from the Government of Lao PDR (GoL). The Government of Finland is providing parallel financing of USD 14.5 million for technical assistance. (USD 5 million additional financing being asked)
Project objectives and components	The primary objective is to reduce carbon emissions through participatory sustainable forest management in priority areas and to pilot forest landscape management in four northern provinces in Lao PDR. The four components are: (i) strengthening and expanding Participatory Sustainable Forest Management (PSFM) in production forest areas, (ii) piloting forest landscape management, (iii) enabling legal and regulatory environment, and (iv) project management.
Linkage/relevance to REDD+ and GCF programme	GCF programme build upon the project approach and key lessons learned in the implementation of the project. The SUPSFM project has been operating in four out of 6 GCF project provinces.
Achieved results / impacts	Currently under implementation.
Intended coordination	The project team was consulted and key lessons learned were integrated into the design of GCF Activity 3.2. SUPSFM has had a strong focus on activities within production forests, which has informed the design of Projects 1 and 2.

Source:*https://projects.worldbank.org/en/projects-operations/project-detail/P130222?lang=en; https://documents1.worldbank.org/curated/en/797141581735745762/pdf/Lao-People-s-Democratic-Republic-Scaling-Up-Participatory-Sustainable-Forest-Management-Project-Additional-Financing.pdf*

Project name: Lao Agriculture Competitiveness project (LACP)	
Funding entity	World Bank (mostly IDA, partially local sources of Lao PDR) Implementation by MAF in partnership with Netherlands Development Organization (SNV)
Timeframe	Apr 2018 – Jun 2024
Financing volume	USD 29.30 million
Project objectives and components	The objective is to increase the competitiveness and sustainability of selected agricultural value chains in the project areas (5 provinces: Khammouane, Bolikhamxay, Sayabouri, Vientiane province, Vientiane Capital). The projects three components are: i) Improved Agricultural Efficiency and Sustainability, for increased adoption of improved varieties and high-quality seeds, increased application of good agricultural practices, provision of critical productive infrastructure; and strengthening of public services delivery. ii) Enhanced Agricultural Commercialization, aiming to support establishment of an Agricultural Venture Capital Facility (AVCF), better link farmers to markets and conduct studies to improve the enabling environment for agro-enterprise and VC development. iii) Project Management, also to support monitoring and evaluation. The projects rationale seeks to improve the efficiency and economics of agribusiness through the Business plan development, analysis and investment. For this, the project includes matching grants with a maximum of 50% of the total cost of the business plan in order to achieve its objective.
Linkage/relevance to REDD+ and GCF programme	**The project is strongly linked to Outputs 2.1 and 2.2 of the GCF programme**, which are designed to promote deforestation-free value chains and access to markets, as well as to improve access to finance for deforestation-free agricultural value chains. Geographical overlap is only in Sayabouri province. World Bank will oversee the implementation of **Activity 2.1.4,** and regular communication will be ensured (including on lessons learned and best practices)
Achieved results / impacts	Currently under implementation. By October 2020 intermediate results indicators showed: 17023.00 Farmers reached with agricultural assets or services (6963.00 female) and 13039.00 Targeted farmers who are members of the farmer groups (3037.00 female). In addition to that, the projects official website presents its news and activities. For example, matching grants supported tractors have been handed out and training workshops took place.
Intended coordination	The GCF programme design team met (for Project 1) with the project management team and has taken into account key lessons and advice on the design of Activities 2.3. Coordination will only be in Sayabouri province.

Source:https://projects.worldbank.org/en/projects-operations/project-detail/P161473?lang=en; https://www.lacp-maf.org/

Project name: Second Lao Environment and Social Project LENS II	
Funding entity	Financing sources: World Bank/IDA (USD 32 million), Global Environment Facility grant (USD 6.83 million) and Govt. of Lao PDR (USD 3 million),

	implemented by the **Environmental Protection Fund** (EPF – implementing agency)
Timeframe	July 2014 – June 2022
Financing volume	USD 41.83 million
Project objectives and components	The aims of the project are to: (i) provide support to forested upper watersheds of rivers important to hydropower, agriculture irrigation and flood prevention, (ii) create wildlife and Protected Area enforcement standards, (iii) support capacity building for national, provincial and district institutions which implement environmental and social impact legislation, and (iv) build the capacity of the Environmental Protection Fund. The components of the project include: (i) national institutional development and capacity building to improve the capacity and collaboration of national and provincial public institutions, (ii) management of wildlife and protected areas, and (iii) project administration and EPF capacity building.
Linkage/relevance to REDD+ and GCF programme	**The GCF programme builds upon and complements the results of existing and past NPA support projects in the region, such as the LENS II project – specifically, in Output 3.2**: support to national conservation forest management; development and implementation of NPA management plans, producing co-management agreements with villages inside/near NPAs, provision of technical assistance, equipment and capacity building for NPA staff. The EPF will serve as an Executing Entity in the GCF programme. Project 2 will include support for 2 NPAs in the 3 new provinces.
Achieved results / impacts	Progress rated moderately satisfactory. 7 PAs have been approved, reporting of trafficking cases has improved through support to improved law enforcement, various up-to-date reports have been prepared towards the goal of improving information, project communication and monitoring (however, they are not published and the Government website remains offline); status of select wildlife, and threats has been measured for over 245,000 ha of PA, and for forest loss, in almost 355,000 ha. SDA and SDA partner institutions have received project-initiated formal short courses to improve mitigation monitoring and measurement.
Intended coordination	The Environmental Protection Fund will be one of the two Executing Entities of the GCF programme and was selected due to its capacities to implement internationally-funded projects.

Source: https://projects.worldbank.org/en/projects-operations/project-detail/P128393

Project name: Sustainable Rural Infrastructure and Watershed Management Sector project	
Funding entity	Asian Development Fund grant USD 5.00 million, European Union grant USD 4.46 million and loan USD 40.00 million, International Fund for Agricultural Development loan USD 21.00 million, Deutsche Gesellschaft fur Internationale Zusammenarbeit grant USD 24.71 million
Timeframe	Jan.2020- Sep.2027
Financing volume	USD 95.17 million (5+4.46+40+21+24.71)
Project objectives and components	The project's objective is to address issues of productive rural infrastructure (PRI) and watershed management in northern provinces of Lao PDR by using an integrated land use planning approach that integrates efficient, sustainable and climate resilient rural infrastructure, and feasible watershed protection measures. The expected impact of the project is to achieve sustainable and inclusive rural development. The project will: (i) upgrade selected PRI schemes to be climate resilient, efficient, and sustainable; (ii) improve land use management within the PRI scheme watersheds; and (iii) improve institutional arrangements and capacity for good agriculture practices and sustainable watershed management.

Linkage/relevance to REDD+ and GCF programme	Aims to address issues of productive rural infrastructure (PRI) and watershed management. Actions taken that are relevant to the GCF programme/REDD included: providing access to appropriate technology, management and marketing systems, providing upland ethnic women with opportunities and support to participate in the selection and implementation of village and household investments in livelihoods improvements, supporting the organization of villages into small groups, training in credit management, and technical training in livestock rearing. Two project provinces overlap with the GCF programme: Houaphan and Luang Prabang. **Provides co-finance for Activity 2.1.3.**
Achieved results / impacts	The expected outputs are: (i) increase market-oriented agricultural production; (ii) protect watershed ecological; (iii) improve command area irrigation reliability; and (iv) improve nutrition awareness and facilities
Intended coordination	**Provides co-finance for Activity 2.1.3.**

Source*:* https://www.adb.org/projects/50236-002/main#project-pds

Project name: Partnerships for Irrigation and Commercialization of Smallholder Agriculture (PICSA)	
Funding entity	IFAD (Implementation by MAF)
Timeframe	2019 - 2025
Financing volume	Total investment and incremental recurrent costs: USD 85.3 million Of which, USD 21.03 million comprises IFAD Financing; Other international and domestic co-financers are: ADB, GIZ, GoL and beneficiary contribution (USD 5.5 million), largely covering their share in matching grants
Project objectives and components	The goal to which PICSA will contribute is *enhanced livelihood resilience and sustainability within the Project intervention area towards inclusive local economic development*. The project aims to provide added value to irrigation infrastructure through building market linkages, enhancing commercialization of irrigated agriculture and supporting improved nutrition. There are three project components: • Intensified agricultural development respectively profitable smallholder irrigated agriculture, which encompasses (1) trainings for district-level staff, village authorities and water user groups, (2) creating effective market linkages and multi-stakeholder platforms, (3) forming agribusiness investment and farmer group investment facilities, (4) improving access, and (5) extension service provision through public, private and farmer-to-farmer channels. • Value chain development to promote further commercialization of smallholder agriculture by enabling, promoting and starting-up market linkages that benefit smallholder farmers. • Improved nutritional practices, encompassing increased dietary intake and improved diet quality for nutritionally vulnerable groups, and school-based nutrition interventions.
Linkage/relevance to REDD+ and GCF programme	The PICSA project looks into Value Chain development and support, it also works with matching grants to promote agro-enterprise development in the targeted area, which has been taken into consideration during programme design of the proposed GCF project. There is a geographical overlap between GCF and PICSA target area in 3 provinces (Houaphan, Luang Prabang, and Sayaboury). In the districts where the PICSA project operates, the GCF programme will not implement

	Component 2 activities because the proposed activities were designed in a similar way.
Achieved results / impacts	90% of the village population (approx. 40,000 households) are expected to benefit from project interventions. An estimated 35,000 households are targeted by all project activities, and 33,000 are targeted directly by activities aimed at profitable agriculture. Specific project interventions will target nutrition-vulnerable people in the project area, with an emphasis on women, children and adolescent girls.
Intended coordination	This project is being designed alongside a climate-smart irrigation sector programme, financed by ADB (the Sustainable Rural Infrastructure and Watershed Management Sector Project (SRIWMSP)), the European Union (EU), German International Cooperation (GIZ) and the Green Climate Fund (GCF). The NPMU of the GCF programme will closely coordinate activities with the project implementation team of the PICSA project. Provides co-finance for Activity 2.1.3.

Source:https://www.ifad.org/documents/38711624/39485424/Project+Design+Report_2.pdf/cfc454bb-25a4-2737-f273-be69602c0b46?t=1611235601000;https://www.ifad.org/en/web/operations/-/project/2000001892

Project name: Integrated Conservation of Biodiversity and Forests (ICBF)	
Funding entity	BMZ implemented by KfW
Timeframe	2015 – 2022
Financing volume	EUR 17.5 million (Lao contribution approx. 2 million)
Project objectives and components	The project objective is the effective management of selected target landscapes (comprising national protected areas (NPAs) and corridors) sustaining biodiversity in forest ecosystems, while supporting livelihoods of forest-depending villages. The components are: (i) improved planning and management of NPAs, (ii) improved law enforcement in the 2 project biodiversity conservation landscapes, and (iii) sustainable land and forest management including livelihood activities based on PLUP established within the BD conservation landscapes.
Linkage/relevance to REDD+ and GCF programme	Link to GCF project: **GCF programme Activity 3.2.1 (National Protected Area management) builds upon the ICBF project and its approaches on capacity building, strengthening data/information quality and availability, awareness creation, institutional development and support, border demarcation and biodiversity monitoring. Activity 3.2.1 is modelled off the ICBF approach, and KfW provides co-finance for Project implementation.** The GCF programme will provide additional financing after the KfW project ends and will support NPAs that are not supported by KfW. KfW already finances the project in two NPAs in two GCF programme provinces; Luang Namtha and Bokeo until 2022. Project focus on capacity building, strengthening data/information quality and availability, awareness creation, institutional development and support, demarcation, biodiversity monitoring, cooperation with private sector, law enforcement and coordination with VDFs. The focus of the project is on biodiversity conservation landscapes and NPAs, core areas, corridors and buffer zones (therefore operating on the landscape level rather than individual village/district level, similar to the SUFORD approach). The NPAs in the project areas contain the largest contiguous undisturbed forest areas in the project area that are high carbon stock that are increasingly under deforestation pressure. Thus, protection of these NPA forested landscapes is crucial for avoiding deforestation and forest degradation.
Achieved results / impacts	The National Protected Area system is supported with an improved enabling environment through promotion of open standards and adaptive management,

	national events, capacity building measures, awareness creation, improved monitoring information system and database systems, exchange with other relevant projects, site-specific shared governance, updated management plans, improved enforcement and identification of sustainable finance options.
Intended coordination	During the GCF programme design process, close consultation and coordination with the project management team was conducted. Lessons learned will be adopted and implementation approach will be replicated in the GCF programme and were considered in the design.

Project name: Landscape Management and Conservation Agriculture Development for Eco-Friendly Intensification and Climate Resilient Agricultural Systems in Lao PDR (EFICAS project)	
Funding entity	EU (under the GCCAP programme) and AFD
Timeframe	2014 - 2018
Financing volume	EUR 2.2 million
Project objectives and components	The project aims at developing innovative methods and intervention approaches to support farmers' adoption of climate-smart agricultural systems based on conservation agriculture to improve living standards of villagers and increase resilience to economic and climate change. The three work packages are: (i) village landscape management, (ii) participatory innovation network, and (iii) multi-stakeholder communication platform.
Linkage/relevance to REDD+ and GCF programme	2 of the 6 project provinces overlap with the GCF programme, namely Houaphan and Luang Prabang. Both projects had a focus on engaging village villages in co-designing sustainable forest and land use strategies and creating/improving the enabling environment. EFICAS further aims at broad-scale dissemination of alternative production systems through participatory learning approaches and formulation of evidence-based policies and engaging stakeholders in testing agro-ecological practices.
Achieved results / impacts	Villages were highly involved in the project and resultant activities due to the use of PLUP and CADP (village-based agricultural development plan). Positive impacts were found on herd growth (perceived as attractive alternative to cash crops), crop damage from livestock reduced due to fencing and improved livelihoods. Increased capacity of various stakeholders (extension agents and farmers trained on new sustainable methods). However, this does not necessarily improve resilience of villages and the new cropping and livestock systems are not adequately integrated at this stage (e.g. with manure and composting). The adoption rate of alternative practices (legumes, manure etc.) is limited and technical quality of irrigation infrastructure built is low.
Intended coordination	Project ended. Consulted in the design of the GCF programme.

Source*:* https://www.eficas-laos.net/

Project Title: FCPF Carbon Fund: Lao PDR Northern Laos Emission Reductions Payments Project	
Funding entity	WB
Timeframe	2021-2025
Total budget	USD 42.00 million
Project objectives and components	The project aims to make payments to the Programme Entity for measured, reported and verified Emissions Reductions (ER) from reduced deforestation, for est degradation and enhancement of forest carbon stocks (REDD+) in six Lao PDR provinces.

	The project has two components: (i) Verification of and payment for measured and reported ERs generated by the Governments ER Programme in Northern Lao PDR; and (ii) Distribution of the ER payments according to a Benefit Sharing Plan.
Linkage/relevance for GCF project	The WB emission reduction programme is closely linked to the GCF projects goals, especially in **Outcome 1 (mainly Activity 1.1.1; Climate Change Funding Window and sustainable finance.).** That are focused on enhancing the REDD+ funding landscape, through result-based payments from the FCPF Carbon Fund and ERPAs linked and supervised by the WB. Geographical overlap in all 6 provinces of the GCF project: Huaphan, Luang Prabang, Sayabouri, Luang Namtha, Bokeo and Oudomxay
Achieved results / impacts	The projects key intended impact indicators are: 8.4 million tonnes CO2 Emission Reductions; USD 42 million Payment by the FCPF Carbon Fund for CO2 Emission Reductions generated by the Programme; and achieving ER payments distributed in accordance with agreed Benefit Sharing Plan
Intended coordination	Projects 1 and 2 have been designed to support the implementation of the overarching FCPF Carbon Fund ER-P. Results-based payments achieved under the ER-Programme will be reinvested through Activities 2.1.4 and 3.1.2 under Project 2.

Source : https://projects.worldbank.org/en/projects-operations/project-detail/P165751

Project Title: Climate Smart Agriculture alternatives for upland production systems in Lao PDR	
Funding entity	Co-financing: IFAD/WFP, GIZ, WB, GoL and NGO Helvetas; Implementation by FAO and relevant Ministries
Timeframe	2021-2026
Financing volume	USD 18.65 million
Project objectives and components	The projects objective is to *enhance resilience of vulnerable upland communities to climate change impacts through climate-smart agricultural practices in upland production systems.* Project components: • Enabling environment to promote and incentivize resilient and sustainable rural landscapes in Lao PDR • Resilient and sustainable land-use planning and value-chain networks in the northern uplands • Climate-smart technologies and innovations deployed in two provinces of the northern uplands • Monitoring and evaluation, project communication, and lesson learning
Linkage/relevance for GCF project	Link to GCF project: This project is closely **linked to Outcome 2 (Market solutions for agricultural drivers of deforestation).** Additionally, the projects target Provinces (Luang Prabang and Houaphan) are within the target area of the GCF project.
Achieved results / impacts	The project has just started its implementation period.
Intended coordination	

Source.*https ://www.thegef.org/projects-operations/projects/10187*;file:///C:/Users/lauco/Downloads/4f56884f-da56-e911-a835-000d3a37557b_CEOEndorsement.pdf

Project Title: Strengthening Agro-climatic Monitoring and Information System (SAMIS)	
Funding entity	GEF (Least Developed Countries Fund) and other co-financing entities; Implementation by FAO and relevant Ministries
Timeframe	April 2016- April 2020

Financing volume	USD 21.75 million
Project objectives and components	The project objective is to *enhance monitoring, analysis, communication and use of agro-meteorological data and information for decision making in relation to agriculture and food security at national and provincial levels.* The project builds upon the NAPA in order to address urgent adaptation needs in the agricultural sector of the country. The project consists of three components: i) Strengthening agro-climatic monitoring, analysis, communication and use of data and information for decision making in agriculture and food security; ii) Strengthening institutional and technical capacity for monitoring and analysis of agriculture production systems including food security vulnerability and development of Land Resources Information Management Systems (LRIMS) and Agro-Ecological Zoning (AEZ); and iii) Knowledge management and dissemination of information and lessons learned for planning, monitoring and evaluation.
Linkage/relevance for GCF project	Link to GCF project: Component 2 of the proposed GCF project
Achieved results / impacts	

Source*: https://www.fao.org/in-action/samis/en/*; *https://www.thegef.org/projects-operations/projects/5462*

Project Title: Climate Friendly Agricultural Value Chain Project (CFAVCP)	
Funding entity	ADB
Timeframe	2018-2025
Total budget	USD 40.50 million
Geographical scope	Provinces: Champasak, Khammouan, Salavan, Savannakhet, Sekong, Vientiane
Project objectives and components	The CFAVCP project seeks to improve agricultural competitiveness in six target Provinces of the Lao PDR. The project has **three Outputs**: I) Critical agribusiness value chain infrastructure improved and made climate resilient II) Climate smart agriculture and agribusiness promoted III) Enabling environment for climate friendly agribusiness enhanced The project aims to improve climate resilience of agricultural infrastructure, and improve crop productivity, diversification, and commercialization. Also, it will strengthen the capacity of farmers and agribusinesses for climate-smart agriculture, and create an enabling environment for climate-friendly agribusinesses to promote sustainability along the value chain. In order to address problems in the agri-business financial sector the CFAVCP project has planned the following interventions: • **The Matching Grant Scheme (MGS):** USD 7,48 million to support three types of Agri-business. (Rice mills, Vegetable pack houses and bio fertilizers) • **Smallholder Financing Scheme (SFS):** USD 1,25 million to support Agriculture Production Groups (Rice production group, rice varieties production group, vegetable production group and processing group)

Linkage/relevance for GCF project	Link to GCF project: Aims to improve climate resilience of agricultural infrastructure, and improve crop productivity, diversification, and commercialization. Projects are complementary, while the ADB project focuses on infrastructure and capacity development for farmers and agribusiness, the GCF project in coordination with ADB is secured through ADB's role in **implementing Activity 2.1.3.**
Achieved results / impacts	Project currently under implementation. It has launched MGS/SFS in target provinces; selected 15 agri-business for next stage- full proposal; worked on capacity building support in group management and financial management; among others Its target beneficiaries of the MGS are rural households, especially smallholder farmers, including women, whose incomes are expected to increase as a result of the MGS.
Intended coordination	With special focus on the Matching Grants Scheme, close consultation and coordination with the project management team was conducted during the GCF programme design process. Lessons learned will be adopted and implementation approach will be taken into account in the GCF programme and were considered in the design.

Source*: https://www.adb.org/projects/48409-004/main#project-pds*

Project Title: Business Assistance Facility II (BAF II), one of four components of the Lao PDR Competitiveness and Trade Project	
Funding entity	The Lao PDR Competitiveness and Trade Project is supported by Australian Aid, Irish Aid, USAID, and the World Bank
Timeframe	2019-2024
Total budget	Australian Aid (AUD 5.5 million); USAID (USD 3 million), Irish Aid (EUR 360,000) and a World Bank IDA loan (USD 10 million)
Project objectives and components	The objectives of the Competitiveness and Trade Project *are to simplify business regulations, facilitate trade, and improve firm-level competitiveness.* The project has four components: i) improving the business environment ii) Facilitating Trade and Connecting to Markets; iii) Improving Firm-Level Competitiveness and; iv) Supporting Better and More Inclusive Policies The third component is implemented through the **Business Assistance Facility II (BAF II).** It aims to complement improvements in the business and trade environment, though supporting individual private enterprises in accessing business development services through a matching grant facility. BAF II aims to *support eligible Lao companies to increase their competitive advantage, and thereby grow into larger and more sustainable businesses*. BAF II provides matching grants to cover 50% of the cost of specific and tailored technical assistance or 'business development services' that a company needs to become more competitive and grow. Examples of the kinds of technical assistance BAF II is willing to co-fund include: • Attaining quality standards needed to enter new markets or attract new customers • Strategic or technical management guidance relating to the business field(s) in which you operate • Up-grading ICT and internal work processes • Improvements in production efficiency and competitiveness • Improvements in branding and marketing

	• Creating better market linkages and export promotion • Developing products or services that reduce the need for imports • Pursuing new innovations in business practices, products or services
Linkage/relevance for GCF project	Link to GCF project: BAFII aims to improve the business sector of the whole. Outcome 2 is focuses on investments in low-emission and climate resilient value chains for agri-MSMEs.
Achieved results / impacts	The carried a mid-term review in 2021, the implementation progress is satisfactory despite challenges faced because of COVID-19 restrictions. The technical work has advanced, and significant progress has been made in delivering outputs under all components. A gender ''infrastructure'' has been put in place for the project, and efforts are made to mainstream gender issues across all components and build basic technical capacity on gender The Business Assistance Facility under Pillar C continues to perform robustly: • Implementation Progress has been notable, despite the huge adverse impact on the private sector from COVID-19 • As of December 31, 112 grant applications were approved, with a value of USD 900,000 • Sixty percent of approved grants have been to women-led firms, well ahead of the 40 percent target set
Intended coordination	With special interest on the BAF II and its matching grants, close consultation with the project management team was conducted during the GCF programme design process. Lessons learned will be adopted and implementation approach will be taken into account in the GCF programme and were considered in the design.

Source:*https://projects.worldbank.org/en/projects-operations/project-detail/P164813; https://baflaos.com/en/about*

12.2 Definitions for climate-hazard ranking (according to the Global Partnership for Disaster Risk Reduction ThinkHazard! Tool)

Risk Classification	River flood	Landslide	Extreme heat	Wildfire	Water scarcity	Cyclones
High	10-year return period (threshold Inundation depth: 0.5m)	Annual frequency per km2 (1x10-4): >7.5	>32°C at a 5-year return period (WBGT)	Wildfire is difficult to control and often spread over large areas. FWI (The Canadian Fire Weather Index) >30; 2-year return period – likely frequent extreme fire weather	Water availability is <500 m³ capita/yr at the 5-year return period	10-year return period (Intensity threshold of 80 km/h is applied)
Medium	50-year return period (threshold	Annual frequency per km2	>28°C at a 20-year return	Significant probability of fire but controllable in	Water availability is <1000 m³ capita/yr at	50-year return period

Risk Classification	River flood	Landslide	Extreme heat	Wildfire	Water scarcity	Cyclones
	Inundation depth: 0.5m)	(1x10-4): 3.2-7.5	period (WBGT)	certain circumstances. FWI >20; 10-year return period – extreme fire weather likely within the design life of the project	the 50-year return period	(Intensity threshold of 80 km/h is applied)
Low	10,000 year return period (threshold Inundation depth: 0.5m)	Annual frequency per km2 (1x10-4): 1.8-3.2	>25°C at a 100-year return period (WBGT)	Wildfire spread is possible but does not typically cover large areas and is readily suppressed. FWI >15; 30-year return period, extreme fire weather possible within the design life of the project	Water availability is <1700 m³ capita/yr at the 100-year return period	1000-year return period (Intensity threshold of 80 km/h is applied)
Very Low	Based on the current environment, models, and data, no floods are forecast. However, there is still some uncertainty.	Annual frequency per km2 (1x10-4): <1.8	<25°C (WBGT)	Little to no fire spread possible.	In this category no water stress is expected based on longest return period under the current climate, current models and data. However, some uncertainty remains.	N/A

Source: GFDRR. 2017. Methodology report, Updated for ThinkHazard! Version 2. Available online: https://thinkhazard.org/static/documents/thinkhazard-methodology-report_v2_0.pdf

12.3 Overview of PSAP farming models and their mitigation and adaptation benefits

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
Tree-based cultivation system/Agroforestry	Coffee	Intensification of extreme events (floods, droughts, storm)/low yields and irrigation supply problems Drier climatic conditions/Intensification of pest infestation Vertical shifts in ecosystems (Johnston et al., 2010)	CC Impacts: Arabica coffee needs to be planted above 800-900 m a.s.l. In the northern part of Lao PDR some plantations can be found as low as 600, a.s.l. Due to the increase in annual mean temperature (Maniphousay, 2022) the climatic suitability decreases gradually. There is high confidence about intensification of heatwaves in frequency and duration (Masson-Delmotte et al., 2019) leading to decreased yield and increasing the potential for pest infestation (Maniphousay, 2022). The alternation of precipitation patterns due to changing climatic conditions, leads to water yield deficiency (Trisurat et al., 2018) Intervention: Coffee plantation under shade trees as a multi-storey agroforestry system, Water resource planning at the basin level and increasing irrigation efficiency, increased soil fertility due to agroforestry, diversification of crops.	Benefit: Soil protection, stabilization and erosion control (reducing sedimentation, losses of water, soil material, organic matter and nutrients) Trees on cropland enhance soil moisture and water retention, contributing to increased resilience during prolonged dry period (water deficit) Arabica coffee variety planted >800m is adapted to increasing rainfall and temperatures., Increased efficiency of innovation (genetic variety, modelling, and knowledge transfer; EcoLao 2012) Micro-climate buffering	Benefit: Multi-storey cover with higher GHG sequestration. Mitigation of GHG emissions from lower quantities of fertilization.

170 Detailed information interventions can be found in the Technical Extension Sheet for each PSAP Practice. Overall, the integration of climate information in the land use planning process and within PSAP investment plans will further enable improved agricultural land use planning that ensures selected production systems are suitable for the local climate and context. In addition, implementation of PSAP practices will benefit from landscape level planning and interventions under Component 3 that facilitate the restoration and sustainable management of forest lands, enabling the implementation of ecosystem-based adaptation practices that strengthen the overall resilience of forest ecosystems (providing key protective functions that also help safeguard agricultural lands, and reduce impacts such as flooding or sedimentation risks).

171 Note promoted agricultural interventions will only be promoted on non-forested agricultural land. Native forests will not be removed for project interventions. This will be ensured through improved monitoring, capacity building, participatory land use planning and on-the-ground extension support and planning (e.g. within PSAP Investment Plans).

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
				Income diversification, reduces risk of total crop failure and enhances the resilience of farmers	
	Tea	Intensification of extreme events (floods, droughts, storm)/low yields and irrigation supply problems Drier climatic conditions/Intensification of pest infestation Intensification of wildfires Vertical shifts in ecosystems	CC Impacts: Tea strains have been found in Lao PDR that are estimated to be at least 600 years old. The range of altitudes for growing tea ranges from 600-2000 m a.s.l. Tea plants prefer moderately moist, deep, slightly sloped, and acidic soils. With the projected increase in mean annual temperature under future climate change scenarios the fertility and water availability in the soil is likely to decrease if no adaptive practices are used to improve resilience and improve sustainability, having impacts on the yield of tea plantations. The intensification of extreme weather events such as droughts (Masson-Delmotte et al., 2019) is expected to have a severe impact on the yield. Furthermore, the increasing frequency in drought events leads to increased vulnerability for pest infestation and increased risk of wild fires (Maniphousay, 2022). Tea agroforestry is considered suitable for building resilience, species are adaptable to increasing rainfall and temperatures, and good management practices (including through promoting agroforestry and mixed systems), and appropriate tools increase labour efficiency and increase resilience of plants to pest and diseases. Intervention:	Benefit: Water conservation, soil protection, stabilization and erosion control through planting trees (reducing sedimentation and losses of water, soil material, organic matter and nutrients) Trees on cropland enhance soil moisture and water retention, contributing to increased resilience during prolonged dry period (water deficit) Micro-climate buffering through promoted agro-forestry systems will benefit humans, flora and fauna. Local tea varieties used are native to Lao PDR, and have positive biodiversity benefits when planted in systems following PSAP extension guidance	Intervention: Multi-storey cover Benefit: GHG sequestration

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
			Tea agroforestry, promoting optimized water resource management (GIZ & BGR, 2015), selection of adapted and local tree varieties, capacity building and increasing technical expertise.	Income diversification through agroforestry	
	Eucalyptus and Acacia trees	Intensification of extreme events (droughts and storm) Drier climatic conditions/Intensification of pest infestation Decreased vegetation photosynthetic activity (i.e., browning) Intensification of wildfires.	CC Impacts: Fast-growing commercial species such as eucalypts and acacias grow very well in Lao PDR and commercial tree plantations have expanded over the past decades. It is worth noting, that the bioclimatic suitability is likely to decrease by 2050 due to the increase of mean annual temperature (Maniphousay, 2022), although both species are expected to remain suitable for Northern Lao PDR as they are relatively drought tolerant once established.[172] Nonetheless, climate change may increase the vulnerability to diseases (Booth et al., 2017) and/or pest infestation (especially in monocultures), and increase the frequency and duration of wildfires (UNDP, 2021). Intervention: Agroforestry system of intercropping annual and perennial plants between rows of timber trees (on agricultural land).	Benefit: Trees reduce runoff speed, increase infiltration, increase vegetation cover and therewith control/reduce soil erosion. Trees can act as wind breaks and support micro-climate buffering. Trees on cropland (based on site-suitability matching) enhance soil moisture and water retention, contributing to increased resilience during prolonged dry period (water deficit) Income diversification through agroforestry and inter-cropping, resulting in more resilient long-term savings.	Benefit: Multi-storey cover with higher GHG sequestration,
	Bong Bark	Intensification of extreme events (droughts and storm)	CC Impacts:	Benefit:	Benefit:

[172] A study in Yunnan province China found both Acacia and Eucalyptus species to be drought tolerant (Ma et al. 2002)

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
		Drier climatic conditions/Intensification of pest infestation Intensification of wildfire	Bong trees are native tree species found in different regions in Lao PDR. With the increasing frequency of extreme weather events such as drought or storms and the increasing mean annual temperature (Masson-Delmotte et al., 2019) the bioclimatic suitability for Bong Bark is likely to change. Nonetheless, bong trees have suitable growth conditions in Northern Lao PDR. Bong has been used as an important income diversification strategy in Lao PDR that has supported farmers to cope with changes in agricultural production (including rice shortfalls). It is an endangered native species, and planting Bong trees have positive biodiversity benefits. IFAD has been promoting bong bark since 2008, where they have developed knowledge on creating commercial bong tree nurseries and have identified best practices for bong tree planting and bark cultivation.[173] Intervention: Tree plantations of native trees, initially intercropped, sustainable harvesting of the bark (van der Meer Simo et al., 2020).	Trees reduce runoff speed, increase infiltration, increase vegetation cover and therewith control/reduce soil erosion. Trees can act as wind breaks and support micro-climate buffering. Trees on cropland (based on site-suitability matching) enhance soil moisture and water retention, contributing to increased resilience during prolonged dry period (water deficit)	GHG sequestration comparable to secondary forests
	Benzoin	Intensification of extreme events (floods, droughts, storm) Drier climatic conditions/Intensification of pest infestation	CC Impacts: The biological peculiarity of the styrax tree results that the tree does not produce resin in low altitudes (Yokoyama, 2003). Studies suggest that natural environment such as altitude, temperature and humidity influence the productivity of Benzoin. With the increase in mean annual	Benefit: Trees reduce runoff speed, increase infiltration, increase vegetation cover and therewith control/reduce soil erosion.	Benefit: GHG sequestration comparable to secondary forests

[173] For more information refer to: https://www.ifad.org/en/web/latest/-/story/bong-tree-farming-raises-income-of-former-rice-farmers-in-laos

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
		Intensification of wildfires Vertical shifts in ecosystems	temperature and precipitation patterns these biological preconditions can change and effect the productivity of resin. Intervention: Upland Lao PDR includes an environment that is suitable for Benzoin production, which can generate positive adaptation impacts for ecosystems and local villagers. The project will promote native tree species planted in fallow land.	Trees can act as wind breaks and support micro-climate buffering. Trees on cropland (based on site-suitability matching) enhance soil moisture and water retention, contributing to increased resilience during prolonged dry period (water deficit)	
	Rubber	Intensification of extreme events (droughts, storm) Intensification of pest infestation Intensification of wildfires	CC Impacts: Studies suggest that the changing bioclimatic suitability for Rubber until 2050 is positive, resulting in a wider range for rubber plantations (Lefroy et al. 2010). Nevertheless, it is worth noting, that with increasing temperatures and intensification of droughts (IPCC 2019) the vulnerability to pest infestation is likely to increase, especially in monoculture plantations (Johnston et al. 2010), having impacts on the productivity of rubber plantations (especially within monocultures under business-as-usual activities). Intervention: Promotion of more sustainable production practices, with the promotion of rubber within agroforestry systems of intercropping annual and perennial plants between rows of rubber trees, adapted clone varieties. Note: the project will	Benefit: When in agro-forestry systems: Soil protection (cover), stabilization and erosion control (reducing sedimentation, losses of water, soil material) Micro-climate buffering Income diversification	Benefit: Multi-storey cover with higher GHG sequestration

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
			only promote rubber within agro-forestry systems (i.e. not monocultures) and will only support this on non-forested agricultural land, in accordance with the PLUP.		
	Paper mulberry	Intensification of extreme events (droughts, storm) Intensification of diseases and pest infestation Decreased vegetation photosynthetic activity (i.e., browning) Vertical shifts in ecosystems (Johnston et al., 2010)	CC Impacts: Paper mulberry grows as a pioneer species all over the country. It grows at moderate elevations (500-800 m). Depending on the future climate change scenario, the adaption to potential vertical shift will be necessary. The increasing mean annual temperature will result in increased rates of evapotranspiration and the intensification of droughts in frequency and duration (Masson-Delmotte et al., 2019). With the uplands in Lao PDR, there is expected to be suitable areas at elevations where paper mulberry could provide an important livelihood opportunity for local farmers, when sustainably managed. Studies have found that Mulberry can be used for diverse purposes (its leaf foliage and as a medicinal plant), can contribute to restoration of degraded land, water conservation, prevention of soil erosion, and GHG sequestration (Khan Rohela et al. 2020). Intervention: Dense plantation of small native tree mostly under existing tree cover.	Benefit: Very dense canopy and climate buffering Protection and stabilization of river banks, Soil protection (cover), stabilization and erosion control (reducing sedimentation, losses of water, soil material, organic matter and nutrients) Income diversification linked with sustainable forest management Biodiversity and habitat conservation	Benefit: GHG sequestration comparable to secondary forests
	Fruits	Intensification of extreme events (floods, droughts, storm)/low yields and irrigation supply problems	CC Impacts: With the intensification of extreme weather events (Masson-Delmotte et al. 2019), such as storms, droughts and floods the establishment of fruit tree plantations will be	Benefit: Soil protection, stabilization and erosion control (reducing sedimentation, losses of water,	Benefit: GHG sequestration

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
		Intensification of pest infestation Decreased vegetation photosynthetic activity (i.e., browning) Intensification of wildfires	challenged if no adaptive measures are adopted. The increasing temperatures and consequently the increasing evapotranspiration will likely lead to water deficiency (Trisurat et al. 2018). With increased flood intensity soil erosion will also become more prominent (Masson-Delmotte et al. 2019). Attention is needed to support sustainable agroforestry practices, using locally adapted and drought tolerant species, that generate key benefits to strengthen the resilience of fruit production systems. Intervention: Fruit tree agroforestry systems mixed with vegetables, intensively cropped fruit tree and vegetable gardens.	soil material, organic matter and nutrients) Micro-climate buffering Income diversification Selection of suitable climate resilient fruit tree species (local varieties) based on site-species matching Food security	
Cultivated NTFPs	Bamboo	Intensification of extreme events (floods, droughts, storm) Intensification of pest infestation Decreased vegetation photosynthetic activity (i.e., browning) Intensification of wildfires	CC Impacts: Bamboo, considered a non-timber forest product (NTFP), has been increasingly collected from natural resources in the past years, preferably growing on moderately moist soils, close to a watercourse. The increased air temperature and the prolonged drought periods (Masson-Delmotte et al., 2019) are likely to affect the productivity of bamboo culms in future climates if no adaptive practices are adopted (Xayalath et al., 2020). The increasing temperatures also effect the soil water availability (Duc & Voladet, 2019; Trisurat et al., 2018), decreasing potential growth of bamboo. However, IFAD (2020) highlights the importance of bamboo to strengthen resilience and support land restoration. Since bamboo can be rapidly established, it enables flexible management for farmers to adapt their	Benefit: Excellent soil cover Water and soil conservation, stabilization of degraded soils and gully areas Livelihood support and income diversification, with substantial value adding opportunities that can strengthen the resilience of local villagers	Benefit: Very high GHG sequestration in bamboo culms

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
			management and harvesting practices. It can further be used for land restoration in areas with degraded soils and steep slopes, which can prevent erosion and support gully stabilization, among other benefits. Thus, bamboo is still considered a key species for resilience building, assuming that local and well adapted bamboo species are promoted. Intervention: Dense bamboo gardens using best practices for soil and water conservation, promotion of bamboo for gully stabilization and restoration of degraded land.		
	Cardamom	Intensification of extreme events (floods, droughts, storm)/low yields and irrigation supply problems Decreased vegetation photosynthetic activity (i.e., browning) Intensification of wildfires	CC Impacts: Amomum sp. is a forest plant and requires shade and constant moisture levels (Aubertin 2014). With increasing temperature and the intensification of evapotranspiration24 the water availability is likely to decrease affecting the productivity of Cardamom (assuming no adaptive practices are adopted). With the increased frequency of extreme weather events, especially in the wet season, soil erosion is increasing and therefore decreasing the availability of soil organic matter. Furthermore, the reduction of fallow length is leading to a gradual change from suitable areas for Cardamom to suitable areas for Broom Grass and/or peuak meuak (Castella et al. 2013). Intervention: Native cardamom plants under forest cover (maintaining multi-story cover), where trees support	Benefit: Soil protection, stabilization and erosion control (reducing sedimentation, losses of water, soil material, organic matter and nutrients) Micro-climate buffering Income diversification Selection of suitable climate resilient fruit tree species based on site-species matching Biodiversity and habitat conservation	Benefit: higher GHG sequestration

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
			climate buffering and strengthen the resilience of cardamom production systems to climate change.		
	Rattan	Intensification of extreme events (floods, droughts, storm)/low yields and irrigation supply problems Decreased vegetation photosynthetic activity (i.e., browning) Intensification of wildfires	CC Impacts: Rattan prefers high relative humidity of above 78%, fertile, deep, and moist soils with high organic content and good shade cover from trees. The water availability is likely to decrease in future climates depending on the scenario (Masson-Delmotte et al., 2019), affecting the bioclimatic suitability (Maniphousay, 2022) of Rattan in Lao PDR. The promotion of rattan is considered suitable for climate change adaptation in the project area, as it provides an additional incentive to enable forest conservation and restoration, facilitating multi-story canopy and vegetative cover. Intervention: Native rattan plants under forest cover.	Benefit: Requires forest cover, which provides diverse ecosystem services (climate buffering, vegetative cover and soil protection, Soil and water conservation	Benefit: Multi-storey cover with higher GHG sequestration
	Sichuan Pepper	Intensification of extreme events (floods, droughts, storm) Intensification of pest infestation Vertical shifts in ecosystems	CC Impacts: The Sichuan Pepper Tree requires 1850 mm – 2500 mm of annual rainfall and prefers well drained soils. Z. rhetsa can grow in ranges up to 800 m a.s.l. and can be planted in the open or in shade. With increasing temperatures and prolonged drought periods (Masson-Delmotte et al., 2019) the bioclimatic suitability for is likely to decrease in the future climate. The vertical shift of ecosystem will likely lead to an adjustment in suitable areas for Sichuan Pepper (Johnston et al., 2010). Northern Lao PDR has an environment with suitable conditions for the shifting of	Benefit: Trees reduce runoff speed, increase infiltration, increase vegetation cover and therewith control/reduce soil erosion. Trees can act as wind breaks and support micro-climate buffering. Trees on cropland (based on site-suitability matching)	Benefit: GHG sequestration comparable to secondary forests

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
			Sichuan Pepper trees, and it is thus considered a suitable species for promoting more resilient agriculture (in combination with goof agricultural practices). Intervention: Native tree planted in fallows land under good agricultural practices.	enhance soil moisture and water retention, contributing to increased resilience during prolonged dry period (water deficit) Northern Lao PDR has suitable conditions for planting Sichuan Pepper	
Perennial Cash Crops	Broom Grass	Intensification of extreme events (floods, droughts, storm) Intensification of pest infestation Decreased vegetation photosynthetic activity (i.e., browning) Intensification of wildfires	CC Impacts: Thysanolaena maxima preferably grows along steep hills, sandy banks of rivers and moist steep banks along ravines. Soil water availability is likely to decrease, due to increasing mean annual temperature and the intensification of drought in frequency and duration (Masson-Delmotte et al., 2019). However, broom grass is seen as a resilient species to climate change given its bioclimatic suitability, and ability to be often grow in degraded soils and support land restoration.[174] It has further been identified as a key crop in Lao PDR as it requires minimum inputs, grows in diverse oils, supports soil stabilization, is naturally growing, and has value adding opportunities and clear markets (Pha Khao Lao 2020).	Benefit: Soil and water conservation, land stabilization (through broom grass's "web like root system" support land restoration and reduced erosion[175] Income diversification through the production and sale of broom grass. Can also be used as animal feed	

174 Many studies on broom grass are from Nepal (Hou Jones, X. 2019. Combining ecological and infrastructural restoration in Panchase Mountains Region, Nepal. Available online: https://panorama.solutions/en/solution/combining-ecological-and-infrastructural-restoration-panchase-mountainous-region-nepal. For more information, also refer to: https://panorama.solutions/en/building-block/broom-grass-cultivation). Nonetheless, studies in Lao PDR also note that it is an important NTFP in Lao PDR with key markets in Vietnam, Thailand and China and potential for supporting poverty reduction(Pha Khao Lao 2020; see also https://www.phakhaolao.la/sites/default/files/public/publications/attachments/P112_HPH_Broomgrass_A1_01.pdf). The 2020 National Report on Land Degradation Neutrality Target Setting Programme for Lao PDR also highlighted a study where broom grass had among the lowest runoffs of the cultivated land studies (Government of Lao PDR 2020)

175 Hou Jones, X. 2019. Combining ecological and infrastructural restoration in panchase Mountains Region, Nepal. Available online: https://panorama.solutions/en/solution/combining-ecological-and-infrastructural-restoration-panchase-mountainous-region-nepal. For more information, also refer to: https://panorama.solutions/en/building-block/broom-grass-cultivation.

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
			Intervention: Native grass planted on steep slopes and riverbanks to support restoration, and provide additional income to farmers.		
	Jatropha	Intensification of extreme events (floods and storm)	CC Impacts: Jatropha is a drought-resistant species adapting well to marginal semi-arid soils with low nutrient contents. It grows at higher altitude and tolerates slight frost but is vulnerable to prolonged flooding and/or waterlogging. Therefore, the change in bioclimatic suitability in future climates could be negative, as with intensification of extreme weather events, especially the monsoon in the wet season, the occurrence of flooding and/or waterlogging is much higher (Masson-Delmotte et al., 2019). However, given its tolerance to drought, it could be promoted in systems with adequate water management to prevent adverse impacts from extreme precipitation events in the monsoon season. Intervention: Planted along the contour and as living fences	Benefit: Soil and water conservation through wind break Drought-tolerant species	
	Sugar cane	Intensification of extreme events (floods, droughts, storm)/low yields and irrigation supply problems Intensification of pest infestation Intensification of wildfires	CC Impacts: Sugar cane requires a plentiful supply of water, for at least six to seven months each year, either from natural rainfall or through irrigation. Through the increasing mean annual temperature and prolonged drought periods happening more frequently, the water supply management for sugar	Benefit: Soil and water conservation practices, that are more sustainable than BAU Integrated pest management	Benefit: Some GHG sequestration

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
			cane will likely become challenging, and attention should be paid to implement more sustainable practices with attention to soil and water conservation and sustainable production practices. Sugar cane requires careful pest management e.g., against the cane beetle or against illnesses in line with the GAP procedures. The occurrence of pests and diseases is likely to increase as the future climates are more suitable (Johnston et al., 2010). Nevertheless, the bioclimatic suitability for the year 2050, depending on the climate scenario, is predicted to increase as more area suits the site conditions for sugar cane (Lefroy et al., 2010). Intervention: Dense sugar cane plantation of local varieties from Luang Prabang.		
Annual Crops	Maize	Intensification of extreme events (floods, droughts, storm)/low yields and irrigation supply problems Intensification of pest infestation	CC Impacts: The bioclimatic suitability in future climate scenario up to 2050 is likely to decrease for Maize especially in the north of Lao PDR (Lefroy et al. 2010). This is the result of changing climatic conditions (IPCC 2019) intensifying the ineligibility of Maize in the future, especially under business-as-usual intensive monoculture cropping practices that accelerate soil degradation.[176]	Benefit: improved soil conservation and climate resilience compared to current monocropping of maize, genetic varieties better adapted to climatic conditions	Benefit: Improve soil-nitrogen fixation

[176] For example, Lao PDR (2020) found maize monocultures have high rates of soil detachment, erosion an sedimentation. While there are key market drivers for maize within Northern Lao PDR, attention is needed for more sustainable production practices that limit erosion and soil degradation, and strengthen resilience.

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
			Intervention: Mixed cropping of maize and various beans/ legumes.		
	Cassava	Intensification of extreme events (floods, droughts, storm)/low yields and irrigation supply problems Intensification of pest infestation Decreased vegetation photosynthetic activity (i.e., browning)	CC Impacts: For the establishment of Cassava crops water availability is beneficial. The crop responds positively to moist soils. Due to a change in future climatic conditions, depending on the scenario the water availability is likely to decrease, because of the increase of mean annual temperature and evapotranspiration (Masson-Delmotte et al., 2019). Outbreaks of pest infestation, especially in cassava monocultures, can also impact the productivity of Cassava crops (Malik et al., 2020). On the other side Cassava seems to be quite water stress tolerant and therefore the potential suitability in the future climate could expand in some region in Lao PDR (Lefroy et al., 2010). Intervention: Mixed cropping of cassava and various beans, and promoting good agricultural practices for soil and water conservation.	Benefit: improved soil cover and climate resilience compared to current monocropping of cassava, adapted genetic varieties to decrease yield losses (Malik et al., 2020).	Benefit: Improve soil-nitrogen fixation
	New Paddy Fields	Intensification of extreme events (floods, droughts, storm)	CC Impacts: The increasing mean annual temperatures lead to prolonged drought periods happening more frequently. Furthermore, with the intensification of precipitation patterns in the wet season (Masson-Delmotte et al., 2019) the vulnerability to floods is likely to increase having a direct impact on paddy fields.	Benefit: Improves access to water throughout the dry season Enhanced incomes and food security in the dry season.	

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
			Intervention: Creation of new paddy fields (irrigated or rainfed) on suitable, flat land or rehabilitation and enlargement of existing paddy field. It will only be promoted in areas with sufficient water availability (see extension sheet for more details)		
	Sesame	Intensification of extreme events (floods, droughts, storm)	CC Impacts: Sesame crops can grow in poor soils. It is considered drought tolerant but needs moist soil to get established. It has an extensive root system and is not adapted to poorly drained soil and will not tolerate water-logged conditions. With increasing frequency and duration of precipitation especially in the wet season the occurrence of flooding and waterlogging is likely to increase (Masson-Delmotte et al., 2019). Intervention: Mixed cropping of sesame and various legumes, considering adequate water and soil management.	Benefit: Improved soil cover and climate resilience compared to current monocropping Income diversification	
Vegetable Garden	Vegetables	Intensification of extreme events (floods, droughts, storm)/low yields and irrigation supply problems Intensification of pest infestation	Increases in mean annual temperature as well as intensification of drought periods (Masson-Delmotte et al., 2019) is likely to increase water evaporation from the soil and thus reducing soil water availability, affecting the productivity of vegetables (Duc & Saykham Voladet, 2019). Intervention:	Benefit: Local varieties of vegetables well adapted and resilient to climate change	

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
		Decreased vegetation photosynthetic activity (i.e., browning)	Cropping with adapted varieties, which will be promoted in sustainable cropping systems in combination with soil and water conservation practices.		
Fish and Livestock	Fodder plants	Intensification of extreme events (floods, droughts, storm)/low yields and irrigation supply problems Intensification of pest infestation Decreased vegetation photosynthetic activity (i.e., browning) Intensification of wildfires	CC Impacts: The increasing temperatures and the resulting prolonged periods of droughts, with irregularities in precipitation patterns (Masson-Delmotte et al., 2019) could pose as challenges to the growth of fodder plants (if no adaptive practices are adopted). Furthermore, are these conditions favouring the outbreak of pest and diseases having an impact on the productivity of fodder plants (Johnston et al., 2010). At the same time, fodder collection can put pressure on forest resources. Intervention: Establishment of individual fodder gardens, promoting climate-resilient and tolerant local species. Including within agroforestry systems	Benefit: Controlled manure production for increased natural fertilization of selected crops Tree provide fodder for animals and increase livestock productivity while reducing grazing pressure on land Improved livestock nutrition	
Apiculture	Honey	Intensification of extreme events (floods, droughts, storm) Intensification of pest infestation Decreased vegetation photosynthetic activity (i.e., browning) Intensification of wildfires	CC Impacts: The direct impact of climate change on apiculture in Lao PDR remains widely uncertain. Nevertheless, climate change effects the ecosystem surrounding honeybees. With increasing frequency and intensity of droughts (Masson-Delmotte et al., 2019) forest fires are likely to become more prominent. Furthermore, changing precipitation pattern may also lead to decline in available bee fodder. Prolonged	Benefit: Beekeeping in forests helps to maintain forest cover with positive effects on soil and water conservation, fruit and/or coffee beans act fodder.	Benefit: Emission reduction by incentivizing forest conservation (e.g. in combination with VFM)

White list/ PSAP crop/ commodity		Threat / Climate Risk	Climate Change (CC) impacts and proposed interventions	Adaptation benefits[170]	Mitigation benefits[171]
			wet seasons could potentially starve bee colonies by limiting foraging opportunities. This can be additionally intensified by the modified phenological overlap between flower bloom and bee migration, resulting in food deficits for bees and plant pollinators (Guerin, 2020). Intervention: Combination of apiculture with fruit trees or in coffee plantation.	Income diversification and livelihood strengthening to cope with climate shocks.	

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12.4 Agri-MSMEs interviewed in the 3 new Project 2 provinces

Product	Cardamom	Cardamom	Cardamom	Cardamom
Company	Singta Agriculture Extension Company	Vanghong trading Company,	Lao Huayu trading Sole Co	Mr. Houmpaeng Insavan[177]
Location	Xay, Oudomxay	Xay, Oudomxay	Xay, Oudomxay, LNT, LPB	Beng, Oudomxay
No. staff	6 (+50) [178]	5 (+60)	10 (+50)	
Volume	60-100 tons	200 tons	100 tons	20 tons
Max. volume	As much as farmers can provide	Ready to buy more	Ready to buy more	Ready to buy more
Buy from	Xay, La, Beng and Namor (ODX)	Middlemen in ODX, PSL, HPH, LNT, LPB	Brokers in ODX, LNT, LPB	Beng, Houn, Pakbeng Nga, Xay (ODX)
Sell to	China	China	China	Pre-COVID: China; Now: 70% Vietnam, 30% Thailand
Pre-processing		Drying	Drying	Drying
Processing	Drying (10t/d), grading	Dry, clean, grade		Cleaning, grading
Buying price pre COVID	350,000-650,000/kg dry 30,000- 50,000/kg fresh	350,000-500,000/kg dry		300,000-400,000/kg dry
Selling price pre COVID	450,000-750,000/kg dry	450,000-800,000/kg dry		450,000-700,000/kg dry
Buying price in 2021	120,000-250,000/kg dry 20,000- 35,000/kg fresh	130,000-150,000/kg dry	60,000-120,000/kg dry	90,000-150,000/kg dry
Selling price in 2021	250,000-400,000/kg dry	160,000-180,000/kg dry		150,000-170,000/kg dry
Other activities	Extension and training; Contract farming; Seedlings as loan; Produce seedlings for sale.			
Other products	Mung bean and Pumpkin	**Broom grass**, Malabar, Russula, Reishi	Tufuling, Kheua daeng, dry bamboo shoots	Maize, Malabar bark, **broom grass**
Volume	1000-2500 tons		300 tons	>600 tons
Sell to	China		China	
Other locations	Huaphanh and Champasak	Huaphanh		
Potential investment				

Product	Cardamom	Cardamom	Cardamom	Cardamom
Company	Hyjoun Lao-China	Mr. Dee	Mr. Buapha	Mr. Bualien

[177] Domestic district NTFP and agriculture product collector
[178] Maximum number of day-laborers

	Agriculture development Sole Co., Ltd	District collector and head of district chamber of commerce		
Location	Beng, Oudomxay	Namor, Oudomxay	Namor, Oudomxay	Namor, Oudomxay
No. staff	6 (+30)	6 (+20)	3 (+20)	3 (+20)
Volume	80 tons	20 tons	20 tons	60 tons
Max. volume	As much as farmers can provide	Ready to buy more	Ready to buy more	Ready to buy more
Buy from	Beng, Houn, Nga, Pakbeng, Xay (ODX); Hongsa (SBL); Xiengngern (LPB); Nalae (LNT). Buys 20% from farmers	Namor, Xay and Beng (ODX); Bountai, (PSL), Nalae and Luangnamtha, (LNT) from traders and producers	Namor, Xay and Beng (ODX); Bountai, (PSL), Nalae and Luangnamtha, (LNT) from traders and producers	Namor, Xay and Beng (ODX); Bountai, (PSL), Nalae and Luangnamtha, (LNT) from traders and producers
Sell to	China	Vietnam, companies in Xay (China)**	Vietnam, companies in Xay (China)**	Vietnam, companies in Xay (China)**
Pre-processing	Drying (collectors)	drying	drying	drying
Processing	drying, grading	dry, clean, pack	dry, clean, pack	dry, clean, pack
Buying price in 2021/22 [LAK]	120,000-130,000/kg dry Guangdong 20,000-30,000/kg dry Paksong	100,000-150,000/kg	100,000-150,000/kg Guangdong 20,000-60,000/kg Paksong	110,000-150,000/kg Guangdong 20,000-50,000/kg Paksong
Selling price in 2021/22 [LAK]	150,000-180,000/kg Guangdong 50,000-90,000/kg Paksong	150,000-350,000/kg	140,000-350,000/kg Guangdong 50,000-100,000/kg Paksong	150,000-450,000/kg Guangdong 50,000-100,000/kg Paksong
Other activities	Exports for others under their license	Provides maize seed, credit, herbicide & fertilizer to farmers	Provides maize seed, credit, herbicide & fertilizer to farmers	Provides maize seed, credit, herbicide & fertilizer to farmers
Other products	Maize, Job's Tears, **Broom grass,** Malabar, Russula	Maize, **Broom grass**	Maize**, Broom grass**	Maize**, Broom grass**
Volume	Ca 3000 tons	200 tons	1000 tons	2000 tons
Sell to	China	Vietnam (China)**	Vietnam (China)**	Vietnam (China)**
Potential investment				Before COVID: Cash advance from Chinese buyers (>1 bn /y)

Product	Cardamom	Cardamom	Cardamom	Cardamom
Company	Mr. Daeng	Mr. Bounlouang	Mr. Somphone	Mr. Hyxao
Location	Nalae, Luangnamtha	Nalae, Luangnamtha	Nalae, Luangnamtha	Nalae, Luangnamtha
No. staff	0 (+ 2)	0 (+ 2)	0 (+ 2)	2 (+20)
Volume	10 tons	6 tons	21 tons	42 tons
Max. volume	Not clear	Not clear	Not clear	Not clear
Buy from	Nalae (LNT)	Nalae (LNT)	Nalae (LNT)	Nalae (LNT); Bountai (PSL); Xay and Namor (ODX)
Sell to	Other companies in LNT and ODX	Other companies in LNT and ODX	Other companies in LNT and ODX	China
Pre- processing	drying	drying	drying	drying
Processing	none	none	none	Not clear
Buying price in 2021/22 [LAK]	20,000-40,000/kg Paksong 110,000-130,000/kg Guangdong	20,000-40,000/kg Paksong	23,000-40,000/kg Paksong 110,000-130,000/kg Guangdong	23,000-42,000/kg Paksong 120,000-150,000/kg Guangdong
Selling price in 2021/22 [LAK]	50,000-70,000/kg Paksong 170,000-230,000/kg Guangdong	50,000-70,000/kg Paksong	50,000-65,000/kg Paksong 150,000-200,000/kg Guangdong	50,000-80,000/kg Paksong 180,000-250,000/kg Guangdong
Other activities				
Other products	Russula, Malabar, **Broom grass**	Russula, Malabar, **Broom grass**	Russula, Malabar, **Broom grass**	Russula, Maize, (Malabar, Broom grass in the past)
Volume	15 tons	21 tons	20 tons	405 tons
Sell to	Other companies in LNT and ODX	Other companies in LNT and ODX	Other companies in LNT and ODX	China
Other locations				
Potential investment				

Product	Cardamom	Cardamom	Cardamom	Cardamom
Company	Mr. Khanperng	Mr. Theuan	Mr. Somjid	Mrs. Buakham
Location	Nalae, Luangnamtha	Nalae, Luangnamtha	Nalae, Luangnamtha	Viengphoukha (LNT)
No. staff	0 (+2)	0 (+2)	0 (+2)	0 (+20)
Volume	21 tons	17 tons	11 tons	8 tons
Max. volume	Not clear	Not clear	Not clear	Not clear
Buy from	Nalae district	Nalae district	Nalae district	Viengphoukha district
Sell to	Other companies in LNT and ODX	Other companies in LNT and ODX	Other companies in LNT and ODX	Other companies in LNT and ODX
Pre- processing	drying	drying	drying	drying
Processing	none	none	none	none
Buying price in 2021/22 [LAK]	23,000-40,000/kg Paksong 110,000-130,000/kg Guangdong	23,000-40,000/kg Paksong 130,000-150,000/kg Guangdong	20,000-40,000/kg Paksong 130,000-150,000/kg Guangdong	22,000-30,000/kg Paksong 100,000-150,000/kg Guangdong
Selling price in 2021/22 [LAK]	50,000-65,000/kg Paksong 150,000-200,000/kg Guangdong	50,000-70,000/kg Paksong 170,000-230,000/kg Guangdong	50,000-70,000/kg Paksong 170,000-230,000/kg Guangdong	28,000-35,000/kg Paksong 150,000-250,000/kg Guangdong
Other activities				
Other products	Russula, Malabar, **Broom Grass**	Russula, Malabar, **Broom Grass**	Malabar, **Broom Grass**	**Job's tears**, Maize, **Broom Grass**
Volume	14 tons	21 tons	16 tons	175 tons
Sell to	Other companies in LNT and ODX	Other companies in LNT and ODX	Other companies in LNT and ODX	Other companies in LNT and ODX
Other locations				
Potential investment				

Product	Broom grass	Broom grass	Broom grass	Broom grass
Company	Vanghong trading Company,	Mr. Davan[1]	Mr. Khamla[1]	Mrs. Sone
Location	Xay, Oudomxay	Beng, Oudomxay	Beng, Oudomxay	Namor, Oudomxay
No. staff	5 (+60)	3 (+20)	3 (+20)	4 (+20)
Volume	600-700 tons	250-500 tons	300 tons	300 tons
Max. volume	Ready to buy more	Ready to buy more	Ready to buy more	
Buy from	Middlemen in Oudomxay, Phongsaly, Houaphan, Luangnamtha and Luangprabang	Beng, Houn and Xay (ODX)	>10 villages in Beng, Houn and Xay (ODX)	Namor, Xay and Beng (ODX);. Bountai, PSL; Nalae and Namtha (LNT)
Sell to	China	China (90%), Vietnam and Thailand	Thailand	Vietnam, Companies in Xai district (China)
Pre- processing				
Processing	dry, clean, grade, bundle, pack	dry, clean, bundle, pack		dry, clean, pack
Buying price pre COVID [LAK]	8,000-11,000/kg		8,000-10,000/kg	
Selling price pre COVID [LAK]	13,000-15,000/kg		12,000-15,000/kg	
Buying price in 2021/22 [LAK]	9,500-10,500/kg	8,000-10,000/kg	8,500-10,500/kg	8,000-12,000/kg
Selling price in 2021/22 [LAK]		12,000-15,000/kg	11,000-14,500/kg	10.000-15,000/kg
Other activities				Provides maize seed, credit, herbicide to farmers
Other products	**Cardamom,** Malabar, Russula, Reishi	Maize, Malabar tree bark, Job's tears	Malabar, **Paper Mulberry bark**	Maize
Volume		>2500 tons	>300 tons	600 tons
Sell to			Vietnam, Thailand	Vietnam (China)**
Other locations	Huaphanh			
Potential investment				

** Before COVID

Product	Broom grass	Broom grass	Broom grass	Broom Grass
Company	Hyjoun Lao-China Agriculture development Sole Co., Ltd	Mr. Dee District collector and head of district chamber of commerce	Mr. Buapha	Mr. Bualien
Location	Beng, Oudomxay	Namor, Oudomxay	Namor, Oudomxay	Namor, Oudomxay
No. staff	6 (+30)	6 (+20)	3 (+20)	3 (+20)
Volume	100 tons	200 tons	100 tons	500 tons
Max. volume	Ready to buy more	Ready to buy more		Ready to buy more
Buy from	Beng, Houn, Nga, Pakbeng, Xay (ODX); Hongsa (SBL); Xiengngern (LPB); Nalae (LNT). Buys 20% from farmers	Namor, Xay and Beng (ODX); Bountai, (PSL), Nalae and Luangnamtha, (LNT) from traders and producers	Namor, Xay and Beng (ODX); Bountai, (PSL), Nalae and Luangnamtha, (LNT) from traders and producers	Namor, Xay and Beng (ODX); Bountai, (PSL), Nalae and Luangnamtha, (LNT) from traders and producers
Sell to	China	Vietnam, companies in Xay (China)**	Vietnam, companies in Xay (China)**	Vietnam, companies in Xay (China)**
Pre- processing	drying	drying	drying	drying
Processing	dry, clean, pack	dry, clean, pack	dry, clean, pack	dry, clean, pack
Buying price in 2021/22 [LAK]	8,000-10,500/kg	8,000-12,500/kg	8,000-12,500/kg	9,000-13,000/kg
Selling price in 2021/22 [LAK]	10,000-15,000/kg	11,000-13,500/kg	10,000-15,000/kg	10,000-15,000/kg
Other activities		Provides maize seed, credit, herbicide & fertilizer to farmers	Provides maize seed, credit, herbicide & fertilizer to farmers	Provides maize seed, credit, herbicide & fertilizer to farmers
Other products	Maize, Job's Tears, **Cardamom,** Malabar, Russula	Maize, **Cardamom**	Maize**, Cardamom**	Maize**, Cardamom**
Volume	Ca 3000 tons	5000 tons	1000 tons	2000 tons
Sell to	China	Vietnam (China)**	Vietnam (China)**	Vietnam (China)**
Other locations				
Potential investment				

** Before COVID

Product	Broom grass	Broom grass	Broom grass	Broom grass
Company	Mr. Daeng	Mr. Somphone	Mr. Khanperng	Mrs. Buakham
Location	Nalae, Luangnamtha	Nalae, Luangnamtha	Nalae, Luangnamtha	Viengphoukha (LNT)
No. staff	0 (+ 2)	0 (+ 2)	0 (+2)	0 (+20)
Volume	6 tons	5 tons	5 tons	70 tons
Max. volume	Not clear	Not clear	Not clear	Not clear
Buy from	Nalae district	Nalae district	Nalae district	Viengphoukha district
Sell to	Other companies in LNT and ODX	Other companies in LNT and ODX	Other companies in LNT and ODX	Other companies in LNT and ODX
Pre- processing	drying	drying	drying	drying
Processing	none	none	none	none
Buying price in 2021/22 [LAK]	7,000-10,000/kg	7,000-10,500/kg	7,000-10,500/kg	7,000-10,000/kg
Selling price in 2021/22 [LAK]	9,000-12,000/kg	9,000-12,000/kg	9,000-12,000/kg	9,000-12,500/kg
Other activities				
Other products	Russula, Malabar, **Cardamom**	Russula, Malabar, **Cardamom**	Russula, Malabar, **Cardamom**	**Job's tears,** Maize, **Cardamom**
Volume	15 tons	36 tons	35 tons	113 tons
Sell to	Other companies in LNT and ODX	Other companies in LNT and ODX	Other companies in LNT and ODX	Other companies in LNT and ODX
Other locations				
Potential investment				

Product	Broom grass	Broom grass	Young Broom grass	Job's Tears
Company	Mr. Theuan	Mr. Somjid	Namjuam Community	Mrs. Buakham
Location	Nalae, Luangnamtha	Nalae, Luangnamtha	Bokeo	Viengphoukha (LNT)
No. staff	0 (+2)	0 (+2)	6	0 (+20)
Volume	8 tons	10 tons	80 tons	40 tons
Max. volume	Not clear	Not clear	Not clear	Not clear
Buy from	Nalae district	Nalae district	Bokeo	Viengphoukha district
Sell to	Other companies in LNT and ODX	Other companies in LNT and ODX	Vietnamese trader	Other companies in LNT and ODX
Pre- processing	drying	drying	drying	drying
Processing	none	none	none	none
Buying price in 2021/22 [LAK]	7,500-9,500/kg	8,000-10,500/kg	1,000-1,500/kg	3,000-4,500/kg
Selling price in 2021/22 [LAK]	9,000-12,000/kg	9,000-12,500/kg	2,000-2,500/kg	5,000-7,500/kg
Other activities				
Other products	Russula, Malabar, **Cardamom**	Malabar, **Cardamom**	**Mature broom grass, Palmyra palm fruit, Rubber**	**Broom grass**, Maize, **Cardamom**
Volume	21 tons	17 tons	63 tons	143 tons
Sell to	Other companies in LNT and ODX	Other companies in LNT and ODX	Traders, companies in Huayxay (Bokeo)	Other companies in LNT and ODX
Other locations				
Potential investment				

Product	Paper Mulberry bark	Paper Mulberry bark	Palmyra palm fruit	Palmyra palm fruit
Company	Pattana Kasikorn Sole Co., Ltd	Mr. Khamla	Namjuam Community	Kanthavong production and processing promotion Co., Ltd
Location	La, Oudomxay	Beng, Oudomxay	Bokeo	Viengphoukha (LNT)
No. staff	6 (+30)	3 (+20)	6	5 (+70)
Volume	200-500 tons	300 tons	50 tons	200 tons
Max. volume	Ready to buy more	Ready to buy more	Not clear	Actively expanding
Buy from	Beng, Xay, Houn, La (ODX) Luang Prabang	Beng (ODX) Luangprabang	Bokeo	Viengphoukha (LNT), Merng (Bokeo)
Sell to	Thailand, Vietnam, China	Thailand	Khamthone factory in Huayxay	Thailand, Laos
Pre- processing	drying	drying	Peeling, bioling	none
Processing	Wet pulp		none	All to end-product
Buying price pre COVID [LAK]	5.000 - 5.500	3000-5000/kg		
Selling price pre COVID [LAK]	12,000 - 13,000/kg			
Buying price in 2021/22 [LAK]	5.000 - 5.500/kg	3000-5000/kg	3,000-6,000/kg	5000-5500/kg
Selling price in 2021/22 [LAK]	12,000 - 13,000/kg	6,000 - 8,000/kg	5,000-7,000/kg	10,500-15,000 LAK
Other activities				Provision of seedlings and funds to DAFO. Organizing training for farmers
Other products	Minor focus on cardamom, broom grass	**Broom grass**, Malabar tree bark	**Young and mature broom grass, Rubber**	none
Volume		>300 tons	93 tons	
Sell to		Vietnam, Thailand	Traders, companies in Huayxay (Bokeo)	
Other locations				
Potential investment				

12.5 Indicative agri-MSME profiles

Name of Entity	**Singta agriculture Extension Company,**
Business Model & Value Chain Node	The company was established in the early 2000s in Khua district in Phongsali and later moved to Xai district in Oudomxay province. Its business model has been developed and refined over the years, both in terms of markets and technical expertise. The main focus lies on Cardamom, Mung bean and Pumpkin. Using a detailed farmer engagement and extension approach, the success rate of their contract farming is high in all three provinces they operate in (Oudomxay, Huaphanh and Champasak). Villages are selected carefully based on initial trading experiences. A village meeting is organized in which interested farmers, the village authorities, company representative, DAFO, DICO, and a representative from the district governor's office partake. Once the terms have been agreed upon, including the buying price, all of which is witnessed by all participants, technical training is being provided to farmers and DAFO by Chinese experts hired by the company. Then seedlings of an improved Guangdong cardamom variety, which is imported from China as seeds, are provided to farmers. The seedlings are provided on a loan basis which only has to be paid back in the fourths production year, by deducting it from their cardamom sales then. Unlike many other companies they buy both, dry and fresh cardamom, which they dry and grade before exporting to China. Their drying capacity is 10 tons per day which can be expanded if supply and demand justifies it. Before 2021, the company bought more than 100 tons of cardamom, all of which they sold to China. The buying price is between 350,000 and 650,000 LAK/kg of dried cardamom, the selling price is 450,000 to 750,000 LAK/kg. For fresh cardamom, the buying price was 30,000 to 50,000 LAK/kg. In these previous years, Chinese buyers often came to buy directly from their door step. In 2021, however, they only purchased 60 tons of cardamom which they had to export through Bokeo and Myanmar to China, or across the Vietnamese border to China, because the commodity is not on the list of allowed products for import into China. Buying price is now 120,000 to 250,000 LAK/kg of dried cardamom, the selling price is 250,000 to 400,000 LAK/kg. For fresh cardamom, the buying price was 20,000 to 35,000 LAK/kg. A related income line is the sale of improved Guangdong cardamom seedlings to NGO projects, including the provision of training on production techniques to farmer groups and other seedling buyers. In 2019 they produced and sold more than 1 million seedlings for buyers in Oudomxay, Luangprabang, Luangnamtha, Phongsaly, Huaphanh and Xiengkhuang provinces. In this context, the company got asked by provincial authorities in Champasak and Huaphanh provinces to produce and sell improved Guangdong cardamom to local farmers and cooperate with the local authorities to support production in Paksong district in Champasak province and Viengxay district in Huaphanh province. The company uses similar approaches for Pumpkin and Mung bean production, which are bought at 1800LAK/kg from farmers. The amount of 2500 tons previously sold to China is not feasible anymore due to COVID-related constraints, and currently the company exports 1000 tons per year to China. Long border queues with waiting times of up to 30 days lead to high transportation costs and spoilage risk especially for perishable goods such as vegetables. Before COVID, the transportation cost from the company warehouse to the buyers gate in China was 10 million LAK per truck, while now (in 2022) it is 40 to 50 million LAK.
Location	The company is based in Xay, Oudomxay province, but operates also in

	Huaphanh and Champasak provinces.
Development Stage and Certifications	The company is a registered entity in Laos. Its extension approach makes it eligible to tax reductions and priority processing at the Lao border.
Theory of Change & Impact Strategy	Singta is actively expanding cardamom production, a whitelisted crop, identified as forest-friendly.
Innovation / R&D	Introduction of improved cardamom varieties to Lao smallholders, that sell at significantly higher prices.
Risks	
Potential (social, environmental, operational) risks	● Cardamom is a challenging crop as yields are variable and seemingly small differences in environmental conditions may have large impacts on yield. This has led in previous projects to high variability in benefits, with some farmers gaining large profits while others had no harvest even years after establishment. ● Singta's success in its extension approach is based on its careful pre-selection of villages to work with, strongly based on impressions of reliability and trustworthiness, aiming at the establishment of a long-term relationship. It is thus unlikely that the company would agree to work with just any project village. ● Sintga's extension approach is slow and encompasses a step by step business-relationship building over several years. ● Should pumpkin or mung-bean be selected as crops for vegetable gardens, agricultural frontier expansion and other land-use changes could become an issue.
Potential risk mitigation strategies	● Involving the company early, maybe even in the process of where to promote Cardamom, would increase the likelihood of successful market links.

Name of Entity	**Pattana kasikorn Sole Co., Ltd**
Business Model & Value Chain Node	The company is run by a Lao entrepreneur (Mr. Khamla Sypaserth) and comprises a factory for paper mulberry bark processing with a capacity of up to 500 tons per year. The factory required an upfront investment of 600,000 USD. The company employs six staff, four of them women (Khamu & Lao loum) working in shipping and accounting, and 20-30 seasonal workers during the buying season, most of which are of Khamu and Leu ethnicity with 60% being women. Before he built the factory he just bought and sold Paper mulberry bark to China. But as the market demand was stable and high he was aspiring to produce a more refined product leasing him to build the factory. Still, despite the investment, the factory produces only semi-finished products which get exported mainly to China, but also Thailand and Vietnam. In 2019, the company still purchased 400 tons of Paper Mulberry bark from Beng, Xay, Houn and La districts in Oudomxay province. But due to COVID the company was unable to buy even 10 tons from within Oudomxay province since 2020, and is buying now 300 tons/year from Luang Prabang, which is also of higher quality. The lack of supply is also related to the cumbersome harvesting process which encompasses many steps (felling trees in forests and fallow land, peel off the bark, dry and store properly), which makes it unattractive relative to other crops with a higher price. The price for Paper Mulberry bark is 5,000 to 5,500 LAK/kg for an ungraded lot. One common problem is that farmers do not harvest and grade according to the advice given by the factory technician, leading to low quality and quantity. Farmer also often cut and strip branches instead of the trunk, producing low quality material. On top, cutting the trunks

	causes the stump to re-sprout and grow one or more new trunks in the next year, leading to higher yields. To cover its working capital needs, the company normally took a yearly loan of 2 billion LAK from the Lao Development Bank (LDB) and of 1.2 billion LAK from BCEL. In 2022, the company applied for a loan of 5 billion LAK from LDB, but was refused due to organizational changes and limited capital. In general his experiences with bank loan were unsatisfying, as loans were often not disbursed on time hampering the companies ability to buy agricultural and NTFP products. While the company does not work directly with farmers, it provides NTFP and agricultural quotas as well as export services for district collectors, who are then able to export under the company name. The shipping procedure only takes one or two days and costs 300,000 LAK per truck plus the quota fee according to government pricing.
Location	The company is based in Xay district, Oudomxay province. The Factory for paper mulberry bark processing is located in La district, Oudomxay province,
Development Stage and Certifications	The company is a registered entity in Laos. It has moved on from trading raw products to exporting semi-processed paper pulp products to neighboring countries.
Theory of Change & Impact Strategy	The company offers an access point for in-country processing of Paper Mulberry bark for value adding. While traditionally not engaged in direct exchange with farmers, restrictive supply might offer opportunities
Innovation / R&D	• In-country processing
Potential (social, environmental, operational) risks	● Despite assurances that closed water cycles were installed, potential environment impacts of paper factories cannot be precluded.
Potential risk mitigation strategies	● Investments linked to GMP and HACCP could positively impact manufacturing practices and the local paper value chain.

Name of Entity	Mr. Sipheng, rattan furniture manufacturing
Business Model & Value Chain Node	Mr Sipheng is a Lao entrepreneur, who has started with rattan handicraft manufacturing from small household production in 2004. Increasing market demand gave him the confidence to register as community enterprise in 2011, and hire workers on output-based wages . Now he has ten regular staff, 5 men and women, all married couples of Khmu ethnicity. They produce now rattan furniture made to order by his clients. He sells to Luang Namtha, Bokeo, Oudomxay, and Luang Prabang provinces, as well as to Vientiane capital. He buys his raw material from more than ten villages in Viengphoukha district, where rattan is harvested from the wild. But also farmers and traders from Huayxay district in Bokeo province offer him rattan for sale. He purchases 20,000-25,000 rattan canes per year (totaling about 65 to 80 million LAK/year), and pays 200 LAK per cane to the village authorities. He gives cash advances to 2-3 brokers per target village for buying rattan during the buying season from January to May. On average they sell 100 to 200 rattan tables per month, 20-30 rattan beds, 300-500 rattan armchairs, 300-500 rattan round chairs, and 10-20 rattan shoe cabinets. Workers bring their own equipment and are paid as follows:

Item	Production capacity	Wage (LAK/Unit)	Sale price (LAK/Unit)

	Armchair	1-2/person/day	50,000	100,000 - 130,000
	Round chair	4-5/person/day	20,000	50,000 -70,000
	Rattan table	1 per 2 ppl/day	150,000 - 200,000	450,000 - 550,000
	Rattan bed	1 per 2 ppl/day	300,000 - 400,000	750,000- 950,000
	Shoe cabinet	1 per 2 ppl/day	100,000 - 150,000	300,000- 450,000
	He would like to upscale his production capacity by increasing his work space, store more rattan and hire more laborers because his production cannot meet the market demand due to insufficient working capital, space, and staff. He is looking to renting a house as workspace , but could not yet find a suitable place. He estimates an investment of 80 million LAK to expand the workspace and storage, and about 120 million LAK as working capital. With this capital he would be able to hire 20-30 people per month and to produce 2-3 times more furniture than he is doing now. He recognizes his need for capacity building in business and staff management, and would be happy to get support in this field. Equally, getting support in accessing bank loans and tapping into market opportunities would be a priority for him.			
Location	The facility is based in in Viengphoukha district, Luang Namtha province.			
Development Stage and Certifications	Registered as community enterprise and certified as One district One Product (ODOP) producer in Viengphoukha district, Luang Namtha province. Currently aspiring expansion but lacking access to funds and training.			
Theory of Change & Impact Strategy	A typical MSME, this enterprise is eager to grow and has both supply and demand opportunities secured. It is in contact with producers through its brokers and offers immediate income opportunities. It presents as such the link between producer and consumer, but is constrained by lack of capital for growth.			
Innovation / R&D	Set on expansion and management improvement.			
Potential (social, environmental, operational) risks	● Being removed by one step from producers, the enterprise would not take notice of the sustainability on producer side. Only once yields decline would feedback occur. ● The high market demand for rattan and the slow regeneration of the commodity bears the risk of over-exploitation if no proper management is in place.			
Potential risk mitigation strategies	● The expressed need for business management need, offer the opportunity to introduce a more holistic business approach, that include sustainability of production and harvest.			

12.6 Overview and Impacts of FM and FLR Measures

FM and FLR Measures	Adaptation benefit	Mitigation benefit	SDG Benefits
Re-vegetation and restoration of riparian buffer zones	• Reduced sedimentation, reduced river bank rise, riverbank stabilization and improved flood protection (increased resilience to floods) • Micro-climate buffering (increased resilience to increasing temperatures) • Depending on species (e.g. fruit trees, bamboo), products could also be used to diversify local incomes (increased adaptive capacities)	• Enhancement of carbon sinks through forest restoration, and reforestation • Soil carbon sequestration	• Enhanced biodiversity (natural or assisted regeneration and restoration with native species, improved biodiversity corridors, and more holistic landscape planning through PLUP 2.0). • Improved water quality due to reduced sedimentation, with positive impacts for local sustenance, aquatic life, and water-related infrastructure (hydropower)
Revegetation of gully areas	• Reduces soil erodibility (Guo et al., 2020) • Improves shear stress and soil resistance (Guo et al., 2020)	• Improves carbon storage and reduces soil organic carbon redistribution (Liang et al., 2021).	• Improve local food security(Guo et al., 2020).
Restoration of degraded forest	• Improve water resources, enhancing the hydrological cycle, boost availability and quality of water, regulate surface and ground water (IUCN, 2017), improves water infiltration/retention (Rizzati et al., 2018) • Prevents floods and soil erosion (IUCN, 2017) • Reduce pressure on remnant older forests (Carnus et al. 2006 in Locatelli et al., 2015) • Livelihood diversification (Paavola 2008 in Locatelli et al., 2015) • Stabilizes hillsides and reduces landslides (Adger 1999 in Locatelli et al., 2015) • Reduce effects of extreme weather	• Increase carbon sequestration in soil and biomass (IUCN, 2017; Rizzati et al., 2018)	• Increase supply of firewood and NTFPs (Locatelli et al., 2015) • Enhanced food security • Income generation • Safety net for forest-dependent persons • Biodiversity benefits and improved habitat • Watershed restoration and benefits for water quality and quantity

	events, stabilizing land (Locatelli et al., 2015) • Forests are a safety net for local forest-dependent persons and are an important source of food, are a main source of energy and NTFPs		
Forest fire prevention and management (e.g. fire breaks, small reservoirs)	▪ Reduces the risk of wildfires and the intensity (helping maintain forest cover, and generating positive impacts on human health and the provision of ecosystem services)	• Protects carbon sinks (CIFOR, n.d.) • Reduces CO2 and other GHG emissions(CIFOR, n.d.)	• Protects biodiversity(CIFOR, n.d.)
Soil and water Conservation (Rizzati et al., 2018) (eg. Intercropping, Cross-slope barriers)	• Reduces Erosionc(Rizzati et al., 2018) • Improves soil quality (Rizzati et al., 2018) • Improves water infiltration (Rizzati et al., 2018)	• GHG sequestration	• Diversify and increase farmers income
Native Species Reforestation	• Native species are more tolerant to climate change(Rizzati et al., 2018) • Diversity increases resilience to storms, pests and diseases (Rizzati et al., 2018)	• GHG sequestration (Rizzati et al., 2018)	• Increase in biodiversity (Rizzati et al., 2018) • Increase in habitat for broader range of species (Rizzati et al., 2018)
Extended Rotation	• Reduces the time that the soil is bare and the exposure to intensive rain and wind events (Rizzati et al., 2018)	• GHG Sequestration	• Long term income is improved (Rizzati et al., 2018)

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12.7 Capacity needs assessment for the Programme

The capacity assessment below was carried out during the development of the Feasibility Study for the Programme. This assessment was also taken into consideration for the design of Project 2. Capacity needs that were identified during the implementation of the first project and the development of the second project have also been taken into consideration. The activity sheets of Project 2 outline the specific additional. needs to be addressed by Project 2.

Scope of capacity needs assessment

As part of the feasibility study for the GCF programme , a capacity needs assessment (CNA) and institutional gap assessment were conducted, in order to identify the capacity needs of Government institutions and partner organizations to implement and manage proposed intervention activities. This assessment provides a comprehensive perspective on the required critical capacities. This assessment also allows the development of a capacity building strategy. This strategy proposes development measures, which seek to address capacities that require strengthening and optimizing those capacities that are already strong and well-founded.

The implementation of the GCF programme requires supporting laws, policies, strategies and procedures, which are delivered through well-functioning organizations comprised of educated and skilled individuals. Multiple departments within the Ministry of Agriculture and Forestry (MAF) and Ministry of Natural Resources and Environment (MoNRE) that have significant mandates for REDD+ implementation will need to have clearly defined roles and responsibilities. REDD+ requires institutional cooperation and collaboration across sectors and between stakeholders. It is recognized that Government ownership and delivery is not sufficient by itself in achieving the goals of REDD+. In order to be sustainable, REDD+ implementation requires Government and wider civil society and private sector to be involved. The national REDD+ Readiness process conducted a substantive assessment of options and opportunities for setting up a REDD+ Funding Window management framework by looking at existing funds. Through the Benefit-Sharing Technical Working Group, the Forest Protection Fund (FPF)[179] was identified as a potential option for channelling potential funding from the GCF (GoL 2018). Therefore, for the purposes of this assessment, capacity is defined in terms of the institution's ability to effectively allocate and manage REDD+ related financing according to international standards. This focuses specifically on FPF's policies, management systems and monitoring practices concerning Social and Environmental Safeguards and fiduciary standards.

The overall objectives of this assessment were to inform the GCF feasibility study preparation, by:

- Undertaking an examination of the required capacity needs for the GCF programme.
- Determining the level of current capacity at a national level.
- Identifying gaps between current capacity levels and required levels.
- Preparing a capacity development strategy, with interventions for addressing capacity gaps.

This assessment specifically involved:

a) Developing an interview guide and methodology for the capacity needs assessment.

b) Reviewing key relevant policies, standard operating procedures and guidelines.

[179] Previously known as Forest and Forestry Resource Development Fund (FFRDF)

c) Assessing the partner organizations' track records of overseeing or implementing relevant projects or activities.

d) Assessing the number of staff necessary for performing the proposed role of the partner organization in implementing the GCF programme.

e) Exploring the availability of relevant skills, competences and experience of the partner organizations, with key staff necessary for performing the proposed role of the partner organization in implementing the GCF programme. Key organizations include the relevant organizational units in MAF and sub-national agencies responsible for sustainable forest management and law enforcement, and MoNRE.

f) Conducting a CNA for relevant organizational units in MAF and sub-national agencies responsible for SFM and law enforcement (i.e. DOF; DOFI).

g) Conducting a CNA for relevant organizational units in MAF and sub-national agencies responsible for promoting forest-friendly agriculture (i.e. DoA, DALaM, DTEAP).

h) Conducting a CNA for relevant organizational units in MoNRE and sub-national agencies responsible for LUP (DoL).

i) Conducting a comprehensive Institutional Gap Assessment and Capacity Needs Assessment for the Forest Protection Fund (FPF) in order to allocate and manage REDD+ related financing according to international standards (FPF's policies, management systems and monitoring practices concerning Environmental and Social Safeguards and fiduciary standards, as well as a comprehensive capacity gap analysis), including:

    a. A detailed assessment of the FPF's policies, management systems and monitoring practices concerning Environmental and Social Safeguards and fiduciary standards, as well as a comprehensive capacity gap analysis.

    b. A thorough check of the relevant policies against the policy framework and best-practice examples provided by the GCF.

    c. Clear recommendations and an action plan for next steps to be pursued (capacity building, institutional development, operational procedures).

j) Drafting a capacity building strategy for the programme, harmonizing the capacity needs assessment and institutional gap assessment for FPF, and including a comprehensive Capacity Building Strategy for all relevant organizational units in MAF and MoNRE.

Points of entry

Capacity issues can be addressed across three interdependent levels, including the enabling environment (society), the organizational (organizations) and the individual (people). Any of these levels can serve as the point of entry for a capacity assessment.
Based on the requirements of this particular assessment, the key points of entry are at the enabling environment and organizational levels. This approach allows for a broader understanding of the requirements for REDD+. Although the ERP requires the effective implementation of Provincial REDD+ Action Plans (PRAPs) in the six provinces, a Capacity Needs Assessment at the Provincial/District level has already been undertaken. Consequently, this assessment focuses on the national level, although the coordination between the central and local levels is also examined.

Core issues

There are four capacity issues that are most commonly encountered across sectors and levels, although all do not have to be examined in detail. These interdependent core issues are:

- **Institutional arrangements:** the policies, procedures and processes that are in place to legislate, plan and manage the rule of law, development and other functions of state. This relates to coordination structures, roles and responsibilities, and institutional incentives across public sector agencies.
- **Leadership:** the ability to inspire, influence and motivate individuals, organizations and societies is key in achieving REDD+ objectives. Key determinants include the ability to create a vision, rally people around the goals of REDD+, instill a need for change, and infer a sense of shared ownership.
- **Accountability:** allows organizations to monitor, learn, self-regulate and change behavior. Accountability is essential in the management of REDD+, by providing legitimacy to decision-making, transparency and reducing the influence of vested interests.
- **Knowledge and awareness:** the creation, absorption and diffusion of information and expertise towards effective solutions. At the programme level (ERP), knowledge may be influenced by communication frameworks and the ability of stakeholders to adequately participate in REDD+ dialogue.

Functional and technical capacities

Functional capacities are required to create, manage and review policies, legislation, strategies and programs across all levels of capacity (enabling environment, organizational, individual) and core issues (institutional arrangements, leadership, knowledge, accountability). They are key to 'getting things done' and are not associated with any one particular sector or theme. The following five functional capacities are those that are generic to most projects and programmes:

- Capacity to assess a situation and define a vision and mandate.
- Capacity to formulate policies and strategies.
- Capacity to budget, manage and implement.
- Capacity to evaluate.
- Capacity to engage stakeholders.

The technical capacities of relevance to this assessment are explicit to the outputs and activities in the ERP and the associated GCF programme.

Interviews

Primary data was obtained via semi-structured interviews, which provided in-depth information based on participants' experiences and viewpoints. Open-ended, neutral questions were utilized in order to limit influence from the interviewer, and to allow participants to contribute as much detailed information as they desired. A total of 16 different departments, divisions and agencies were interviewed, as outlined in Table 52. Details of the roles of each organization are provided in Chapter 5.

Table 52: Departments, Divisions and Agencies Interviewed

Category	Sub-category (organization name, department/ division/ agency)
Government	**MAF** ▪ Department of Forestry – Protected Areas Management Division – Production Forests Management Division – REDD+ Division – Department of Forestry Inspection – Investment Promotion Department – Forestry Promotion, Plantation and Reforestation Division – Village Forest and NTFP Management Division ▪ Forest Protection Fund ▪ Department of Agricultural Land Management ▪ Department of Technical Extension and Agro-Processing **MONRE** ▪ Department of Land Management – Division of Land Use Planning **EPF** **FPF**
Donor Cooperation	▪ SUFORD-SU Programme ▪ JICA ▪ KfW ICBF Programme ▪ GIZ proFLEGT
CSO	▪ The Centre for People and Forests

Methodological limitations

This assessment relied on seeking different views across central levels. Consequently, the results are based on perceptions, as opposed to directly observed phenomena. The aim was to interview senior staff members (directors), although in some cases, where directors were not available, deputies were interviewed instead. The majority of the interviews were conducted in the Lao language, so there may have been some information that was lost in translation.

This assessment builds on earlier sub-national Capacity Needs Assessments, to recognizing the importance of the coordination and interplay between central and local (provincial and district) levels that are critical to the ERP and the GCF programme. An earlier assessment was undertaken during October 2018 at provincial and district levels, including PoNRE and DoNRE, PAFO and DAFO, POFI and DOFI. This assessment looked at capacities at these levels and has helped inform the wider GCF programme proposal. Over recent years a large

amount of work has been conducted by international project partners, which has helped improve capacity at these local levels.
This assessment also draws on relevant earlier project level capacity assessments, including the GIZ forestry sector Capacity Needs Assessment (Fischer *at al.* 2013). Therefore, the overall capacity needs assessment considers both national and sub-national levels to inform the proposed capacity development plan.

Details of organizations

The following sections outline the mandates of the organizations that were interviewed as part of this assessment. Where available, official mandates are provided in bullet points. In other sections, details of the organization have been articulated from details obtained during interviews.

Ministry of Agriculture and Forestry

Protected Areas Management Division, Department of Forestry

- To be the core entity for collaborating with the involved parties in creating and diversifying the conservation forest allocation plan for management, conservation, protection, development and utilization of the Protected Areas and the land inside them in sustainable manners.
- To be the core entity for collaborating with the involved parties in identifying and upgrading the potential national protected areas as the national parks.
- To support, monitor and evaluate implementation of management, conservation, protection, development, utilization and creation of eco-tour sites in the protected areas as the regional heritage and world heritage.
- To reconcile, consolidate and give reporting about implementation of protected area management.
- To perform other duties as may be agreed and assigned by the upper-ranking officials.

Production Forests Management Division, Department of Forestry

- To support and follow up the localities in order to diversify the allocation and management plan for production forest land into an annual action plan to be implemented each year.
- To consider and consolidate the timber exploitation plan inside the production forest areas, infrastructure construction project areas and mineral exploitation areas in different local areas to submit to high-rank officials for approval.
- To support and follow up the local authorities in terms of logging and logs transportation management.
- To reconcile and report on the outputs from implementation of management works related to production forests, timber exploitation and logs transportation.
- To perform other duties as may be agreed and assigned by the upper-ranking officials.

Forestry Promotion, Plantation and Reforestation Division, Department of Forestry

- To collaborate with the concerned divisions to identify the locations, scope and area of degraded forests, barren areas with potentiality for afforestation and forest rehabilitation, including identification of design, promotion of technical mattes, planting and rehabilitation methods.

- To support, promote and follow up the entity, individuals and juristic persons in planning and implementing the afforestation and forest rehabilitation activity, including registration of plantations, forest rehabilitation zones, certification of planted timber.
- To provide technical advice about tree plantation and forest rehabilitation.
- To reconcile and report on the outputs of implementation of tree planting and forest rehabilitation promotion activity.
- To perform other duties as may be agreed and assigned by the upper-ranking officials.

Village Forest & NTFP Management Division, Department of Forestry

- To be the core entity for collaborating with the local authorities and concerned parties in creation of management plan for the village forests and NTFPs linked with allocation permanent occupations, and termination of swidden cultivation.
- To consider (discuss) and consolidate the NTFPs harvesting plan, firewood (wood for energy) and charcoal from local community and submit to the high-ranking authority for approval.
- To support and follow up local authorities in management of harvesting and transport of NTFPs, firewood and charcoal.
- To reconcile and report on the outputs from implementing the village forest and NTFPs management.
- To perform other duties as may be agreed and assigned by the upper-ranking officials.

Forest Protection Fund Office, Department of Forestry

- To mobilize and encourage income collection from different sources to contribute into the fund.
- To manage and allocate the budgets for different projects, then submit to the upper ranking for approval.
- To develop the fund management system to ensure its strength and sustainability.
- To support, monitor, evaluate, reconcile and report about implementation of the projects applying budgets from the fund.
- To perform other duties as may be agreed and assigned by the upper-ranking officials.

Department of Technical Extension and Agro-Processing

The Department supports animal husbandry and forestry plantation. Most of the projects focus on extension services to support local people. There are projects on: nutrition; animal husbandry; plantations; promoting agriculture by focusing on farmer groups - LURAS (Lao Upland Rural Advisory Service).

REDD+ Division, Department of Forestry

Context: National and provincial arrangements for REDD+ have evolved as part of the Government's efforts to improve and strengthen forestry sector policies and activities. Significant institutional reforms have taken place since 2007, such that roles and responsibilities for responding to climate issues, including REDD+, are now relatively well-established. At the Ministerial level, the Ministry of Natural Resources and Environment (MoNRE) is responsible for monitoring environmental conditions in different areas, including the forest sector, but the primary jurisdictional responsibility for all forests lies with the Ministry of Agriculture and Forestry (MAF). The consolidation of management of the forest sector under MAF has improved coordination and collaboration, as well as capacity to adequately engage with key stakeholders.

The REDD+ Division was set up in 2012 to support the REDD+ Task Force and to establish a number of technical working groups for REDD+, including those related to the development of reference levels and the MRV system, stakeholder participation and consultation, land-use and benefit-sharing. At the national level, there exists the REDD+ Task Force (NRTF). The

National REDD Task Force comprises 16 people. It is chaired by a Deputy Minister of MAF and is formed of 15 Director-Generals from across Government. The structure of the NRTF, supported by the DOF REDD+ Division, is replicated at the provincial level, where Provincial REDD+ Task Forces (PRTFs) supported by Provincial REDD+ Offices (PROs) have been established in 7 provinces. The REDD+ Division, while remaining understaffed, has perhaps had the longest and most sustained engagement with various sectors and, hence, has some capacity to understand the intersectoral issues. Working groups include the Natural Resource and Environment Sector Working Group (NRESWG), the Agriculture and Rural Development Sector Working Group (ARD-SWG), the Forestry Sub-Sector Working Group (FSSWG), the Land Sub-Sector Working Group (LSSWG), etc., which all are important discussion fora for Government and its development partners, including civil society.
There have been a number of REDD+ projects and programs supported by development partners at both national and sub-national levels; these have been coordinated by the REDD+ Division and some are still on-going. These include CliPAD, F-REDD, SUFORD-SU, ICBF, and the Lowering Emissions from Asia's Forests (LEAF) Programme. On the basis of these projects, it can be asserted that the REDD+ Division has significant experience in working with large programs and development partners, but its functional and technical capacity remains constrained by low staffing levels.

Department of Agriculture (DoA)
The Department has a general mandate of management, inspection, support and development of clean agriculture, crop protection and quarantine, and the management of production and investment factors concerning effective cultivation in the agriculture and forestry sectors. Specific mandates include:

- Development of legislation related to crop sector management (law, decree, regulations).
- Development and management of plant protection (pest surveillance and treatment).
- Development and management of plant quarantine (border checks, crop exports, database).
- Clean agriculture development; standard development and certification systems.

Department of Forestry Inspection (DoFI)
The Department of Forestry Inspection was created in 2007 to enforce the provisions contained within the Forestry Law (passed in 2007). It was established to address illegal logging, the smuggling of timber and wildlife, forestry-related corruption, and illegal land encroachment. The Department's mandate is to prevent, detect and suppress forest and wildlife crime over all forest landscapes, resources and supply chains. It is made up of five divisions: Administrative, Legislation and Forestry Inspection, Investigation and Prosecution, Wildlife Inspection as well a Planning and Cooperation. It also has forestry inspection offices at the provincial level (Provincial Offices of Forest Inspection, POFIs).

Department of Agricultural Land Management (DaLaM)
The Department was established in 2012 and is mandated to undertake agricultural land surveys and management, land classification and land use planning, conservation, improvement, demonstration and dissemination of technology for land improvement and development with the aim of effective and sustainable agricultural land management and development. DaLam focuses on four key programs:

- Agricultural Land Survey and Planning Programme.
- Agricultural Land Conservation and Development Programme.
- Agricultural Land Management Programme.
- Capacity Building Programme.

Ministry of Natural Resources and Environment (MoNRE)

Division of Land Use Planning, Department of Land (DoL)
This is one of eight divisions under the Department of Land. The Division is responsible for land use planning, in both urban and rural areas. In addition to the national level (referred to as the Land Master Plan), there are three levels of planning: provincial, district and village. The Division contains four Task Groups, which include:

- Planning and Administration.
- Development and management of the master plan (national land management). Development and improvement of the manual on land use planning.
- Management of the land use plan across sectors in eight land categories. This Task Group is also responsible for study and research as well as issuance of land certificates.
- Responsible for the training and organizing of workshops. Also, monitoring the land use planning implementation at national and local levels.

Ministry of Planning and Investment (MPI)

Investment Promotion Department (IPD)
The Investment Promotion Department (IPD) is the first stop for providing information on the investment process in Laos. The IPD's primary functions include: promoting Laos as an investment destination, offering investment incentives, screening investment proposals, correcting investment data and monitoring investment practices.

Previous capacity assessments

Studies have been previously undertaken on capacity within the forestry sector in Lao PDR. These provide a valuable initial insight into capacity, as well as an understanding of the timeframes and persistency of some capacity gaps.
In 2013, a Capacity Development Strategy for the public forest sector was conducted at central, provincial and district levels (Fischer *et al.* 2013). The key findings at the national level included:

- Lower levels of actual staff than required or planned across all government departments and divisions.
- Lack of job descriptions and limited salaries, resulting in negative impacts on staff motivation.
- Insufficient budgets were a major concern for all departments, with a reliance on projects funding from international donors.
- The Forest Protection Fund is another source of funding, although there were significant concerns about the future availability of the fund due to declining revenues from the official timber trade.
- Lack of equipment in some departments for undertaking activities such as forest inventories.
- There were a large number of training needs across many departments, including GIS, satellite interpretation, computer software and data management, financial management, monitoring and evaluation, and English language tuition.

In 2018, the SUFORD project undertook an assessment of the effectiveness of capacity building, targeting DoF and DoFI which are the two organizations supported by the project (World Bank, 2018). This assessment looked at the organizations themselves, as well as the individuals working within them, and examined central, provincial and district levels. Some reoccurring themes of relevance to this assessment include:

- The capacity is relatively good for carrying out routine tasks and implementing work plans.
- Undertaking new activities and developing new approaches requires external technical assistance.
- Lack of funding to continue activities will hamper the implementation of activities, retaining skills and transferring skills to new staff.
- Capacity retention is an ongoing problem, due to movement of staff.
- Staff attitude may be a major issue. Despite staff having relatively good knowledge and skills, activities are often not implemented properly.
- English skills hinder the possibilities of cooperation with international stakeholders.

Analysis of existing capacity

Generic Institutional REDD+ Functional & Technical Capacity

REDD+ institutional capacity at both national and sub-national levels is variable and has predominantly been influenced by development partner funding flows. The main priority has focused on supporting central-level institutional capacity development within MAF and MoNRE. At the provincial level, REDD+ work has largely been on readiness and demonstration work, with limited operationalization, which is in line with the REDD+ phased approach.

In relation to the proposed interventions under the GCF programme relating to MAF and MoNRE, there are several observations. There have been significant institutional changes, redefining jurisdictional roles and responsibilities, which have been intended to strengthen the effectiveness and implementation of policies and measures to address natural resources management and climate change (encompassing REDD+). This illustrates that the capacity of the Government to set the vision has increased over the last decade, since the inception of REDD+ in the country. Government officials acknowledge that there are aspects of capacity that are stronger than others at the national level and there is continuous evolution of regulatory measures to reduce sectoral conflicts. However, most stakeholders feel strongly that the capacity to establish and manage information systems for REDD+ remains limited, because of the absence of a systems approach with no national and sectoral integration.

This analysis takes note of the ongoing development of a National REDD+ Strategy (NRS) to be accompanied by action plans (noting that the ERP will use PRAPs). However, there are apparent gaps in the current framework as to what national-level monitoring systems would look like, and there is acknowledgement that both technical and operational skills to conceptualize such a framework are currently absent. This is relevant for the GCF programme, as adequate capacity is essential for transparent and verifiable monitoring and reporting. For instance, it will be necessary for central-level institutions to have the capacity to coordinate and develop mechanisms to access relevant and accurate data from different sectors. However, there is a general view that this is a major limitation, since there are no regulatory measures or direct policies that either enforce or reduce the burdensome bureaucratic, manual processes.

There has been a large number of projects and programs implemented at provincial level working on REDD+ issues, with support from different development partners working with the Government (MAF). These projects include CliPAD, F-REDD, SUFORD-SU, ICBF and Lowering Emissions from Asia's Forests Programme (LEAF). These projects have been implemented in a selection of provinces. For instance, Houaphan has been receiving support from several REDD+ related projects, including CliPAD and LEAF. Luang Prabang has been supported by several JICA projects, and now by the new JICA-assisted Forestry and REDD+ (F-REDD) Programme.

While CliPAD and F-REDD have been supporting REDD+ provincial actions, SUFORD-SU and ICBF are collaborating on forest landscape approaches. SUFORD-SU is supporting management of production forests, village forestry and village development. ICBF is supporting the management of conservation and protection forests in two provinces. The anecdotal feedback from these projects shows that it is necessary to continue supporting capacity development (both functional and technical). Table 53 below summarizes key recurring themes from the interviews with staff in the target organizations. The following sections discuss these themes in more detail.

Table 53: Recurring themes in interviews

Vision and Mandate	***Policies and Strategies***

• Unclear roles and responsibilities • REDD+ understanding limited • Multiple agendas across central and local levels	• Inadequate implementation guidelines for operationalizing policies and regulations • PMO 15 successful but has resulted in limited revenue streams from forest logging • 5-Year Planning cycle is critical • Government Order to reduce staff, resulting in heavy workloads • Processes are protracted, manual and paper-based • Good central coordination at the technical level • Central-level to local-level coordination is challenging • Policies on gender equality are in place but implementation remains limited
Budget, Manage and Implement • Unpredictable annual budgets • Reliance on project funding for implementation • Reliance on per diems to incentivize staff • Staff numbers lower than required • Dependency on staff volunteers • Generally, skills and knowledge levels are adequate but could be improved • High staff turnover and role changes • Low staff motivation • Limited delegation • Low knowledge transfer from consultants to staff • Lack of required equipment and infrastructure	***Evaluate*** • Ineffective monitoring and evaluation • Targets are output- rather than outcome-based • National-level data and information systems are lacking • Centralized information systems and data sharing are limited • Skills in GIS and remote sensing and data interpretation available but limited • Outdated software and no licensing in some cases • Legal enforcement lacks random checks • Land use plans are not monitored and enforced • Audits undertaken by State Auditing Authority
Engage Stakeholders • Structures for stakeholder engagement in place but could be more effective • REDD+ Division has engaged in a number of awareness-raising activities • Good examples of cooperation across public and private sectors • English language proficiency highlighted as a challenge in engaging development partners	

Roles & Responsibilities & Government Coordination: The level of coordination at technical levels across central Government departments is generally considered to be good, noting the importance of informal relationships in the Lao PDR. However, at the institutional level there appears to be a lack of clarity in some areas over roles and responsibilities. This may be the result of the restructuring that has occurred across government in the past five years. However, based on the emerging National REDD+ Strategy (NRS), it is possible to say that the capacity exists to identify clear roles and responsibilities, considering what has been established to date through the approved PRAPs. This means that, with adequate support, the departments within MAF are able to determine mechanisms for mutual accountability, but

this will require additional technical and financial support to improve existing policies and regulations. This may require temporary technical assistance within a long-term plan to increase staff to allow for sustained project outputs.

Understanding of REDD+: While central Government staff are generally aware of REDD+ as a concept, the level of technical- and policy-level understanding is still limited. Some departments have been attending awareness and training workshops on REDD+, but it appears that developing a deeper understanding will require learning-by-doing when projects are actually being implemented.

Five-Year Planning Cycle: The Government of Lao PDR (GoL) operates through five-year planning cycle and is currently in its 8th Five-Year Development Plan (2016-2020). The FPF Office stated that, as a general rule, Government-funded projects must have budgets allocated before the start of each new five-year plan. Additional projects may not be accepted once the plan has been finalized. Even departmental funding can miss out, as outlined by the fact that when DoFI was established outside the planning cycle it was initially limited in terms of funding and capacity. The 9th Five-Year Development plan has a deadline for work allocation and budget submissions of October 2019 from line ministries.

Annual Budgets: The annual budget process for individual departments is unpredictable. Annual fiscal allocation typically comes through either the Ministry of Finance, national funds (e.g. FPF) or international development partner funding. Funding from national sources is limited and in some cases budget allocation to departments may not be actually be made available during the course of the financial year. Furthermore, the majority of departments stated that year-on-year national budgets have declined.
Significant implementation budgets are rarely funded from national sources. The high dependency on international donors has created a self-reinforcing cycle, whereby these budgets are the primary source of funding for implementation. The salaries of permanent staff are all still funded from the Ministry of Finance, but it is generally understood that salaries are low.

Staff Numbers: Nearly every central Government department stated that it had fewer staff than required. However, there appeared to be a general lack of clarity over what a suitable number of staff would be. Figure 48 illustrates the current numbers of permanent staff and the required number, as stated during the interviews.

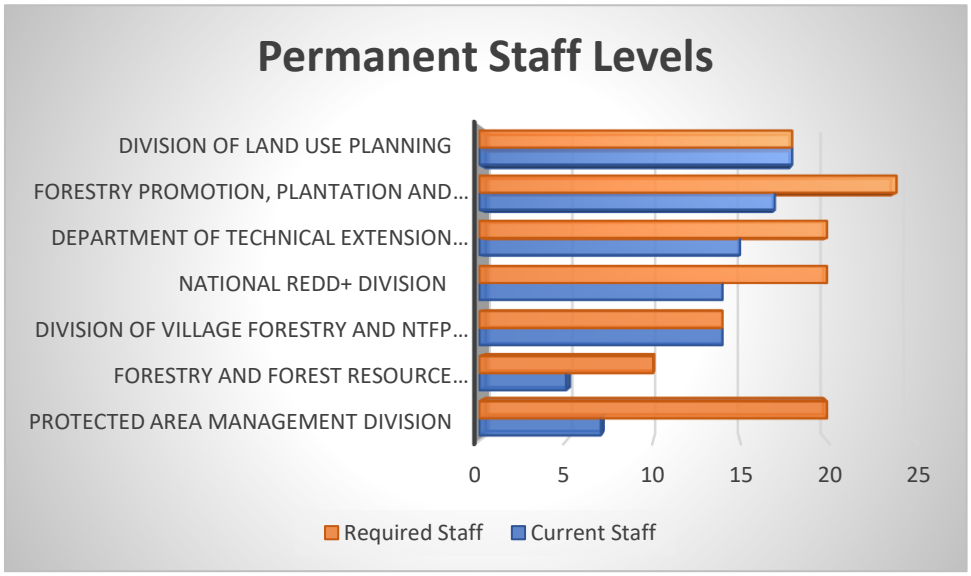

Figure 48. Staff levels

There has been a high-level

Government order to reduce numbers of staff across central Government and to achieve more with less. This is clearly detrimentally impacting individual workloads. Many departments rely on volunteers in addition to permanent staff. In the case of the Protected Area Management Division, it has more volunteers than permanent staff at the central level (7 permanent staff to 10 volunteers). Volunteers in Government departments must wait for permanent positions to arise, which may take years and can impact individuals' motivation levels. Most departments have policies in place in relation to gender equality, and there are large numbers of women working in forestry, particularly at local levels.

Skills, Knowledge and Training: In general, staff at central level have adequate levels of education and training. This assessment did not record specific details, but the majority of staff possess a Bachelor's degree or associated degree, with some staff having a Master's Degree or a PhD. It is noted that a limited number of staff have attained qualifications from international universities.
During the assessment, the main training requests that came from Government departments included (in order of mentions):

- Training in relation to developing staff understanding of REDD+.
- Training in the English language to help improve communications with international donors.
- Training in monitoring and evaluation, including data collection.
- Training in relation to GIS applications and mapping.
- Financial training to help with work planning and project implementation.
- Achieving accreditation to administer certification (e.g. the DoA stated that there is only one person in the Lao PDR who has the ability to give International Federation of Organic Agriculture Movements (IFOAM) certification).

Staff Turnover, Incentives, Motivation and Delegation: Staff turnover is high in a few departments. This is sometimes the result of staff being trained and subsequently moved onto higher positions within the organization. However, there are no formally-agreed career development structures and pathways. Staff turnover at both national and local level is highlighted as a significant concern, with new staff constantly requiring upskilling to fill vacant positions. In some departments, the issue of delegation was raised, with senior staff appearing to be hesitant about passing certain tasks to junior members. Many projects understandably require the use of external international consultants, but there is limited transfer of knowledge to Laos staff. Travel and daily subsistence allowances (DSAs) are the key method in the country to incentivize staff members with an absence of core performance-related pay structures.

Central to Provincial/District Coordination: There are a number of challenges with central-level to local-level coordination. Many departments require on-the-ground implementation from local staff. However, coordination between central and local is not always effective due to what appears as unclear roles and responsibilities, specifically with regard to REDD+. It is typical to designate a number of staff to projects, with individuals rotated on a regular basis. As a result, it is difficult for central Government staff to form enduring relationships with individuals. This also may mean that unskilled staff are assigned onto a project. The regular changes put pressure on the central level to undertake regular training of local staff.

Equipment and Infrastructure: The GoL has an ambition to increase market access for locally-produced commodities, but this will require significant and long-term investment in infrastructure and systems to meet international standards. The persistence of national budget

deficits has limited institutional investment in systems and capacity for product certification. For example, the Department of Agriculture (DoA) stated that Lao PDR has limitations with laboratories for agricultural improvement, product enhancement and certification. Where laboratories are present, they usually have antiquated equipment. DaLaM outlined how better laboratories for soil analysis would help with determining land productivity. Equipment and infrastructure are often provided via projects. However, the challenge is in finding the resources for their ongoing upkeep and maintenance.
English Language: A number of departments cited the need to improve English language as a key training requirement. The current limitations in English make engaging with international project donors and networking with development agencies a challenge.

Enforcement: Prime Minister Order Number 15 of 2016 (PMO15) on "Enhancing Strictness on the Management and Inspection of Timber Exploitation, Timber Movement, and Timber Businesses" has had a high success rate with reducing illegal logging and trading. However, the success of PMO15 appears to be largely attributable to significant pressure from the highest levels of the Government, as opposed to merely improved enforcement from Government agencies. DoFI is a relatively new department and has the ability to undertake legal enforcement at all levels of the supply chain (from forest logging through to the factory floor). However, the Department principally relies on informants and does not have the resources to undertake widespread random inspections.

Land Use Planning: A system is in place with regard to land use categorization and planning. However, the monitoring and evaluation aspects of this system have issues with regard to data credibility (as highlighted below) and with regard to implementation and enforcement. Both DaLaM and the Land Use Planning Division stated that they find it extremely difficult to know if land use plans are being implemented on the ground.

Monitoring and Evaluation: There is a critical lack of effective on-the-ground monitoring and evaluation across a range of areas. Where monitoring does take place, the focus is on the number of outputs (e.g. number of training workshops) as opposed to actual outcomes (e.g. impact on household incomes, food security, improving knowledge etc.).

Geographic Information Systems (GIS): Although most departments believed that they have the necessary in-house skills for GIS and analyzing spatial data, there is a critical need for up-to-date software, preferably open source systems. The high cost of proprietary software such as ArcGIS and ongoing licensing costs can be prohibitive based on departments' current budgets. Effective land use change monitoring will require constant access to current satellite imagery, in order to detect temporal changes through comparisons with historical imagery. However, there is no budget currently set for future satellite imagery acquisition to support land use planning and land use change monitoring.

Data Collection and Management Systems: Some departments, including DoFI, outlined challenges with data collection and integration between national and local levels. Current data collection and management is based on discrete approaches, with some critical datasets stored on personal computers or individual laptops. There is acknowledgement of the risk associated with such approaches, but institutions have not been able to invest in server-based databases due to budgetary limitations. This means that data is regularly lost when laptops are damaged or lost, or when staff members move on to new roles. There is limited use of shared information systems across different departments, although a framework for forestry has previously been established.

Functional and technical capacity in relation to the ER-Programme and associated GCF programme

In order to determine the capacity strengths and gaps in relation to the GCF programme, a capacity assessment matrix was utilized to determine the current capacity against the desired capacity over the next five years. The scores have been calculated by combining all the individual scores for all of the indicators under each activity, to give an overall percentage of progress, with 100% deemed to be at the total required capacity. The findings of this assessment are outlined below. It should be noted that the capacity needs and gaps are cross-cutting; hence, the presentation of the analysis here in some cases combines sub-outputs (i.e. activities). The overall capacity is considered weak (**approximately 56% of the required capacity**).

Capacity status: Output 1 - Strengthening the enabling conditions for REDD+

The current level of capacity to implement REDD+ and successfully participate in results-based payments is acknowledged as still evolving, with a continuous need for international support. The importance of forest resources and its sustainable management are enshrined in the country's highest-level policies, including the 8th National Socio-Economic Development Plan (8th NSEDP 2016-2020), the Green Growth Strategy (under development), the Central Party's Resolution on Land (2017), the Forestry Strategy 2020, as well as in Lao PDR's Nationally Determined Contribution (NDC).

REDD+ is yet to be fully mainstreamed into national planning process and awareness remains limited in key institutions such as DoA, MPI and DTEAP. Noting the institutional reforms implemented in the last five years, the capacity for policy and regulatory reform processes at national level exists, but the process is slow and likely to be protracted due to the lack of adequate data and information to support the development of evidence-based policy. At the provincial level, the opportunity for mainstreaming REDD+ exists as the country transitions into the 9th NSEDP, but this will require a high level of prioritization. In the 8th NSEDP, Outcome 3, Output 1 (Environmental protection and sustainable natural resources management) outlines an indicator to measure the total number of hectares of production forest area that is certified by the Forest Stewardship Council (FSC) or with a Forest Law Enforcement, Governance and Trade (FLEGT) license. The two overlapping processes are expected to continue in the 9th NSEDP.

Institutional coordination at central level has increased over the past five years but remains challenging at sub-national level. At the provincial level, the preparation of PRAPs illustrates the capacity for preparation strategies and action plans, but this does not necessarily translate into operational capacity, which is the essence of the GCF programme interventions.

The creation of DOFI in 2007 as an independent unit with the mandate to enforce the Forest Law and the Wildlife and Aquatic Law created the necessary platform for law enforcement and monitoring. However, operational capacity for effective enforcement and monitoring remains limited due to continued financing gaps, leading to inadequate staffing and necessary information systems. Although Prime Minister's Order Number 15 of 2016 on "Enhancing Strictness on the Management and Inspection of Timber Exploitation, Timber Movement, and Timber Businesses" (PMO15) is being considered as having a significant impact, financing gaps in institutions such as DOFI are likely to reduce future gains. Effective forest law enforcement and monitoring is hampered by deficiencies in analysis capacity due to the lack of integrated data collection from the sub-national to national level, due in part to the lack of centralized information systems within institutions. This affects the ability to share data to improve the effectiveness and coherence of law enforcement and monitoring.

Inadequate and functional IT infrastructure systems to provide real-time and accurate data collection and analysis is a critical gap that will need to be addressed under REDD+. The agriculture sector in Lao PDR is going through unprecedented changes due to commercialization, decentralization and internationalization. As part of this change process, MAF is moving to a more programmatic and outcome-based approach. These changes mean that the Ministry has an ever-growing need for accurate and timely data and information that can guide decision-making, update extension workers and farmers on new agricultural

technologies and practices, as well as monitor the status and progress of the sector. There is also a need for linkages between different agencies and geographic levels, in the context of sharing public information more effectively across government.

The lack of connected information systems (and associated procedures and guidelines) at both national and sub-national levels means that even developing effective data-sharing frameworks is challenging. This assessment is consistent with a 2017 United Nations Report, "Tracking progress towards National Development Goals and Sustainable Development Goals", which looked at aspects of data collection, use and sharing. The report highlights that most departments in MAF are considered effective in feeding their data into decision-making processes and that the use of data has improved at national level. However, there are weaknesses remaining at provincial and district levels, where data use is not so effective in planning, but moderately effective for monitoring purposes. Data is often out of date, due to delayed approval by the Government. The report also highlights the fact that data is largely not computerized, leading to over-reliance on paper-based reports. Non-standardized reporting procedures and formats make administrative reporting prone to bias and errors. There is no regular sharing of data and information between ministries and among practitioners. Practitioners and development partners have limited access to MAF data, since data and reports are held by MAF management.

A preliminary land tenure assessment carried out during the preparation for the ERP indicates that registration of land rights is a high priority for the Government, as mentioned in the 2017 Resolution on Land of the Executive Committee of the Party Central Committee. However, at the institutional level, both national and sub-national, the Department of Agricultural Land Management and the Division of Land Use Planning confirmed the disconnect that exists between land use planning and land allocation. This disconnect is largely because of the lack of integrated information systems that enable institutions to access critical, accurate and up-to-date information. The land registration process is viewed as complex, with the lack of one-stop-shop type guidelines. From this assessment, institutions generally understand the heightened pressure on land from land-based investments that contribute significantly to the country's economic growth. However, the major gap is the lack of adequate measures to support communities' attaining land registration, since the only form of registration of land rights is through a Land Use Plan. For the ERP and the GCF programme, there is a need for adequate technical and operational capacity at the community level, which will ensure monitoring of land use and change that occurs or results from land registration, and alignment of land use planning.

Table 54: Output 1 Capacity Rating

Output and Activity	**Level of existing capacity against desired capacity**	**Key Organizations Involved**
Output 1: Enabling environment for REDD+ implementation	53%	
Activity 1.1 REDD+ Funding Window and Sustainable Finance	50%	FPF; IPD [MPI]
Activity 1.2: Mainstreaming REDD+ into socio-economic development plans	56%	REDD+ Division lead, but requires input from all agencies

Activity 1.3. Strengthening regulatory framework to enable sustainable forest management and private sector investment in community-based agroforestry/plantation development	58%	DOF; MoNRE
Activity 1.4. Improved law enforcement and monitoring	63%	DoFI; All agencies
Activity 1.5. Land use planning and improved tenure security	50%	DOL; DaLaM
Activity 1.6. Implementation of the Measurement, Reporting and Verification system	40%	DOF

Key Capacity Gaps

- Capacity to coordinate and develop mechanisms to access relevant and accurate data from different sectors.
- Low/inadequate staff capacity, limitation in numbers and lowly-remunerated staff, and hence low levels of motivation.
- Prioritizing and streamlining different initiatives into shared vision and goals at the provincial level.
- Capacity to engage in functional partnerships for improved knowledge generation on REDD+ and mainstream into policies and regulatory measures.
- Weak and inadequate monitoring and evaluation systems.

Capacity status: Output 2: Promotion of deforestation-free agriculture

The Government recognizes the importance of improving people's access to diverse and nutritious food at affordable prices. The regulatory and institutional framework for promoting deforestation-free agriculture appears to be in place, and government officials are generally aware that there is need for transformative actions for the agriculture sector. However, there is limited capacity to implement new agricultural practices as farmers need training, access to assistance programs and technology. Current financial capacity and operational capacity of institutions such as DALaM is limited.

Agricultural extension systems have limited outreach programs and little to no collaboration with the private sector. Farmers lack the knowledge, capacity and finance to change agricultural practices, while it is observed that relevant government institutions lack the capacity to develop investment plans and incentive systems that facilitate investments. Communities also lack the systems and funding to monitor the impact of particular practices. Departments administer a range of extension services, and some good examples of farmer field schools and programs such as FAO's Save & Grow Scheme (http://www.fao.org/ag/save-and-grow/) exist that have been implemented in parts of the country. Such programs could provide important lessons for the GCF programme.

With regard to private sector engagement, private companies depend on training and capacity building for farmers to meet sustainability practices, but currently there are limited facilities and a lack of open dialogue between government institutions and the private sector. There is a need to focus efforts on removing investment barriers, but also the private sector should be encouraged to present concrete suggestions to Government on policies and activities that could be prioritized to stimulate investments in sustainable land use practices. A major gap seems to be limited access to finance with low interest rates for agricultural schemes.

Table 55: Output 2 Capacity Rating

Output and Activity	Level of existing capacity against desired capacity	Key Organizations Involved
Output 2: Market solutions for agricultural drivers of deforestation	**59%**	
Activity 2.1. Local incentives for good agricultural practices and agroforestry	63%	DoA; DTEAP; DaLaM
Activity 2.2 Catalysing private sector investment in value chains	56%	DoA; DTEAP; DaLaM
Activity 2.3. Modernization of small-scale irrigation infrastructure	N.A. (this Activity was added after the completion of the CNA)	

Key Capacity Gaps

- Lack of capacity means (finances, staff, transport) and up-to-date knowledge (e.g. on good agricultural practices) constrains DAFO staff in providing high-quality extension services to farmers.
- Private sector actors (e.g. farmers, traders, millers) lack financial capacity and literacy for business plan development, financial analysis, planning and accounting. Consequently, farmers and other value chain actors have limited access to affordable credit.

Capacity status: Output 3 - Sustainable Forest Management

The Division of Village Forestry and NTFP Management within the Department of Forestry supports the development of five-year Village Forest Management Plans (VFMP). The most significant gap in the efforts and process of village-level land use planning is the absence of well-structured cascading data collection and information systems, specifically spatial information systems. The numerous projects that have supported various land management efforts generally have discrete or stand-alone data collection systems. Guidelines exist (Village allocation and forest management plan guidelines (2012), Decree 1476 DOF VFMP (2016), and Decree 1477 DOF VFMP Manual (2016)). However, there is general feedback that, for the purpose of REDD+ and the wide-ranging interventions proposed, there are requirements for some consolidation and simplification of guidelines.

In the ERP, it is noted that roughly 400,000 ha are covered through VFMPs[180]. Each VFMP is registered with the district-level Agriculture and Forestry Offices and can serve as a registered plan of resource rights for the village. But these are largely paper-based, and therefore it is challenging to develop central level understanding of village forest management.

For effective land use planning, it will be necessary to establish a pool of qualified technical specialists to support sub-national offices in undertaking monitoring land use and land use change through GIS and remote sensing. The current challenge is the lack of adequate IT, GIS equipment and software to support the necessary operational capacity. There are a limited number of staff with skills and understanding of the required land use monitoring, including use of remote sensing and geospatial applications.

The frameworks for implementation of VFMPs, SFM, management of NPAs and community-based agroforestry systems are present and well advanced due to the implementation of various projects such as ICBF, SUFORD, CLIPAD, LEAF, etc. This indicates that there is

[180] Provincial survey on land tenure assessment for the ER Programme.

some technical capacity at central and PAFO levels. However, in the absence of external financial support the government is not in a position to sustain such programs. The principal gap that requires strengthening for effective implementation of the proposed GCF interventions is the absence of adequate statutory guidelines and systems to ensure more effective and transparent data management. It is necessary to implement standardized data collection formats, a web-based management information system, and training for staff. Table 56 outlines the Activities proposed under the GCF programme. Activity 2.1.2 is particularly critical, but there are significant capacity gaps.

Table 56: Output 3 Capacity Rating

Output and Activity	**Level of existing capacity against desired capacity**	**Key Organizations Involved**
Output 3: Sustainable Forest Management	57%	
Activity 3.1. Implementation of Village Forest Management	60%	Village Forest & NTFP Management Division
Activity 3.2. Implementation of SFM in production forests	60%	Production Forest Management Unit; Forestry Promotion, Plantation & Reforestation Division
Activity 3.3. National conservation forest management (NPAs)	60%	Protected Areas Management Division

Key Capacity Gaps

- Inadequate staff (levels and skills).
- Inadequate information systems (geospatial systems and IT infrastructure) and statutory guidelines for institutional data sharing, access and custodianship.

Capacity and gap assessment of the FPF

Background

Under the GCF programme, international finance requires various distribution mechanisms across various levels within the Lao PDR, from Government levels through to individual communities. The original concept note for the ERP provisionally identified the FPF as the most suitable existing main fund for receiving, administering and distributing REDD+ results-based payments (GoL 2018). The FPF was set up in 2005, following the Prime Minister's Decree Number 38/PM, dated 21 February 2005, as a body under MAF. The FPF aims "to generate and aggregate financial resources from national and international agencies to be used for implementation of forest development activities, especially management of Protected Forest Areas and National Biodiversity Conservation Forests, plantation establishment, maintenance and regeneration of degraded forests and forest lands, watersheds, environmental protection, wildlife conservation, dissemination of and training in forest development policies, forestry laws, forest management techniques and other policies related to forest and forest resources management" (Article 2 of Decree 38/PM).

During the GCF feasibility study, the Environmental Protection Fund (EPF) has superseded the FPF as potentially the main initial national funding mechanism. A separate assessment has been undertaken on the EPF and has identified the EPF as having relatively strong capacity in relation to financial management administrative capacities, project management, procurement and engaging with ethnic minorities, as well as experience of meeting the requirements of multilateral donors. The EPF was created in 2005 and is currently housed under MoNRE. The EPF was established to strengthen environmental protection, sustainable natural resources management, biodiversity conservation and community development in Lao PDR. The EPF provides financial support by means of non-refundable grants, preferential loans, interest rate subsidies or a combination of these.
Under the GCF programme, the EPF shall only be used to finance regular and recurrent expenses of ministries, departments, agencies and any other public or private organizations and entities receiving financial support from the EPF, where these expenses relate directly to the implementation of Eligible Activities. Unlike the EPF, the FPF is legally mandated to collect and disburse forest sector revenues. Consequently, the Government of Lao PDR plans to channel the ER-P related REDD+ results-based payment through the FPF, acknowledging that capacities are still lacking. In the first instance, the FPF will be used to channel funds purely at community levels to small entities (e.g. businesses and village groups). It is intended that the FPF will eventually take over from the EPF as the main national funding mechanism for the GCF programme (i.e. will assume control of the REDD+ Funding Window), once capacities and systems are in place. However, if it is not possible to utilize the FPF in this manner then the project will continue to channel resources through the EPF REDD+ Window.

Financial sources
The main source of revenue for the FPF has been timber revenue. Prime Ministerial Order No. 1 of 2012 established a timber benefit-sharing regulation for production forest areas. Of all the timber revenues, 70 percent was deposited into the national treasury/budget. The remaining funds were channelled through the FPF, with 12% allocated to local communities and the remaining 18% used for forest management by provincial and district offices. In addition to timber revenue, the FPF receives funds from:

- Royalty fees charged for the use of forests, forestland and forest resources.
- Fees from timber and non-timber forest products (NTFPs) harvested from forests and plantations.
- Obligatory costs for tree planting and non-timber forest product regeneration.
- Fees charged to meet the costs for forest inventory, forestland and forest resources.
- Contributions from Lao citizens and foreigners who run businesses in forestry, non-timber forest products and wildlife.
- Contributions from the state budget, individuals, jurisdictional entities, collectives, local and international social organizations, and international institutions including financial institutions.
- Other revenues, including interest or dividends from investors or shareholders.
- Revenues from profit dividends from selling wood from production forest, as per Prime Minister's Decree No 59/PO.

Projects funded by the FPF
The FPF has in the past financed forest management activities such as forest inventories and planning, biodiversity conservation, forest conservation and wildlife protection, forest and forest resources regeneration for economic and environmental purposes, eradicating shifting cultivation and providing livelihoods for people living in the three forest types. Funding has also been provided for projects in agriculture and forestry land use planning at district level,

as well as forest and forest resource inspection and protection. Eligible institutions have so far only been state agencies at national and sub-national levels. Costs for administration of the FPF are borne by the state budget. Typical project-types that have been funded by the FPF include:

- Conservation and protection of watersheds and protected areas.
- Tree planting and forest rehabilitation for protection of watersheds and environment.
- Conservation and protection of wildlife.
- Forest inventory, forestland and forest resources.
- Sustainable conservation and protection forests, forestland and forest resources.
- Forestry research and extension.
- Dissemination of laws, regulations, and technical matters related to forestry activities.
- Management of the fund.
- Providing incentives and awards to the people who perform outstanding work in conservation and protection, management and forest regeneration.

Gap assessment

Table 57 outlines the views of the Assessment Team on the FPF, using a traffic light system for determining compatibility between the FPF and the capacity requirements for the GCF programme (**GREEN** - Satisfactory; **AMBER – some concerns**; **RED** – major lack of capacity):

Table 57: Gap assessment

Area	Compatibility	Rationale
Objective of the Fund		GCF programme and FPF are compatible with respect to use of the Fund for the management, protection and development of forest resources, and contribute towards national economic and social development
Project Types		FPF provides funding to a range of forestry-based projects, including conservation, planting, forestry protection and inspection, research, extension and dissemination of information.
Revenues for the Fund		FPF allows for contributions from international institutions, including financial institutions. Current revenues are limited due to PMO15, with royalties from NTFPs currently being the main national source. The FPF has limited experience with multilateral funders.
Project Selection and Appraisal		The Fund lacks clear eligibility criteria and the initial process by which projects have been selected for potential funding are unknown, although it appears that other line ministries are involved in recommending projects.
Due Diligence		No due diligence processes on project and applicant background are undertaken prior to the approval process.
Approval Process		There is a long approval process, which must conform with the 5 Year Development Planning cycle. Projects must be submitted prior to the 5 Year Plan and new projects cannot be brought in after the commencement date of the plan [the next plan will run from 2020]. The process involves the FPF office submitting projects and budgets to the Department of Finance at MAF, which then consolidates and submits the financial request to MPI. The National Assembly then approves the entire FPF budget and how much will be allocated to the Fund (not project-by-project). Agreed projects can cross into subsequent 5-year planning cycles. Once

		a project is approved, it must submit a workplan and break down the budget.
Management of Multiple Projects		The FPF has administered a reasonable number of projects previously. However, the number of projects under the ERP and GCF project will be considerably higher than what has been managed to date: the Fund administered funding to 12 projects under the 2011-15 plan and 13 projects under the current 2016-20 plan.
Management of Large Projects		The amount of funding via the GCF programme could potentially be significantly higher than what the FPF has previously administered. The largest individual project that the Fund has previously administered is USD 235,000. Projects are typically much smaller than this value.
Monitoring & Evaluation		The FPF undertakes very limited on-the-ground monitoring. Projects are typically visited by the FPF twice a year, although there are appears to be limited use of any formal monitoring and evaluation process (since the Fund has been established, a formal M&E process has only been undertaken once through MAF's Department of Finance and the Ministry of Finance). It is up to the projects themselves to show that they have spent the money and undertaken the required activities, through the payment process.
Payment Processes		Funds are distributed quarterly. The payment process is convoluted, using a paper-based reporting process. The projects must report expenditures and describe how they have successfully delivered the activities in the previous quarter. They must produce four copies of a report to be sent to PAFO, DoF and FPF; and a copy must be retained for their own records. The process can take three months to complete, which can cause delays to project implementation. In some cases, even though budget has been allocated, actual funds may not be directly available.
Accounting systems		Institutional set-up, technical procedures and systems are non-standardized, while reporting procedures and formats are unclear, paper-based data systems are prone to errors, and there is a lack of mechanisms for data validation. The FPF relies on paper-based systems, with some input into Excel spreadsheets. The FPF would like to improve the system, but this would require a change by the Ministry of Finance.
Banking		When a project is approved, the applicant must open a new bank account under the PAFO. Once quarterly payments are approved, the applicant can obtain money from the account.
Social & Economic Safeguards		There appears to be a lack of mechanisms for addressing public grievances and redresses, withholding of payments, conflicts of interest, gender issues and general ethics. There is no specific safeguard framework in place.
FPF Auditing		The State Auditing Office undertakes an audit of the Fund every two years. This audit checks that funds have been used in accordance with the 5 Year Plan and examines how much money has been spent on each project to date.
Human Resources		The FPF Office originally wanted 10 staff. However, the Ministry of Home Affairs would not allow this number. Previously the FPF was allowed only 7, but now it has only 5 staff, which consists of 2 forestry and 3 finance staff members. These staff levels are not adequate for the amount of work required under the ERP and GCF programme.
Operating Policies & Guidelines		The FPF has a Decree booklet, which provides high-level information on the purpose of the Fund. But there appear to be no clear policies and guidelines on the procedural and operating aspects of the FPF.

FPF understanding of REDD+		Staff have very basic knowledge of REDD+, having previously attended workshops and presentations from the REDD Division.

Conclusion on FPF capacity gaps

While the general purpose of the FPF aligns with the requirements of the ERP and the associated GCF project, there are critical gaps in a number of capacity areas.

With regard to project selection, appraisal and approval, the FPF project selection model is not well documented and lacks adequate guidelines for project grant proponents. There is an inherent assumption that all project proposals conform to Government protocols (as stipulated by the Ministry of Finance as part of the broader planning for the NSEDP). The adequacy and rigor of proposal evaluation appears weak. As an institution, the FPF is a fairly small unit with relatively limited knowledge of REDD+ and limited operational capacity at the local level.

Noting that the FPF has funded approximately 25 projects and has still not developed standard project management systems, this raises significant questions about its ability to handle larger projects. There are broader issues that also affect other institutions, such as inadequate information systems and data management (including advanced financial management systems). FPF accounting is undertaken by the same accounting unit responsible for all DOF accounting. Similarly, the financial and operational capacity for substantive monitoring and evaluation is severely limited. Monitoring and evaluation for previously-funded projects is fairly basic, with limited data collection guidelines; this is one the most significant weaknesses in relation to the required capabilities for the GCF programme.

The FPF has not had any experience with implementing REDD+ social and environmental safeguards; hence, there is a lack of both technical and operational capacity to ensure project proponents adequately address environmental impacts with appropriate mitigation measures. There are no standard operating procedures and guidelines.

Noting the current shortcomings of the FPF, the GCF project design has identified the EPF as the main initial funding mechanism. In the first instance, the FPF will be used to channel funds purely at community level to small entities (e.g. village groups). Capacity building will be applied to FPF to help the Fund overcome identified barriers and support its capacity needs. It is intended that the FPF will eventually take over from the EPF as the main national funding mechanism for the GCF programme (i.e. that the FPF will assume responsibility for the REDD+ Funding Window), once capacities and systems are in place. However, if it is not possible to utilize the FPF is this manner then the project will continue to channel resources through the EPF.

Capacity development plan

Key principles

This capacity development plan is recommended for the ERP and GCF programme to implement in order to develop the required capacity across relevant institutions. A number of strategies and interventions are proposed in this report, which are designed to focus on the critical capacity needs. These proposals seek to improve some existing functional and technical strengths, plus introduce new capacities in order achieve maximum effectiveness. In developing this Capacity Development Strategy and Plan, the following key principles were taken into account:

- ***Acknowledge the distinctiveness of the Lao PDR:*** During the assessment, every international stakeholder interviewed stated that the Lao PDR is very different to other less developed countries in reference to the way that people in Laos approach work, with respect to aspects such as incentives, motivations, accountability and relationships.
- ***The importance of the international requirements of the GCF:*** There are a range of institutional-level procedures that are required by the GCF.

- ***Limitations with regard to change within the Lao PDR:*** It is important to be aware of the inability to change certain aspects within the Lao PDR, either as a result of political or cultural requirements. For example, the requirements for paper-based reporting and authorization is a non-negotiable aspect for working in government; the Five-Year Development Plan is the Lao PDR's key guiding strategic document and work plans and government budgets must work within its planning cycle.
- ***Focus on the practical aspects of what can be achieved:*** Noting all of the previous principles, this development plan focuses on practical aspects that have the potential to be successful in respect to achieving enduring capacity improvements. The assessment has also examined earlier actions undertaken to improve capacity and has taken note of the lessons learned from their implementation, noting the importance of not simply "reinventing the wheel". Some of the capacity issues discussed in this report, such as staff motivation and establishment of IT systems for government agencies, require significant long-term investment. Therefore, achieving enduring capacity development is clearly beyond the ability and remit of the GCF programme . In these capacity areas the focus is on what can be realistic and cost effectively achieved in order to deliver the GCF programme.

Institutional capacity

This assessment has established several conclusions. The first is that there are cases where capacity exists, but institutional incentives and accountability are weak. The second is that it is necessary to mobilize and strengthen existing capacities as well as create new capacity where gaps have been identified. The overall goal of the capacity development plan is to enable the institutions responsible for implementing GCF programme interventions and to do so effectively while creating long-term sustainability.

Communications and Awareness-Raising: Public engagement processes are essential for REDD+. A number of institutions noted the importance of communications and awareness-raising in relation to informing stakeholders of the role of Government agencies, information on projects and programmes, and communities' rights and responsibilities. These are key activities in relation to land use planning and legal enforcement. Some agencies, such as DaLaM, have already produced excellent brochures, which provide information on the work that they undertake. However, many institutions do not have the necessary resources to undertake awareness-raising activities and campaigns. Agencies need to be supported in developing awareness-raising strategies and the associated capacities, including budgets, equipment and skills.

Developing REDD+ knowledge: It is important that REDD+ is not presented in isolation, but is, instead, framed in relation to activities that Government and other agencies are implementing in relation to reducing deforestation and forest degradation, particularly in relation to land use planning, sustainable forest management and improved agricultural productivity. The REDD+ Division has undertaken some good work on building awareness and understanding of REDD+ across central Government levels. However, this needs to be built upon, as many institutions stated they have only basic knowledge of REDD+. Building awareness across Government will help increase individual staff members' confidence in expressing ideas with regards to REDD+ and how it links to other policies and programs across government. Furthermore, it is important for field staff at provincial and district levels to be able to explain to communities the benefits and costs of REDD+, as well as understand their rights and responsibilities in relation to social safeguards. As such, it will be important to build a critical mass of knowledge across Government, with central Government providing the role of training local staff in REDD+.

Monitoring and Evaluation: The ability to assess the effectiveness of projects and programs requires significant improvement across a range of levels, including the development of Information and communications technology skills, improvements to data collection and

analysis systems, guidelines and the introduction of additional equipment, including IT software and hardware.

Training*:* Additional training is necessary to improve the skills across Government in monitoring and evaluation and in information and communications technology. The use of "training of trainers" approaches provides an enduring way to ensure that central Government staff can pass on knowledge and skills to a wide number of staff at local levels.

Information Systems*:* there is increasing amounts of data that institutions need to analyse for reporting purposes and supporting policy processes. A cohesive system is required to collect, collate and manage data and information from across different sectors, which can be utilized by multiple departments and divisions. This should build on the establishment of the previous information-sharing framework established for the forestry sector. Guidelines will be required so that everybody understands their roles and responsibilities, with one Division within the Ministry taking the lead role.

IT Infrastructure: All institutions highlighted the lack of IT infrastructure (especially hardware such as servers). The capacity development approach should complement existing government priorities and offer cost-effective and sustainable solutions. The Government sees Information and Communication Technology (ICT) as a critical driving force of socio-economic development, especially regarding regional and international integration.

The choice of approach in IT infrastructure investment should be driven by future trends. More devices are accessing networks, as employees use smart phones, tablets and handhelds in an increasingly mobile working environment. The Government already has a number of initiatives to promote ICT (National ICT Policy 2015-2025 [draft]; National Broadband Plan 2012-2020; E-Government Master Plan 2013-2020, ICT Vision 2030, Strategy 2025 and Development Plan 2020. One of the main immediate targets for the Government is to expand the fibre optic transmission network, both aerial and underground, by 10,000 km to reach Vientiane Capital and municipal districts of each province across the country as part of the infrastructure system to support e-governance. This means that cloud-based information systems will become the most cost-effective investment, as internal hardware-based systems become increasing expensive to maintain and sustain.

Management of land resource data and information such as VFMPs and other spatial data require long-term well sustained capacity and information systems. In particular, such systems must be future proofed against technology that is likely to become redundant and obsolete. It will be important to ensure that capacity interventions at central and local levels are interlinked and advance simultaneously, otherwise there will be a time lag between central and provincial/district levels' readiness. Improving the data flow from local to central levels is essential.

Training: The following areas of training are required:

- *English Language*: Improvements in the ability to speak and write English is necessary so that staff can communicate and network with international donors and development partners.
- *Financial Management*: The ability to account, budget, administer and report on funds for projects requires improving.
- *Learning from International Staff:* Many prior and existing projects in the Lao PDR utilize international experts, who typically leave when the project is complete. Contracts with international staff should include provisions to spend a proportion of their time upskilling Laos staff.

Table 58 outlines specific capacity interventions within individual departments and divisions:

Table 58: Institutional Capacity Gaps and Capacity Response

Institution	Capacity Gaps	Capacity Response	Priority
Department of Agricultural	Land use plan implementation and extension services	Activity 1.5. Land use planning and improved tenure security, including 1.5.2 (participatory land use planning	Medium

Land Management		and monitoring) and 1.5.3 (enforcement for existing land use plans). This will involve staff training, workshops, equipment, vehicles, and consultants.	
Department of Forestry Inspection	Informing stakeholders of their rights and responsibilities	Activity 1.4. Improved law enforcement and monitoring, including 1.4.1 (strengthening procedures, standards and systems for law enforcement) and 1.4.2 (training for implementation of enhanced law enforcement). This will involve staff training and printing and dissemination of regulations & guidelines.	Medium
	Monitoring and evaluation	Activity 1.4. Improved law enforcement and monitoring, including 1.4.1 (strengthening procedures, standards and systems for law enforcement) and 1.4.2 (training for implementation of enhanced law enforcement). This will involve training, workshops and Investment into equipment in information and communication technology (GPS, communication devices, computers for remote sensing).	High
Department of Technical Extension and Agro-Processing	Staff turnover	Output 1 provides a range of training and activities that may incentivize staff and help reduce turnover.	Low
	Inadequate staff capacity to support field programs and extension services	Activity 2.1. Market solutions for agricultural drivers of deforestation. This will involve training and the provision of training materials, and equipment. Consultants (national & international) to provide additional capacity during the delivery of the programme. On-the-job training to be provided by consultants to permanent staff to ensure that capacity levels are increased and endure beyond the life of the programme.	Medium
Division of Land Use Planning	Land use plan implementation	Activity 1.5. Land use planning and improved tenure security, including 1.5.2 (participatory land use planning and monitoring) and 1.5.3 (enforcement for existing land use plans). This will involve staff training, workshops, equipment, vehicles, and consultants.	Medium
	Monitoring and evaluation	Activity 1.5. Land use planning and improved tenure security, including 1.5.2 (participatory land use planning and monitoring) and 1.5.3 (enforcement for existing land use plans). This will involve staff training, workshops, equipment, vehicles, and consultants.	High
Forest & Forest Resource Development Fund Office	Managing workloads	Activity 1.1. REDD+ Funding Window & Sustainable Finance. Consultants (national & international) to provide additional capacity during the delivery of the programme. On-the-job training to be provided by consultants to permanent staff to ensure that capacity levels are increased and endure beyond the life of the programme.	Medium

	Understanding of REDD+	Activity 4.1. Project management, coordination, monitoring and reporting, including 4.1.3 (knowledge management and communication). This will involve awareness raising campaigns on REDD+.	Low
Forestry Promotion, Plantation & Reforestation Division	Operating policies and guidelines	Activity 1.1. REDD+ Funding Window & Sustainable Finance. This will involve expert input for restructuring and building compliance system & procedures and staff training.	High
	Monitoring and evaluation	Activity 1.1. REDD+ Funding Window & Sustainable Finance. This will involve provision of additional operational budget to manage, monitor and report on fund disbursement, and financing of external audits of FPF.	High
	Understanding of budgets	Activity 1.1. REDD+ Funding Window & Sustainable Finance. This will involve procurement of IT infrastructure to upgrade financial management systems.	High
	Managing workloads	Activity 3.2. Implementation of SFM in production forests. This will involve training and consultants (national & international), who will provide additional capacity during the delivery of the programme. On-the-job training to be provided by consultants to permanent staff to ensure that capacity levels are increased and endure beyond the life of the programme.	Medium
	Extension services	Activity 2.1. Market solutions for agricultural drivers of deforestation. This will involve training and the provision of training materials, and equipment.	Medium
Production Forests Management Division	Monitoring and evaluation	Activity 3.2. Implementation of SFM in production forests. This will involve 3.2.1 (forest inventory and forest management planning in production forests) and 3.2.2. (implementation of management plans and monitoring). This will involve consultants and experts, training and equipment.	Medium
	Communication with international donors	No specific training response recommended at this stage. Capacity should improve through the project and day-to-day interactions with donors.	Low
Protected Areas Management Division	Managing workloads	Activity 3.3. National conservation forest management (NPAs). This will involve training and consultants (national & international), who will provide additional capacity during the delivery of the programme. On-the-job training to be provided by consultants to permanent staff to ensure that capacity levels are increased and endure beyond the life of the programme.	Medium
	Limited and unpredictable budgets	Activity 3.3. National conservation forest management (NPAs), including 3.3.2 (improved law enforcement in NPA	Medium

		biodiversity conservation landscape), and activity 2.1. promotion of private sector investments in community-based agroforestry. This will involve exchange and learning events /study tours with other NPAs on various NPA topics (eco-tourism, management, financing etc), training and public-private dialogue.	
	Monitoring and evaluation	Activity 3.3. National conservation forest management (NPAs), including 3.3.1 (development or revision of Nature Protected Area (NPA) management plans) and activity 3.3.2. improved law enforcement in NPA biodiversity conservation landscape. This will involve experts and consultants, training, equipment and collaboration with universities.	High
REDD+ Division	Managing workloads	All outputs will provide support in the form of consultants (national & international) to provide additional capacity during the delivery of the programme. On-the-job training to be provided by consultants to permanent staff to ensure that capacity levels are increased and endure beyond the life of the programme.	Medium
	Understanding of REDD+ across government institutions	Activity 4.1. Project management, coordination, monitoring and reporting, including 4.1.3 (knowledge management and communication). This will involve awareness raising campaigns on REDD+.	Low
Village Forests & NTFPs Management Division	Monitoring and evaluation	Activity 3.1. Implementation of Village Forest Management, including 3.1.1 (development of Village Forest Management Plans) and 3.1.2 (implementation and monitoring of VFM plans). This will involve experts and consultants, training and equipment.	High
	Capacity to establish village forest management plans throughout the country	Activity 3.1. Implementation of Village Forest Management, including 3.1.1 (development of Village Forest Management Plans). This will involve international consultants, staff support, training, equipment and vehicles.	High

FPF capacity development strategy

The FPF needs to improve its capacity in relation to administration, fund management processes, financial management, project management and implementation of relevant social and environmental safeguard frameworks for projects. To ensure accountability, all processes need to be transparent and easily understood by donors, Government staff and fund recipients.

Project selection, appraisal and approval

While the overall purpose of the Fund is clear, detailed criteria are lacking. Therefore, the development of eligibility and assessment criteria is important. The eligibility criteria will provide clear direction to potential Fund recipients over the types of projects that can be

funded, while ensuring that there is no scope creep within the FPF. The assessment criteria will help the FPF Office in determining the benefits of individual projects in relation to achieving the overall strategic purpose of the Fund and the GCF programme. Criteria should include environmental, social and economic components, as well as the ability of Fund recipients to deliver projects. These criteria will help rank different potential projects, which will be important in situations when the value of project applications is higher than that available from FPF funds. This assessment will ensure transparency in decision-making, avoiding the question of bias when certain projects are selected over others. The use of an independent assessment panel should also be considered.

When a project is selected, further due diligence should be undertaken, although it is acknowledged that for small projects this stage does not need to be excessive. However, it will be important to assess the ability of Fund recipients to deliver the project; how the project will achieve its goals; how the effectiveness of the project will be monitored, evaluated and reported; and how the project will continue and become self-sustaining after the funding ends.

Project Management: The FPF Office has managed a number of projects to date. However, these have been relatively small in number compared to what may come through the GCF project, and they have been predominantly relatively low value. Further support is required for the Office to oversee a portfolio of projects. There are currently only five permanent staff, spread across the Office's two sections of planning and finances. Initially, the Office requested ten staff, although the Ministry of Home Affairs only allowed them seven staff.

At this stage, it is difficult to determine exactly how many staff would be required for ERP and GCF project implementation, although clearly additional staff will be required due to the increase in the number and size of projects, as well as for taking on the additional requirements detailed in this Development Strategy. Furthermore, staff would benefit from clear operating guidelines and processes. This would help to manage the processes and support recipients in the delivery of projects. Every project should have a single clear point of contact within the FPF Office. A further set of guidelines for Fund recipients would also be desirable, which outline the application process as well as details on how to report on the projects' progress, apply for payments and project closure.

Monitoring and Reporting: Every project should have at least a basic project plan that includes objectives and targets, which can be monitored and reported on. This should also include a section on risk management. The FPF Office will play an important role in supporting Fund recipients with developing management plans. This may require additional staff training and operating manuals, as well as templates to help with management planning. The FPF should produce an annual report, which outlines progress made across the portfolio of projects and payments made. Currently, projects are visited twice a year by the FPF Office, which appears to be adequate, although for larger projects more regular inspections may be required. A formal process should be established for undertaking site visits, which verifies the progress of the projects and ensures that funds have not been misappropriated. A process will be required for addressing at-risk projects.

Payment Processes and Accounting: The current payment process involves a paper-based reporting process. Although it is acknowledged that the government requires this process, there are some areas that require improvement. Accurate and up-to-date financial statements are required so that the payments can be tracked and the entire Fund can be monitored. This will require an accounting framework. The payment process also needs to be improved with respect to the speed at which payments are made. Currently, it may take up to three months to make payments, which results in projects being put on hold and incurring significant delays.

Social and Environmental Safeguards System: Safeguards are a requirement to qualify for REDD+ payments. Protocols and standards must be in place to ensure that projects minimize social conflict and respect the rights of local communities. Social and environmental safeguards are required in order to allow for redress and grievances and so that ethical considerations are undertaken. As such, the FPF Office requires an internal code of ethics, a conflicts of interest register, a gender equality policy, and grievance and "whistle blower"

processes. Following their development, these policies and standards must be communicated to stakeholders.