



Climate Smart Agriculture alternatives for upland production systems in Lao PDR

Part I: Project Information

GEF ID

10187

Project Type

FSP

Type of Trust Fund

LDCF

CBIT/NGI

CBIT **No**

NGI **No**

Project Title

Climate Smart Agriculture alternatives for upland production systems in Lao PDR

Countries

Lao PDR

Agency(ies)

FAO

Other Executing Partner(s)

Ministry of Agriculture and Forestry (MAF)

Executing Partner Type

Government

GEF Focal Area

Climate Change

Taxonomy

Climate Change Adaptation, Climate Change, Focal Areas, Climate information, Private sector, Community-based adaptation, Mainstreaming adaptation, Least Developed Countries, Livelihoods, Innovation, Climate

resilience, Adaptation Tech Transfer, Ecosystem-based Adaptation, Influencing models, Stakeholders, Gender Equality, Capacity, Knowledge and Research

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 1

Climate Change Adaptation

Climate Change Adaptation 2

Submission Date

4/5/2019

Expected Implementation Start

7/1/2021

Expected Completion Date

6/30/2026

Duration

60In Months

Agency Fee(\$)

332,782.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CCA-1	Outcome 1.1: Technologies and innovative solutions piloted or deployed to reduce climate-related risks and/ or enhance resilience Outcome 1.2: Innovative financial instruments and investment models enabled or introduced to enhance climate resilience	LDC F	2,452,078.00	8,500,000.00
CCA-2	Outcome 2.1: Strengthened cross-sectoral mechanisms to mainstream climate adaptation and resilience	LDC F	1,050,890.00	6,500,000.00
Total Project Cost(\$)			3,502,968.00	15,000,000.00

B. Project description summary

Project Objective

To enhance resilience of vulnerable upland communities to climate change impacts through climate-smart agricultural practices in upland production systems.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 1: Enabling environment to promote and incentivize resilient and sustainable rural landscapes in Lao PDR	Technical Assistance	1.1. Strengthened capacity to mainstream and access climate finance for resilient and sustainable rural landscapes in Lao PDR.	1.1.1. Strengthened inter-sectoral planning and investment-prioritization processes at national and sub-national levels for resilience and sustainable rural landscapes. 1.1.2. Innovative financial instruments, investment models, and institutional arrangements developed and enabled to mobilize climate finance for resilient and sustainable rural landscapes.	LDC F	226,495.00	2,250,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 2: Resilient and sustainable land-use planning and value-chain networks in the northern uplands	Investment	<p>2.1. Integrated, landscape-level planning strengthened using climate-smart practices for resilient and sustainable landscapes in the northern uplands.</p> <p>2.2. Innovative and resilient agricultural value-chain networks and financing options established to adopt and scale-up climate-smart practices.</p>	<p>2.1.1. Participatory climate risk and vulnerability assessments conducted for upland livelihoods, incorporating vulnerable ecosystems and agro-ecological suitability at landscape level.</p> <p>2.1.2. Capacities of local institutions and governmental offices at district levels to identify, incentivize, promote, and disseminate climate-smart land-use approaches and practices and nature-based solutions for resilient and sustainable landscapes strengthened.</p> <p>2.1.3. Participatory, resilient, and sustainable land-use and investment plans incorporating innovative, evidence-</p>	LDC F	1,713,543.00	6,350,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 3: Climate-smart technologies and innovations deployed in two provinces of the northern uplands	Investment	3.1. Climate-smart livelihood practices scaled-up at landscape level to support resilient and sustainable rural landscapes that improve food security and nutrition.	<p>3.1.1. Climate-smart land-use approaches and practices and nature-based solutions for resilient and sustainable landscapes deployed.</p> <p>3.1.2. Investments for resilient and sustainable value chains to encourage adoption and up-scaling of climate-smart practices deployed.</p>	LDC F	968,624.00	3,250,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 4: Monitoring and evaluation, project communication, and lesson-learning	Technical Assistance	4.1. Project monitored and evaluated, information disseminated, and lessons from project implementation, progress monitoring, review, and evaluations codified and shared.	4.1.1. A gender-sensitive monitoring & evaluation system developed, strengthening decision-making for CCA in the agricultural and NRM sectors. 4.1.2. Communication and knowledge-management strategy, including outreach programs and local knowledge-sharing and learning networks on climate adaptation and resilience, developed and implemented.	LDCF	428,098.00	2,400,000.00
Sub Total (\$)					3,336,760.00	14,250,000.00
Project Management Cost (PMC)						
LDCF			166,208.00		750,000.00	
Sub Total(\$)			166,208.00		750,000.00	

Project Management Cost (PMC)

Total Project Cost(\$)	3,502,968.00	15,000,000.00
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C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Donor Agency	IFAD	In-kind	Recurrent expenditures	1,000,000.00
Recipient Country Government	Ministry of Agriculture and Forestry	Public Investment	Investment mobilized	14,000,000.00
Total Co-Financing(\$)				15,000,000.00

Describe how any "Investment Mobilized" was identified

For descriptions of mobilized investments, please see descriptions in Section 1.a.4: Incremental/ Additional Cost Reasoning.

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)
FAO	LDC F	Lao PDR	Climate Change	NA	3,502,968	332,782
Total Grant Resources(\$)					3,502,968.00	332,782.00

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)
PPG Required **false**

PPG Amount (\$)
150,000

PPG Agency Fee (\$)
14,250

Agency	Trust Fund	Country	Focal Area	Programmin g of Funds	Amount(\$)	Fee(\$)
FAO	LDC F	Lao PDR	Climat e Change	NA	150,000	14,250
Total Project Costs(\$)					150,000.00	14,250.00

Core Indicators

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

Please refer to the CCA indicator framework uploaded in the roadmap section

Part II. Project Justification

1a. Project Description

1.a.1. Adaptation challenges, root problems, and barriers.

Context

Lao PDR is a land-locked, mostly mountainous country comprising three main geographic regions: (i) a northern upland area with an elevation $>1,000$ m above mean sea level (AMSL), a relatively dry temperate and sub-tropical climate, and annual rainfall typically between 1,500 and 2,000 mm; (ii) a central mountainous area that ranges in altitude from 500 to 1,000 m AMSL (though some mountain peaks reach $>2,000$ m) with a tropical monsoonal climate typically receiving 2,500 ? 3,500 mm precipitation per year; and (iii) the tropical lowlands and floodplains along the Mekong River and its main tributaries, including the plains of Vientiane, Borikhamxay, Khammouane, Savannakhet, Champasack, Saravane, and Attapeu Provinces.

Box 1: Defining Investment

This project document refers extensively to different forms of investments. For the purposes of this document, an *investment* is a net reduction in short-term value (e.g., money, asset liquidity, capital productivity, opportunity costs) with the aim of obtaining future returns (not necessarily financial). In other words, it is a near-term cost or forbearance for the sake of future benefits.[1]

These investments are made by many types of stakeholders, including the Government of Lao PDR, international organizations, civil society, businesses, and individual land users. The contexts and criteria of these investments differ significantly between some stakeholders?e.g., in terms of their types of risk tolerances, investable assets, discount rates, valuations of different outcomes, etc. Therefore, the project?s design emphasizes an inclusive, participatory approach to help ensure that the various stakeholders are best able to make informed investments that align with their respective priorities.

National Climatic Trends

Minimum, mean, and maximum temperatures increased in Lao PDR throughout the 20th century, particularly in the 1990s. Trends differ by region, but local maximum temperatures rose four to five times more than did minimum and mean temperatures ($+0.5$ to 4.5 $^{\circ}\text{C}$ vs. $+0.1$ to 1.0 $^{\circ}\text{C}$).

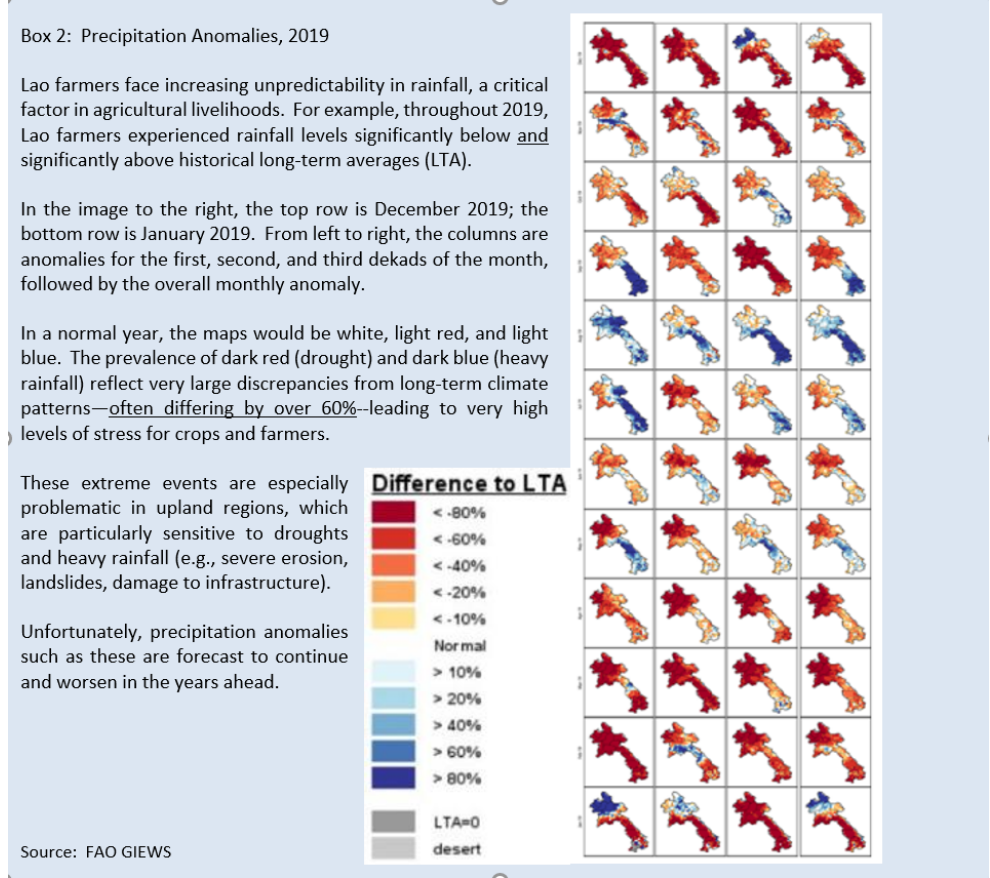
National precipitation trends are difficult to discern in Lao PDR, given high inter-year and regional variability. However, during the 20th century, the rainy season (typically late-April to October) shifted later, with heavier rainfall events later ($+4$ to 20 mm in October). Additionally, the onset of the rainy season has become more hesitant, with a slight increase in April followed by reduced rainfall in May (mean: -4 to -50 mm), leading to false-starts to the planting season, particularly in northern provinces.

These trends are generally expected to continue. Compared to a 1982 ? 2002 baseline, minimum and mean temperatures are predicted to increase ~ 2 $^{\circ}\text{C}$ and the maximum temperature is predicted to increase ~ 5 $^{\circ}\text{C}$ by 2050.

Of even greater concern, forecasts suggest that the rainy season will continue to bifurcate, with heavier rainfall in April, reduced rainfall in May, and increasing intensity June through October. This will pose a significant hazard to rain-fed agriculture.

Although trends in the frequencies of tropical storms, which are heavily influenced by the El Niño-Southern Oscillation, are difficult to discern and predict, there is a general trend toward an increased number and intensity of storms. This trend is expected to continue.

Additionally, forecasts suggest continued trends of increased variability. That is, farmers face not only shifts in means (e.g., higher mean temperatures), but also increases in the frequencies of extremes (e.g., increased occurrences of abnormally high temperatures) and increases in the spatial variability of events (e.g., localized, higher-intensity storms rather than widespread, lower-intensity rainfall). Box 2 discusses recent precipitation anomalies.



Nationally, the highest-priority sectors for technological interventions for climate change adaptation are agriculture, water, and forestry. (See Table 1.)

Table 1: Priority Sectors for Technological Interventions for Climate Change Adaptation[3]¹

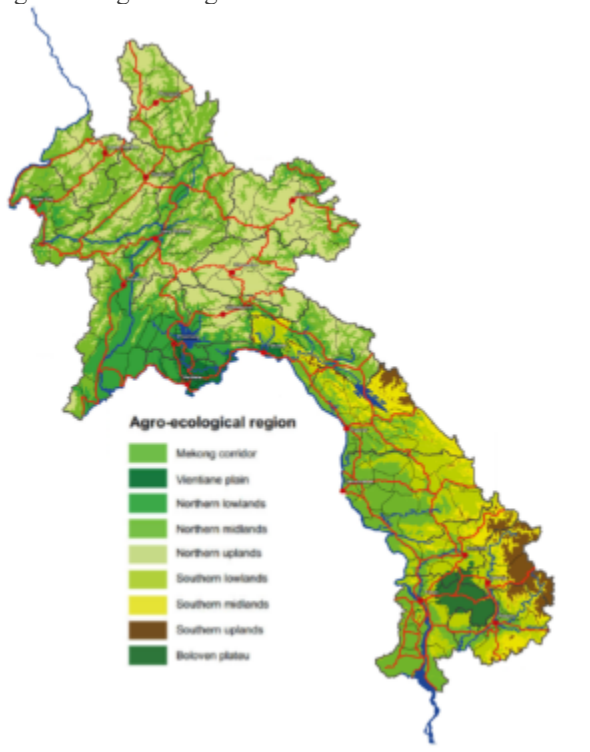
Sector	Priority	Criteria							
		Total	Vulnerability	Livelihood Benefits	Social Benefits	Employment	Environment	Contribution to GDP	Baselines

Agriculture	1	33	5	5	5	5	3	5	5
Water	1	33	5	5	5	4	5	5	4
Forestry	2	29	3	4	5	4	5	5	3
Health	3	26	4	4	5	3	3	3	4
Energy	4	25	4	3	4	4	3	4	3
Industry	5	21	3	3	3	4	2	4	2

Climate Change in the Northern Uplands

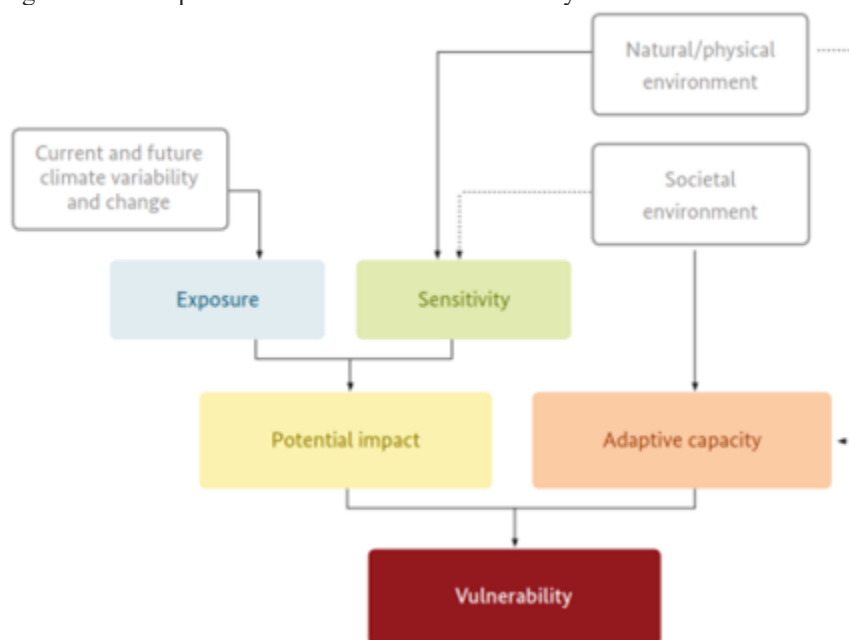
The government of Lao PDR (GoL) has decided to focus this project's sub-national activities in two provinces of the northern uplands^{[4]²}: Luang Prabang and Houaphan. Communities in the northern uplands face a particularly acute set of climate-related vulnerabilities, discussed below. As depicted in the maps in Figure 3, the northern uplands cover most of Houaphan and the eastern portion of Luang Prabang, and are notable for their rough terrain and steep slopes.

Project's Targeted Provinces



As depicted in Figure 2, MoNRE's Department of Climate Change (DCC) conceptualizes climate vulnerability as a function of (i) adaptive capacities and (ii) potential impacts, which is in turn a function of exposure and sensitivity.[5]³ *Exposure* is the probability of experiencing a given climatic hazard (e.g., low rainfall, high temperatures), whereas *sensitivity* is the degree to which such hazards result in harms (in terms of extent, severity, or duration).

Figure 2: Conceptual Model of Climate Vulnerability



Therefore, the climate-related vulnerabilities and resilience of communities in the project's targeted areas are discussed below in terms of exposure, sensitivity, and adaptive capacities.

Lao PDR classifies villages according to vulnerability scores based on a Sensitivity and Exposure Index (SEI) and an Adaptive Capacity Index (ACI). Provinces' vulnerabilities are then indicated by the prevalence of villages with high sensitivities and low adaptive capacities. According to the NC2, Luang Prabang is one of five provinces with the highest risk categorization for sensitivity and exposure to climate change, having 75 ? 100% of villages with high SEI scores. Houaphan is one of five provinces with the second-highest risk categorization for sensitivity and exposure (50 ? 75% of villages with high sensitivity and exposure). Luang Prabang and Houaphan are also in the highest risk categorization for adaptive capacities (75 ? 100% of villages with very low ACI scores). Additionally, Luang Prabang has the highest number of villages categorized as having very high vulnerability (646), whereas Houaphan has the fifth-highest (400).

Table 2: Number of Villages Categorized as Very High Vulnerability, by Province

Province	Villages with Very High Climate Vulnerability
Luang Prabang	646
Phongsaly	541
Savannakhet	502
Oudomxay	483
Houaphan	400
Xieng Khuang	281
Luang Namtha	277

Province	Villages with Very High Climate Vulnerability
Saravane	276
Xayabury	261
Bokeo	214
Vientiane	192
Sekong	186
Champasak	178
Khammuane	154
Attapeu	120
Bonkhamxay	108
Vientiane Capital	7

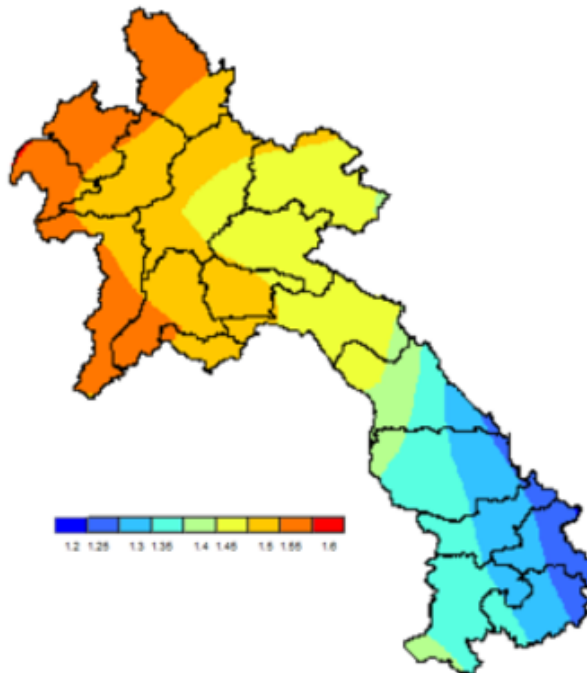
Exposure

Communities in the northern uplands generally face greater degrees of the national climatic trends (discussed above).

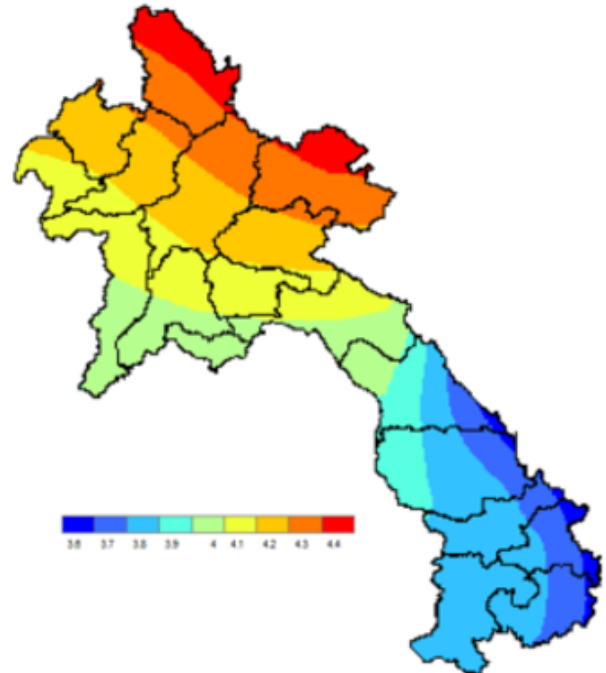
Temperature. Projected temperature changes are expected to be especially pronounced in the northern uplands, particularly with regard to minimum temperatures (Figure 3).

Figure 3: Predicted Changes in Minimum Temperature (°C) during 2030s (left) and 2080s (right) Relative to 1990s Baseline under RCP8.5 Scenario

2030s vs. 1990s



2080s vs. 1990s



Source: MoNRE-DCC (2016)

Precipitation. Although temperature trends will likely have important implications for people of the northern uplands, the most consequential trends pertain to precipitation. As noted above, **the rainy season is predicted to bifurcate** (wetter April, drier May, then increasing rainfall through October), such that the main rainy season will have a later onset, shorter duration, and more intense

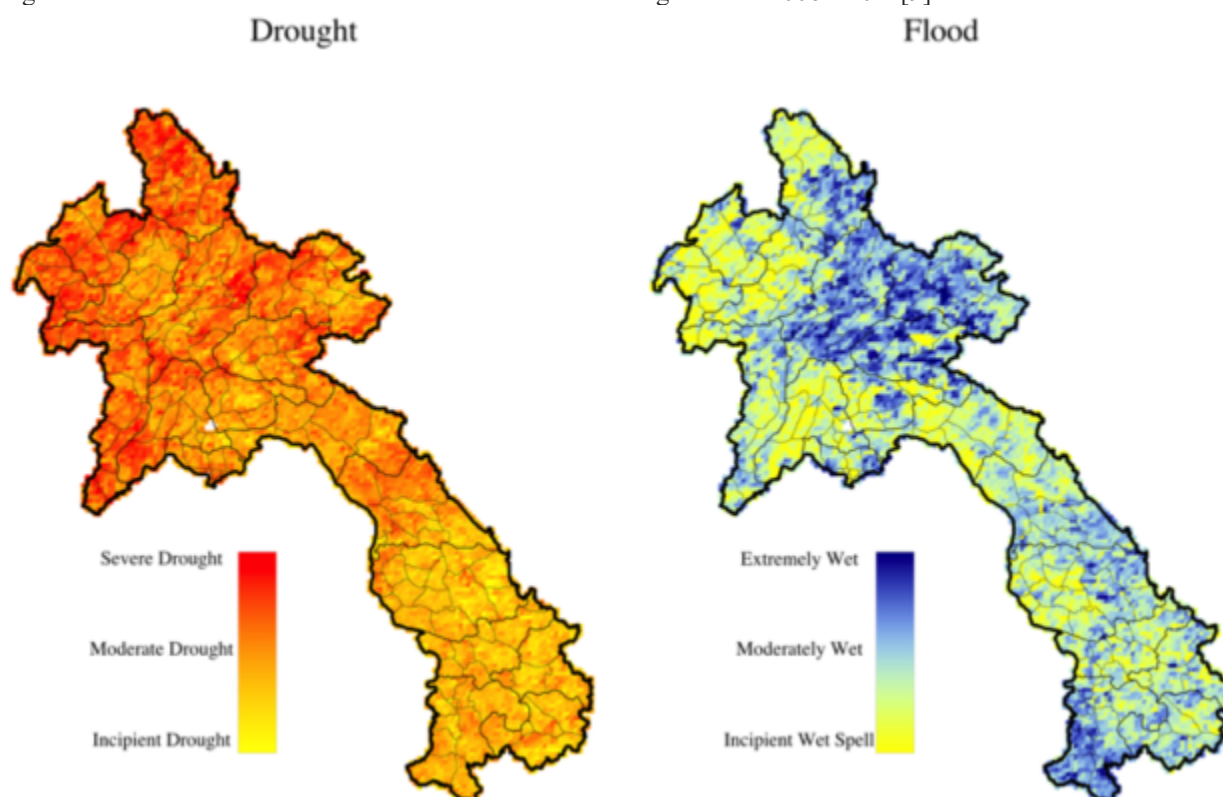
rainfall events.^[6]⁴ This trend is already resulting in significant harms to farmers. The later onset of the sustained rainy season means that farmers following traditional cropping calendars often plant too soon, such that sown plots do not receive sufficient rainfall to survive. This trend is increasingly exacerbated by false starts to the rainy season (increased rainfall in April followed by a drier May). Therefore, even if farmers wait for the first rain to sow, the actual rainy season does not begin for a few more weeks, such that the sown seeds fail to germinate or die shortly after sprouting. Farmers following traditional cropping calendars might sow prior to the first rain, but a false start to the rainy season is sufficient merely to germinate the seeds, and the sprouts then die from insufficient rainfall.

Ideally, the rainy season would have a predictable start date and duration, and rainfall events would have a frequency and volumes to ensure that plots receive frequent, low-intensity precipitation and plots never receive enough rainfall to exceed infiltration capacities of soils (i.e., resulting in sheet flows). However, the forecast trend will entail less predictability and more heavy-rainfall events, resulting in **crop damage, erosion, reduced soil fertility, landslides, and down-slope flooding**.

When precipitation exceeds the soil's infiltration rate—which is especially low in upland areas, due to slope—less water is absorbed into the soil, such that even if total annual rainfall increases, soil moisture may decrease. Climatic trends indicate an increasing frequency of high-intensity rainfall events and a decreasing frequency of low-intensity rainfall events.^[7]⁵ Therefore, the later onset of the sustained rainy season and increased proportion of precipitation via heavy rainfall events mean that the region will likely experience **more drought conditions both between and within rainy seasons**.

In the northern uplands, drought is a more widespread climatic hazard than are floods and landslides, though all three are common and some areas are at substantial risk of all three. In Luang Prabang, the northeast is slightly more prone to extreme droughts and the central region (running from northeast to southwest) is slightly more prone to flooding. In Houaphan, the western and far eastern regions are more prone to drought, and the western and central regions are more prone to floods. (See Figures 4.)

Figure 4: Most Extreme Weather Conditions in Rice-Growing Seasons 2006 ? 2012[9]⁷



Rural communities generally recognize these trends, though not always as part of an overall phenomenon of climate change. During community consultations and site visits during the PPG phase community members conveyed the following erceptions of trends in exposure to climatic threats. Seasonal weather is less predictable than in the past, such that following traditional cropping calendars (e.g., planting date) more frequently results in crop losses and declining yields. The monsoon is shifting to later onset, shorter duration, and more intense rainfall. Compared to the past, drought periods last longer and rainfall is more intense and concentrated, leading to flooding. Hail and pest outbreaks (e.g., brown hopper) are more frequent. Increased summer temperatures lead to lower suitability of traditional crops, changing pests, and some reduced labor productivity. These reported local observations comport with the exposures listed above and suggest that local communities are receptive to viewing many local priorities in terms of climate adaptation.

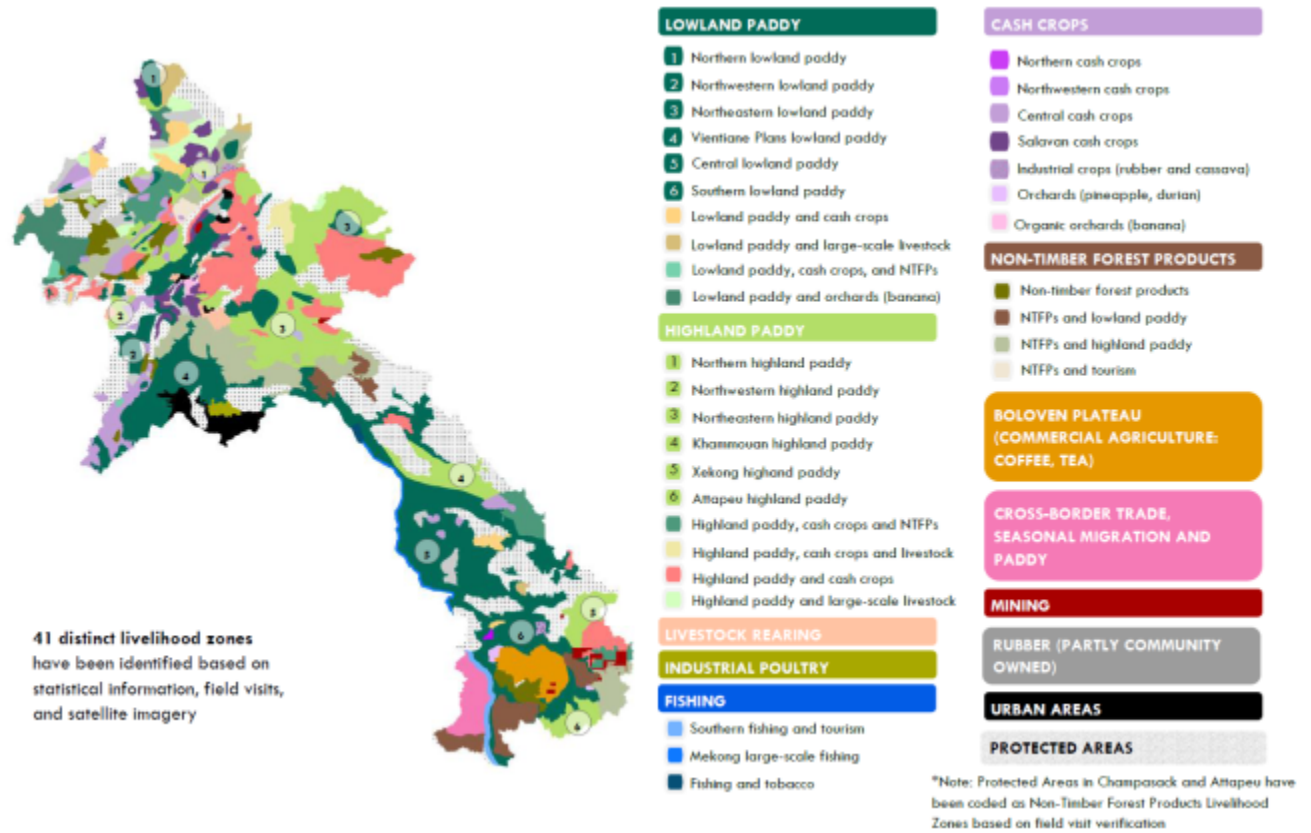
Sensitivity

Farming communities in the northern uplands are especially sensitive to these climatic trends for several reasons, including (i) high reliance on agriculture, (ii) low crop diversification (particularly for low-value commodity crops), (iii) severe topography, (iv) fragile infrastructure, and (v) poor land-management practices.

First, **these communities rely very heavily on agriculture for sustenance and livelihoods** (yields and wage labor). Thus, climatic shocks typically directly result in harms to livelihoods and well-being (e.g., reduced production income, reduced wage income, food insecurity, reduced labor productivity).

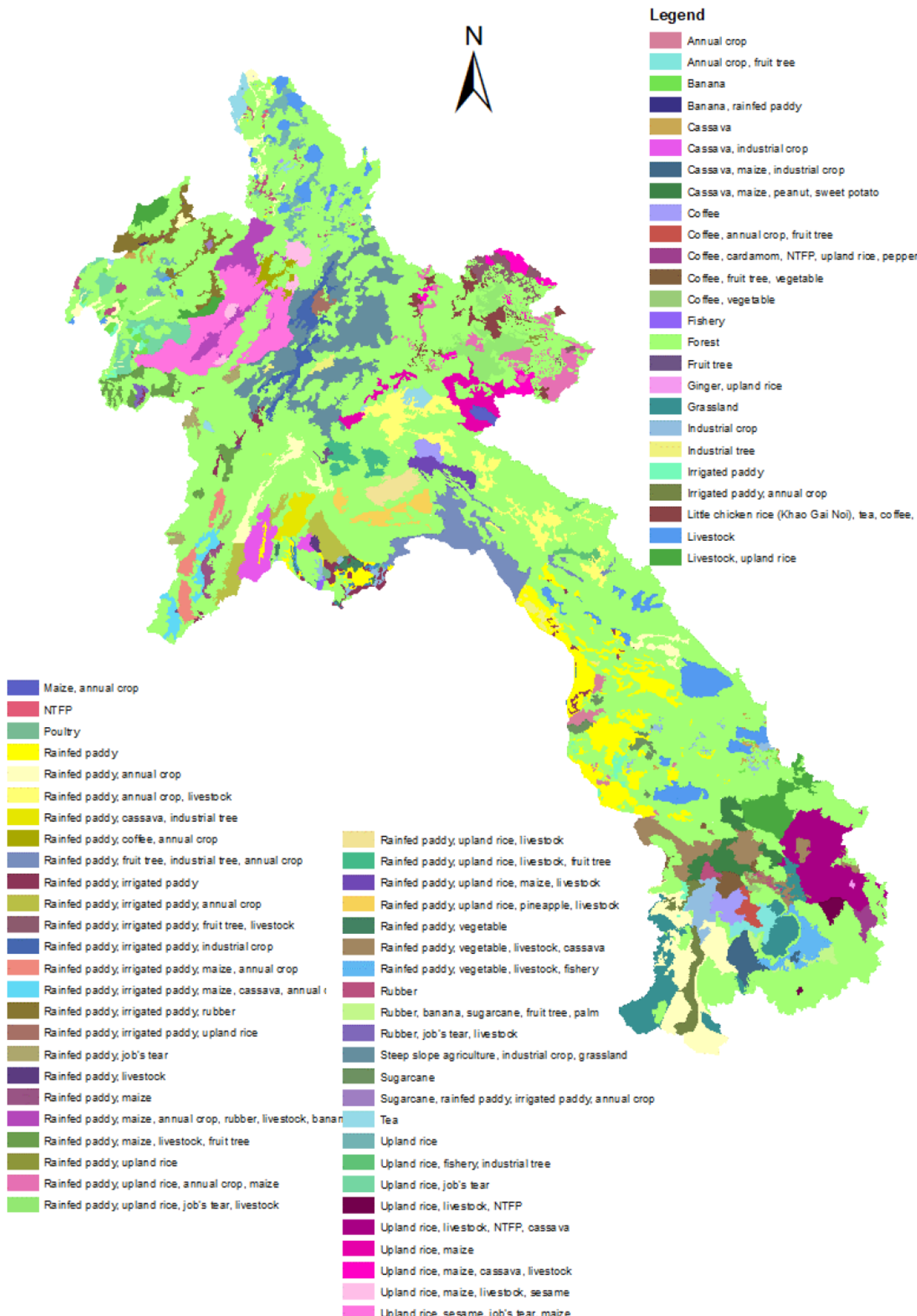
MoNRE's Consolidated Livelihood Exercise for Analyzing Resilience (CLEAR, 2016)[\[10\]](#)⁸ identified 41 livelihood zones across Lao PDR. In the northern uplands, livelihoods predominantly rely on highland paddy (upland rain-fed rice) and cash crops, sometimes also incorporating livestock or NTFPs. Figures 5 and 6 depict recent assessments of the distributions of those livelihood zones.

Figure 5: Livelihood Zones (CLEAR)



Source: MoNRE-CLEAR (2016)

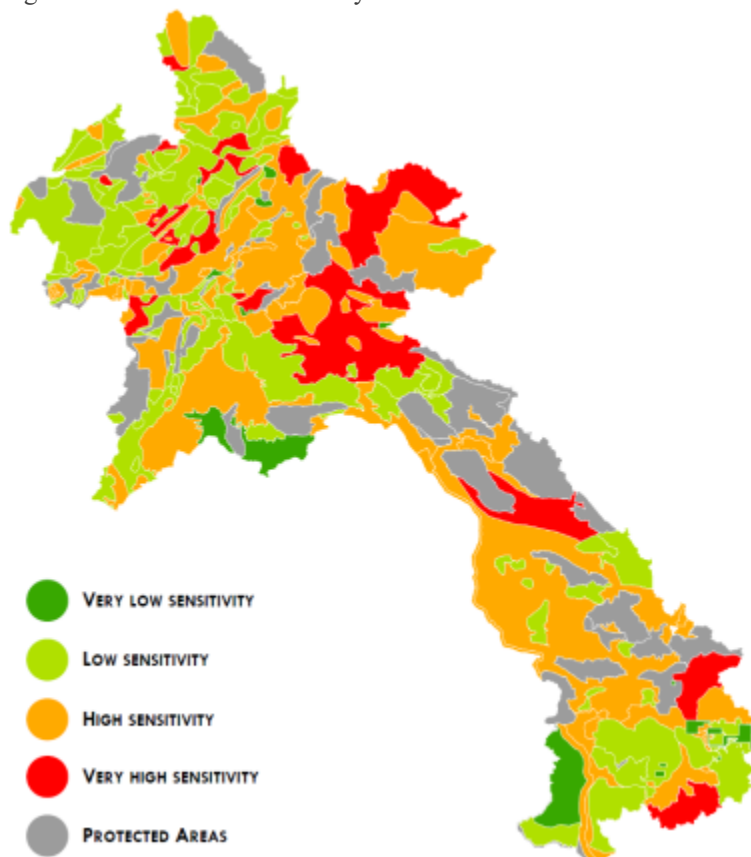
Figure 6: Livelihood Zones (SAMIS De-Risk)



Source: DALAM-SAMIS De-Risk

High dependency on agriculture leads to high climate sensitivity. Figure 10 depicts climate sensitivities by livelihood zones (CLEAR model). In Luang Prabang, climate sensitivity is greater in the eastern districts (corresponding to the uplands) than elsewhere. Houaphan has generally high climate sensitivity, with the exception of a small area on the border of Viengxay and Xiamtay.

Figure 7: Climate Sensitivities by Livelihood Zone



Source: MAF-CLEAR (2016)

Second, in addition to low livelihood diversification, most communities in the northern uplands have **very low levels of crop diversification**. This is especially problematic given that most farmers grow low-value commodity crops (e.g., upland rice^{[11]⁹} in Luang Prabang and dent corn in Houaphan), which means that (i) they compete against regional and global producers in far more conducive contexts (e.g., topographic suitability for mechanized production and transport) and (ii) they are vulnerable to global price fluctuations. For example, Image 1 contrasts the planting densities and vigor of irrigated lowland and rain-fed upland rice (photos taken in the same week)^{[12]¹⁰}. Upland communities often benefit from diversifying into crops that provide greater climatic resilience (e.g., perennials), higher economic yields, lower labor costs, lower sensitivity to price fluctuations in international markets, etc.

Image 1: Planting Densities of Irrigated Lowland Rice and Rain-fed Upland Rice

Irrigated Lowland Rice



Rain-fed Upland Rice



Additionally, trends toward increased temperatures are likely to affect most farmers in the northern uplands, because most grow rice as a subsistence staple crop (particularly in Luang Prabang) and rice yields are highly sensitive to temperature changes. For example, an increase of 1°C in average overnight low temperatures can result in a 30% reduction in rice yields (Lipper *et al.*, 2017). Figure 5 shows predicted changes in low temperatures in the 2030s and 2080s under RCP8.5.

Third, the **severe topography** of the northern uplands results in numerous sensitivities. Steep slopes reduce precipitation infiltration and increase water flows both above and below ground, meaning that soils do not retain moisture well, particularly when exposed. Thus, the uplands are quite sensitive to droughts. Steep slopes also facilitate sheet flow, resulting in crop damage, erosion, soil degradation, landslides, and down-slope flooding. The severe topography also increases labor costs, limits mechanization, and limits market access.

Fourth, **fragile rural infrastructure** is sensitive to climatic hazards, particularly regarding transportation and water supplies. The already limited **transportation** infrastructure is easily debilitated by heavy rainfall events (e.g., washed-out river crossings, washed out or impassable roads), cutting off producers from supplies and markets. Roads service nearly all villages, but not most farms, and road access is highly seasonal. (See Figure 8.) Poor roads—in terms of both quality and extent—significantly constrain economic development of the agricultural sector on which most rural livelihoods rely in the northern uplands. Roads are generally poorly constructed (e.g., inappropriate grading, materials, compaction, water management) and infrequently maintained. The region's topography (curves and slopes) significantly complicates road construction and maintenance, and conduces to severe hydrological damage. Rural transportation speeds are quite slow on all types of roads (see Table 3).

Figure 8: Seasonal Road Accessibility

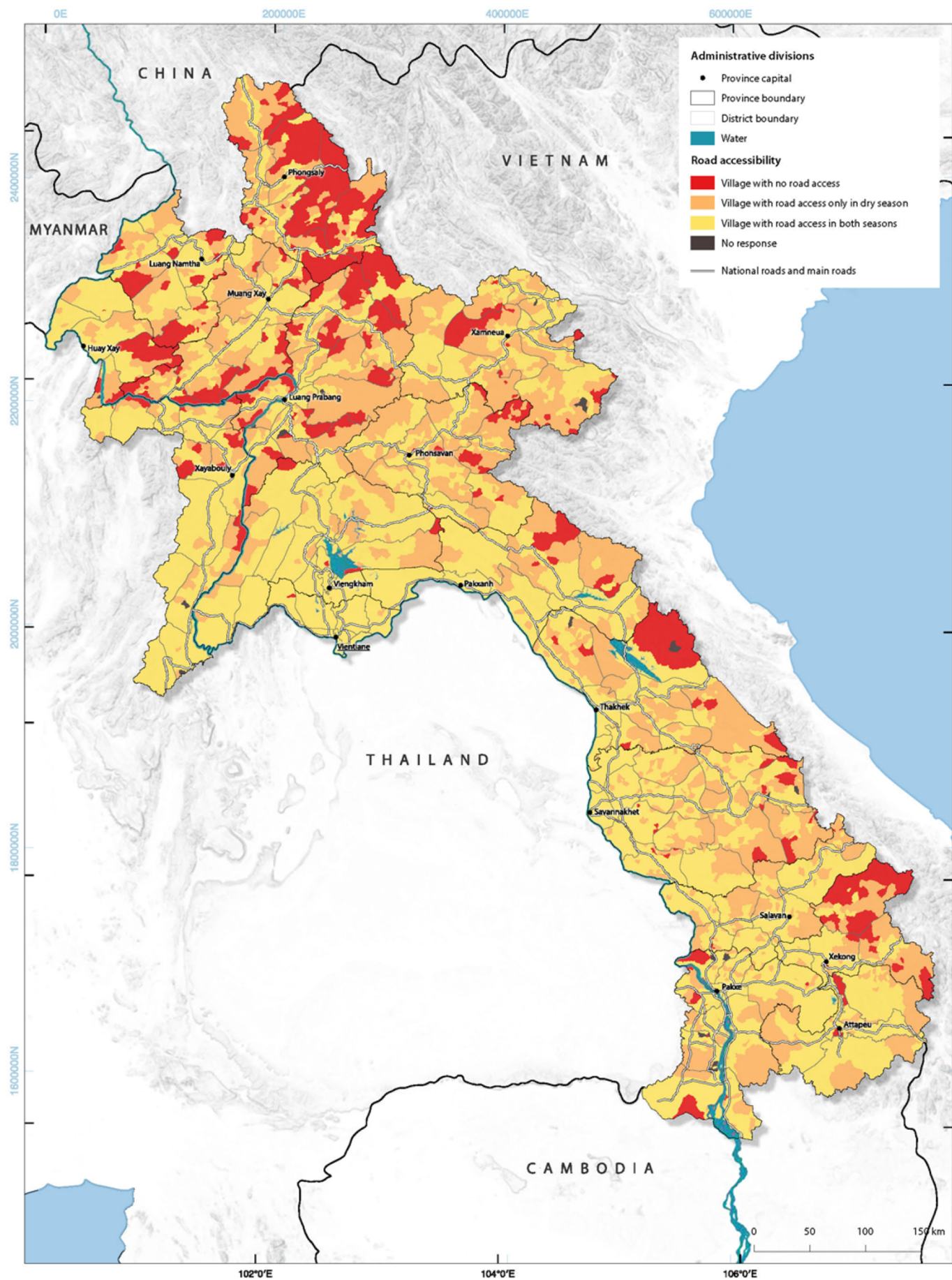


Table 3: Estimated Typical Rural Road Speeds (Dry Season)

Level	Surface (typical)	Typical Travel Speed (Dry Season; km/h)
Highway	Paved	60 ? 70
Primary	Paved	50
Secondary	Improved, gravel	25 ? 30
Tertiary	Graded dirt	10 ? 15

Source: Lao Agricultural Atlas, 2018

Many areas are entirely inaccessible during the rainy season. (See Image 2.) Poor road quality significantly increases transportation costs, reduces the frequency of farm-to-market transportation, and reduces the sizes of available transport. Poor transportation infrastructure also means that farmers must coordinate in order to arrange sufficient quantity to justify the high transport cost. That means farmers flood the local market with supply, depressing the price at the same time that they are essentially price-takers. This transportation issue is also a disincentive to diversification, because an independent grower would need to cover transportation costs independently. Although improvements to transportation infrastructure are expensive and time-consuming, as discussed in the alternative scenario, several technologies and practices can reduce rural communities' sensitivities to infrastructure fragility (e.g., products and processing for longer shelf-life, improved timing of harvests and scheduling of transportation, higher-value crops, etc.).

Likewise, climatic trends are **straining water infrastructure** in the northern uplands. Water levels are more variable in creeks and rivers, both seasonally and in terms of specific weather events. Water-related infrastructure is also significantly affected by land-management practices within the watersheds (e.g., increased land clearing leads to increased run-off and less moderated release of water). Decreases in water levels lead villages to move headworks and intakes further away for more reliable sources. The further a source is located from a village, the more awkward the conflicts with villages close to the water source that might pollute it. Additionally, the increased frequency and magnitude of flooding lead to more frequent and severe damage to headworks. For example, according to Houaphan's Provincial Irrigation Office, in 2018 and 2019, more than 200 irrigation schemes were damaged or destroyed by floods, landslides, and other precipitation-related events. Increasingly intense rainfall events often destroy headworks. In upland areas, small-scale irrigation systems for market gardens and community gardens are likewise affected.

Fifth, the topographic vulnerabilities are exacerbated by **poor land-management practices**, which magnify vulnerabilities to current and predicted climatic trends. The great majority of upland farmers grow annual crops (especially upland rice and maize) on steep slopes with bare soil (no mulching, inter-cropping, or other ground cover). This leads to severe erosion, particularly when practiced without crop rotations or regenerative fallow periods. In such production systems, erosion increases exponentially with slope gradient. For example, for upland production of rice and Job's tears, a 70% slope (35°) yields annual soil loss of 8 t/ha.[15]¹¹

Image 3: Upland Rice[16]



Climate sensitivities are particularly acute in the northern uplands, given the lack of irrigation, which is impractical in the upland topography. In Luang Prabang, the lack of irrigation is especially notable along the eastern edge of the province. In Houphang, irrigation is notably rare in the northwest, south, and southeast.

Additionally, these systems are highly sensitive to climate change because **profitability is very low**, particularly in rain-fed production, which is practiced by more than 80% of rice-growing households. Low yields, high labor costs,[17]¹² and small land holdings mean that even relatively small climatic shocks can have significant consequences.[18]¹³

Fifth, these communities have **very limited resources with which to absorb shocks**. They have weak *economic* shock absorbers due to high levels of poverty, high household indebtedness (along with high costs of credit), and limited household assets, including limited access to productive land. Climatic shocks such as droughts and floods typically have a direct and significant impact on household incomes and food security, particularly for poor households.

Economic shock absorption is also weak due to limited and fragile infrastructure (physical capital). As discussed above, farm-to-market roads are easily washed out by deluges, thereby limiting or delaying accessibility for labor, machinery, technical assistance, transport of produce, etc. and adding to overall production costs. Limited private-sector investment continues to result in fragmented value chains, resulting in information asymmetries, inefficient matching of supplies and demands, local monopolies and monopsonies, etc. Likewise, limited physical capital in these value chains continues to result in limited facilities for local storage and processing (e.g., thereby increasing post-harvest losses and degrading product quality). Without sufficient and appropriate technological improvements in these value chains, climatic trends are likely to increase post-harvest losses due to spoilage while also increasing food-safety risks.

These communities have weak *biophysical* shock absorbers, because predominant land-use practices degrade soil and water quality (e.g., bare soil, lack of crop diversification or rotation, lack of soil amendments, lack of earthworks for reduced erosion, agricultural expansion, etc.). In fact, given that these communities' economic and social shock absorbers are already strained, many shocks are

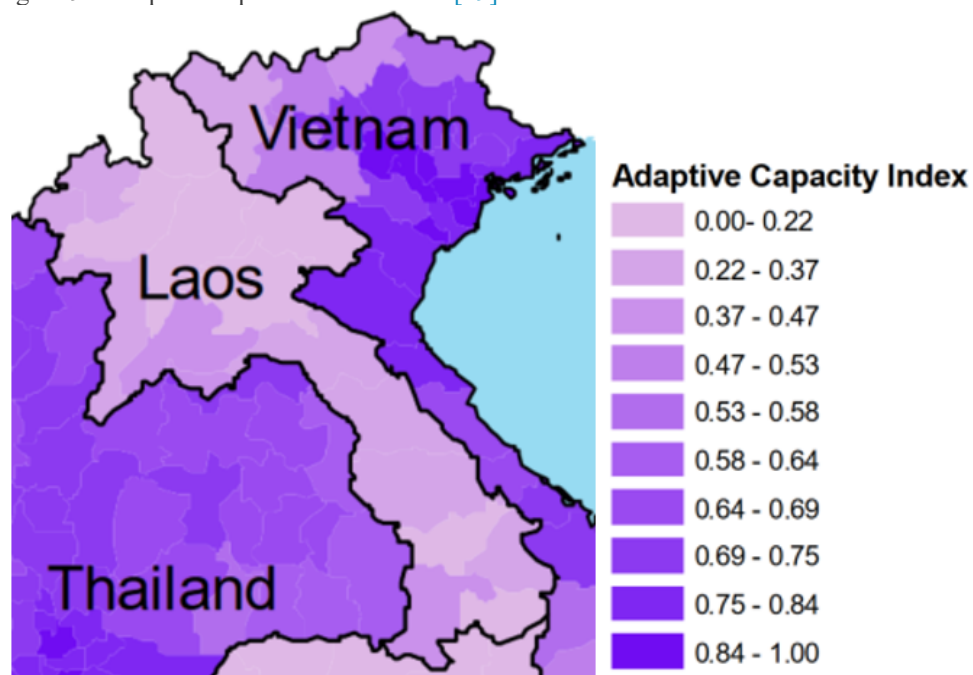
transmitted to the environment, leading to additional degradation of biophysical capital (e.g., agricultural expansion as a primary mechanism for resolving land disputes). Thus, current and forecast climatic changes pose risks not just to livelihoods, but also to local ecosystems, the degradation of which further threatens these communities' livelihoods and well-being.

Although most communities have strong social capital, their *social* shock absorbers are weakened by the aforementioned lack of economic diversification, such that if one household is experiencing agricultural hardships, most other households in the community are likely experiencing the same hardships and are unable to offer much support. Similarly, institutional support (e.g., technical support from agricultural extension services, financial support from banks, etc.) is strained when such hardships are simultaneous and widespread.

Adaptive Capacities

Whereas absorptive capacities (discussed above with respect to sensitivities) enable systems to incur and endure shocks without needing to alter the system, *adaptive capacities* are the abilities to reduce vulnerability (exposure and sensitivity). Simply put, whereas absorptive capacity is a function of the status of exposure and sensitivity, adaptive capacity is the ability of a system to manage risks. In extreme circumstances, adaptation requires a transition or transformation to a new normal (e.g., shifting to a different system of agriculture or away from agriculture completely) rather than mere resilience (recovering to a version of pre-shock conditions). As shown in Figure 9, Lao PDR has very low adaptive capacities.

Figure 9: Adaptive Capacities in Lao PDR[19]¹⁴



For example, literacy rates are low, particularly for women (Figure 10), though this trend is improving (Figure 11).

Figure 10: Literacy Rates, Gender-disaggregated

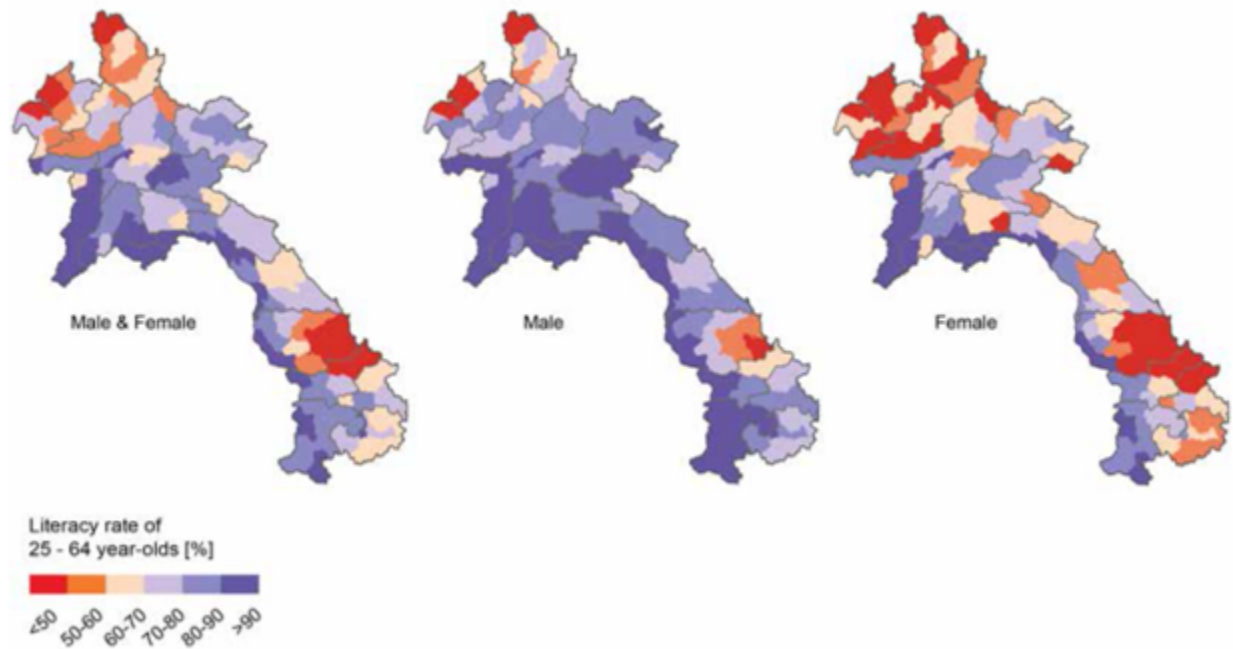
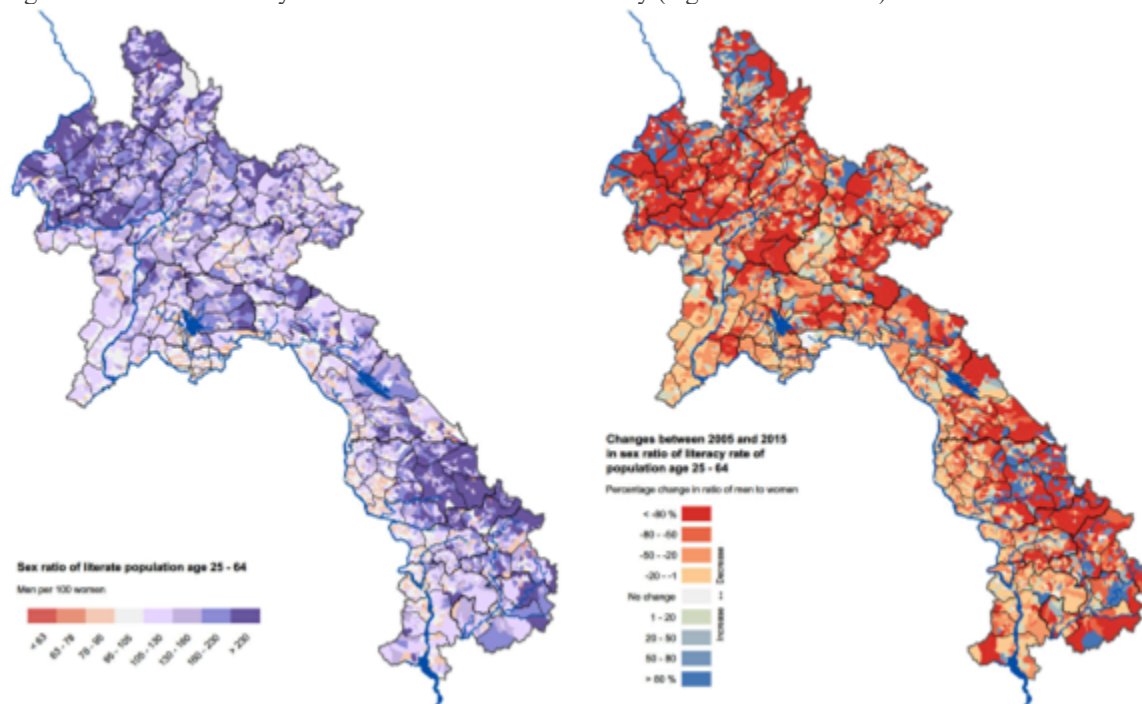


Figure 11: Status and 10-year Trend in Sex-ratio of Literacy (Aged 25 ? 64 Years)



Adaptive capacities can be conceptualized in many ways and often include considerations of complex, context-specific factors. From a decision-process perspective, adaptive capacities can be organized into strategic, technical, and operational functions, which can each be considered at multiple levels (e.g., national, communal, household, sectoral, etc.). As noted above, adaptive capacities can also be considered in terms of (a) preparedness to cope with forecast trends and (b) agility to cope with unforeseen hazards.

The *strategic* function corresponds to an awareness and prioritization of climate-related issues, and establishment of legal and institutional arrangements that facilitate good governance. The *technical* function corresponds to the decision-making frameworks (e.g., monitoring and data protocols), coordination, and planning. The *operational* function corresponds to the various resources to execute the strategic direction and technical plans (e.g., infrastructure, equipment, monitoring stations, broadcast networks, funding, personnel, etc.).

Lao PDR's strongest climate-related adaptive capacities are national, strategic, and threat-specific. National agencies have been established with relevant mandates, national strategic plans and action plans have been established, and GoL has engaged with relevant multi-lateral partnerships. However, adaptive capacities significantly weaken the further one moves from (a) the national level to the household level, (b) strategic to operational functions, and (c) threat-specific coping to general agility.

That is, GoL has laid a strategic, national foundation for adaptive capacities, but those capacities need substantial strengthening at sub-national levels and for technical and operational functions. Technically, several coordination mechanisms have been established with varying levels of effectiveness, though alignment with funding, mandates, and subnational institutional structures continues to be a challenge. Operationally, the mechanisms to translate strategic priorities into on-the-ground actions are tenuous. At the household level, adaptive capacities benefit from some awareness of current and forecast climatic trends, but suffer from a lack of awareness of coping strategies, knowledge of relevant decision processes, access to fit-for-purpose information, and access to relevant resources. The increasing unreliability of seasonal weather patterns means farmers are less able to rely on traditional practices and need more accurate information, in terms of near-term weather forecasts, seasonal forecasts, and longer-term climatic trends.

Agricultural Sector and Food Security

Lao PDR is the most rural country in Southeast Asia, with over three quarters of the total population currently living in rural areas. The agricultural sector in Lao PDR is one of the country's most important, accounting for 29.9% of GDP, and approximately 70-80% of the population depend on the sector for their livelihoods. Around 80% of the rural population are subsistence farmers, depending heavily on rice-based agriculture, livestock, and collection of food from the wild, including non-timber forest products (NTFPs), to meet food and nutritional needs. Despite this, there are high levels of food insecurity and under-nutrition in the country; 44% of children below five years of age are stunted. Food insecurity and under-nutrition have strong geographic links and are particularly prevalent among remote rural upland communities in the Lao PDR, where poverty levels are medium to high.

Farmers in these upland regions have traditionally relied on shifting cultivation (swidden) on slopes, clearing and burning forest or regrowth to prepare land for crops. Eighty percent of Lao PDR is mountainous and 70% of arable land is sloping land. A 2013 analysis of satellite images commissioned by the Sectoral Working Group for Agriculture and Rural Development (SWG-ARD) of the Ministry of Agriculture and Forestry (MAF)^[20]¹⁵ estimated that shifting cultivation affected approximately 6.5 million ha (23.7% of total land area) in 2009. Upland production systems are traditionally very low input with little or no fertilizer, the use of traditional seeds, and are almost completely reliant on manual labour, with generally low productivity. Poverty rates in rural areas are high partly due to a lack of sustainable livelihood opportunities, which have led farmers to over-exploit natural resources and increasingly adopt agricultural mono-cropping without consideration of soil conditions or the integrity of ecosystems critical for local livelihoods, food security and nutrition. This focus on short-term economic returns is partly a reflection of market conditions geared toward short-sighted

transactions, with limited opportunities to build value-chain relationships (social capital, trust, feedback mechanisms to improve quality), reinforced by contracts, for example.

In recent years, upland farmers have reduced and even eliminated the traditional rotation cycle, which included long fallow periods, choosing instead to raise production and generate more revenue from commercial annual (cash) crops. For example, a shift toward maize production began in the early 2000s, driven by (i) policies aimed at reducing poverty and stabilizing farming systems (land allocation policy, focal area development) and (ii) increasing demand from international markets, especially from neighboring Vietnam, China, and Thailand. These shorter fallow periods no longer allow for natural replenishment of nutrients in the soil, which with limited adoption of other soil conservation practices, are leading to soil degradation and erosion with declining soil nutrient status (reduced soil organic matter), decreasing yields and productivity, and the need to clear more space for subsistence and cash crops. Other land-use practices are exacerbating the process, such as the planting of annual crops on exposed hilltops prone to erosion, and uncontrolled livestock grazing on hillsides.

In addition, encroachment, clearance, and conversion of forests (particularly unclassified forest areas) occurs widely in these upland regions[21]¹⁶, principally for agriculture. For instance, consultations on the drivers of deforestation in 2017 under the REDD+ framework showed that every district in Houaphan and Luang Prabang province identified either pioneering shifting agriculture, agricultural expansion, or both as main drivers of deforestation.[22]¹⁷ The impact from agriculture on forests is projected to increase in the future, as district level socio-economic development plans have projected that agricultural land in the province will increase by over 90,690 ha from 2016 to 2020[23]¹⁸, with the focus on expanding cash crop production in the province. As a result, forest ecosystem services critical for agriculture, such as soil-stabilization and pollination, are being lost or degraded, and forest resources?e.g. NTFPs such as such as resin, medicine, fiber, nuts, and fruit?which are often an important source of income for rural areas (contributing an estimated 30-70% of income for forest-dependent households), are not managed sustainably and are therefore often over-exploited. Furthermore, markets and management practices for NTFPs that could encourage their more sustainable production are poorly developed with little diversification, niche marketing, value-addition, or gender-specific products, so there is little dissuasion from overharvesting.

There are also risks to local human communities with cash-crops farmer being highly susceptible to fluctuations in market prices, where significant declines in price can have a detrimental impact on peoples? livelihoods, especially if they have little financial security, and the lack of agricultural diversification increases the vulnerability of villagers to crop failures due to climate change.

Agricultural Value Chains

Analyses during the PPG phase identified several cross-cutting climate-related threats and vulnerabilities associated with agricultural value chains. Less predictable seasonality leads to more false starts and crop losses. Shorter-duration rainy season with more high-volume precipitation events leads to more losses to drought, more erosion, lower soil moisture, lower soil productivity, lower

yields, and less effective fallow recovery. More high-volume precipitation events lead to more damage to already extremely poor transportation infrastructure. Low economic labor productivity (high labor costs, low yields, low quality, low-value crops) leads to high costs and lower margins for producers. Locally non-diversified production leads to homogenized value chains with very similar risk profiles for many communities in an area, exacerbated by sensitivities to regional and global volatility in commodity markets.

Analyses during the PPG phase provisionally determined that value-chain support would best be directed to those for coffee, tea, livestock (especially meat chickens), fodder, bamboo, various locally appropriate NTFPs, sacha inchi, alliums (particularly those suitable for drying, such as onion, shallot, and garlic), various root vegetables (especially purple yam, sweet potato, and elephant foot yam), and high-value market-garden crops (e.g., mint, basil, coriander, lemongrass, chilis, etc.). There are evolving opportunities for such investments to align with MAF's commitment to Green and Sustainable Agriculture, for which SSWG-Agrobiodiversity is working to support commercialization of Houaphan shaded coffee, wild tea, and river weed. As discussed below, analyses discouraged investment support to value-chains for upland rice, upland maize, and banana in the targeted provinces (each of which was tentatively contemplated in the PIF).

Analyses also identified cross-cutting opportunities for strengthened value-chain resilience, particularly to ameliorate risks from poor rural transportation infrastructure, such as via equipment and processes that enable storage, market-timing, value-addition, processing, packaging (particularly for retail), coordination for transportation, and market linkages (especially direct connections between rural producers and urban buyers).

Stakeholder consultations during the PPG suggest that the project should prioritize support to agricultural value chains that align with MAF's evolving strategic framework on green, sustainable, and inclusive agriculture. Alignment with those principles will very likely entail compatibility with agroecological production practices (e.g., agro-forestry, shade-grown coffee, NTFPs), suitability for deforestation-free agriculture, inclusivity, and fair treatment of producers. Supporting value-chains that do not align with these principles runs a significant risk of increasing incentives for deforestation or, at minimum, the continuation of agricultural production practices that degrade land and reduce climate resilience.^{[24]¹⁹}

FAO's baseline assessment for a planned GCF-supported project in support of deforestation-free/ zero-deforestation agriculture^{[25]²⁰} yielded preliminary value-chain analyses for various crops.

Coffee: Provincial REDD+ Action Plans (PRAPs) indicate that expanding shade-grown coffee is unlikely to result in deforestation. Permanent coffee plantations were established in northern Laos around 2010.^{[26]²¹} Coffee production, particularly of shade-grown Arabica, is expanding in northern

Laos (especially in LP, HP, Phongsaly, and Xieng Khouang provinces), supported by growing consumer demand and a stable market price.[27]²²

The coffee value chain in northern Laos faces several threats and barriers to further development, including a lack of effective marketing, lack of reliable and transparent policies, excessive informal charges, inefficiencies due to middle men, unfavorable credit terms, insecure land tenure, and a lack of producer groups in northern Laos.

The project could support investments to address some of these challenges, particularly by supporting the establishment of a northern branch of the Lao Coffee Association (headquartered in Pakse in southern Laos). This proposal has received support during discussions of the Sectoral Working Group for Agricultural and Rural Development in June 2018.

Maize: Maize production has historically been a significant driver of deforestation in northern Laos. Maize production is common in the targeted provinces, especially in Houaphan, where it is primarily exported to Vietnam. Maize production in the targeted provinces is almost entirely of dent corn that is minimally processed before export to Vietnam, where it is used primarily for animal feed, most of which is sold and consumed in Vietnam.

Maize production faces several climate-related threats and vulnerabilities. Maize is typically monocropped and is often grown by numerous producers in an area, making it highly vulnerable to pests, such as Fall Army worm. Barriers to development of the maize value chain include limited market access, limited ability to negotiate prices and contracts, unstable prices, low potential productivity, low potential yields, and high reliance on inputs (especially nitrogen).

Investments to support development of the maize value chain in northern Laos likely offer limited potential benefits (largely because it is a low-value commodity) and significant down-side risks (particularly for land degradation and potential deforestation incentives).

Banana: Banana production has been a historical driver of deforestation in northern Laos, leading to a current governmental ban on banana plantations in northern Laos. Panama disease (*Fusarium oxysporum* Tropical Race 4) a fungal infection that results in substantially reduced yields and increased post-harvest losses has been detected in northern Laos. Additionally, the large majority of historical banana production in northern Laos relied on land leases and agricultural concessions to international agribusinesses.

There are several impediments to development of the banana value chain in northern Laos, including uncertainty about the current and future legality of commercial banana production, extreme difficulty

enforcing standards on the uses and applications of synthetic chemicals (especially pesticides and fungicides), widespread importation and relabeling of banned chemicals, and communities' significant distrust in banana producers.

Tea: Tea has not contributed significantly to deforestation in northern Laos. Most tea produced in Laos is grown by smallholder farmers, often via small-scale production or harvesting of wild varieties, though commercial plantations also exist. Yields are comparatively low, but there is high export potential, particularly to China, Taiwan, Russia, France, Germany, and the U.S.A. There are particularly good markets for Lao PDR's ancient and wild forest varieties. Tea is amenable to intercropping during the first two years, which facilitates transition. Tea production provides a significant source of wage labor for women in multiple phases of the value chain.

Development of the tea value chain in northern Laos faces some barriers, including low-quality processing, low technical knowledge regarding production techniques, lack of widespread organic certification (though most production in northern Laos would likely meet certification standards), and insufficient protection of ancient and wild tea resources.

There is an opportunity to increase domestic value-added processing rather than exporting unprocessed tea. Investments could also support organic or deforestation-free/ zero-deforestation certifications, which garner significant price premia, though mechanisms would need to be emplaced to ensure that those retail margins result in additional profits for producers. Investments could also potentially improve market-based incentives for protecting ancient and wild tea, particularly by smallholders and local communities (versus via governmental enforcement, agricultural concessions, etc.).

Barriers

Across sectors at the national level, several barriers impede efforts to increase climate resilience^{[28]²³}:

- Insufficient financial resources and support for development and deployment
- High investment costs
- Insufficient and ineffective financing mechanisms
- Insufficient technical knowledge and skills on the deployment of technologies for climate change adaptation and disaster resilience
- Inadequate reporting and inaccurate information
- Insufficient tools, best practices, technologies, and reference projects
- Geographical difficulties, including access and unsustainable settlement by local people

Whereas those barriers are relevant for considering the broader national context, the following barriers are specific to climate adaptations for rural communities in the northern uplands.

Barrier 1: Coordination and budgets are insufficient to support strategic priorities.

This barrier is a combination of two intertwined factors. First, priorities for land-use planning and investments are frequently misaligned across sectors, typically as a function of lack of awareness. Second, public budgets are dramatically insufficient to fund the government's very high strategic

reliance on public-sector funding, particularly in the context of limited facilitation of private-sector financing and incentives.

As an example of sectoral misalignment, land that might be considered ideal for natural forest regeneration by one agency might be considered “under-used land” by another agency, and thus conceded as a land concession for foreign direct investment (FDI). Such inconsistencies²⁴, e.g., uncoordinated targets of increased forest regeneration and decreased area of under-used land²⁵ can lead to competition and contention between agencies rather than coordination, prioritization, and cooperation. A key constraint is the lack of knowledge regarding facilitation of effective linkages between national priorities and various sources of financial support (e.g., domestic investment, FDI, international funding). This financial constraint is exacerbated by what has traditionally been a strong focus on governmental finance, such as by proposing to improve agricultural development via establishment of a national agricultural subsidy, but without a plan for how the subsidy would function, a sufficient budget, a legal or policy framework, an operational mechanism for delivery, inclusion in relevant agency mandates, etc. In the past, such governmental proposals have often limited or not fully incorporated roles for the private sector.

These financial constraints are not just an issue of supply (e.g., governmental budgets, FDI, international aid, etc.)²⁶ in terms of both amounts and consistency²⁷ but also of a lack of financial instruments, financial literacy, investment models, coordinated institutional roles, etc. to distribute the funds effectively and efficiently. For example, MAF and MoIC lack localized value-chain typologies or models that provide overviews of different products, such that different value-chain actors can see where they fit into the puzzle. That is, GoL at national and sub-national levels lacks models to facilitate assessments and shared understandings of value-chains and associated networks, including roles, products, processes, markets, sources of inputs and financing, opportunities for value-addition, risks from various sources (e.g., international commodity price fluctuations, climate change, etc.). Additionally, Lao PDR faces the thematic challenge of a broadscale lack of reliable data with which to manage public policy.

During the PPG phase, consulted stakeholders agreed that, with respect to broad-scale and inter-sectoral coordination, strengthening existing coordination mechanisms is preferable to creating new mechanisms.

National level. At the national level, several coordination mechanisms exist, though they operate with significantly different levels of efficiency, engagement, and influence. These include:

? The **National Round Table Process (NRTP)**^{[29]²⁴}, led by the Ministry of Planning and Investment (MPI)^{[30]²⁵}, coordinates the work of governmental, inter-governmental, CSO, and private-sector organizations. The current version of the NRTP began in 2000 and includes high-level meetings every 5 years, annual implementation meetings, and inputs from 10 Sectoral Working Groups (as well as their sub-sectoral working groups).

? The **National Steering Committee on Climate Change (UNFCCC)**, led by MoNRE-DCC, coordinates the establishment of guidelines and reports on Lao PDR’s progress on commitments under UNFCCC.

? The **National Disaster Management Committee**, led by the Ministry of Social Welfare (MSW).

? The **Natural Resource and Environment Working Group**, led by MoNRE.

? A new coordination mechanism being developed with support from GCF and FAO to facilitate data-sharing between MoNRE-DCC and MAF-DoF.

Among these, the NRTP poses the strongest opportunity to strengthen coordination through an existing framework. The highest level of the NRTP is the Round Table, which is a venue for strategic and political dialogue that is informed by the NRTP's Sectoral Working Groups^[31]²⁶ (SWGs; including their subordinate sub-sectoral working groups).

Table 4: Structure of NRTP Sectoral Working Group for Agriculture and Rural Development

Sectoral Working Group	Chair	Co-Chair(s)
Agriculture & Rural Development	MAF	France, FAO
Sub-sectoral Working Group	Chair	Co-chair
Agro-biodiversity	NAFRI	FAO
Agri-business	DTEAP	SDC
Forestry	Dept. of Forestry	JICA
Rural Development	Dept. of Rural Development	Luxembourg
Policy Think Tank	NAFRI	SDC, FAO

However, these national coordination mechanisms (e.g., NRTP, SSWG) do not have structures or practices to ensure that their outputs cascade to sub-national levels, particularly to local levels.

Sub-national level. There are no systematic inter-sectoral coordination mechanisms at the sub-national level, though there are sometimes *ad hoc* provincial committees or task forces. This leads to several negative consequences. First, the lack of sub-national coordination means that information flows through separate vertical channels (corresponding to the issuing ministries and departments), such that policies are not harmonized or consistently integrated. When sub-national agencies and offices attempt to reconcile various policies to fit local contexts, their interpretations may differ by district and may not accurately reflect the strategic intent.

Second, the lack of sub-national coordination leads to disparate bottom-up reporting from multiple agencies and offices, yielding data that are often inconsistent. Third, the lack of coordination largely precludes bottom-up feedback from communities, value-chain actors, and others who attempt to integrate policies in order to abide by them. Communities attempting to deal with seemingly

conflicting policies may be bounced from one agency to another, with no clear resolution. In many cases, there is no clear means of resolving difficulties or providing feedback when policies seem to conflict with one another or do not fit clearly with local circumstances.

Barrier 2: Land-use planning and agricultural value chains do not integrate climate-change considerations or facilitate climate-change adaptations.

Land-use planning (LUP) in Lao PDR is participatory and localized. (See Annex J for a comparison of land-use planning approaches in Lao PDR.) Therefore, the primary mechanism for strategic policies to influence local land-use plans is through technical assistance via local and district-level offices. However, these offices lack the technical knowledge as well as the tools to facilitate and incentivize climate-smart land-use approaches, agro-ecological considerations, and nature-based solutions, particularly in ways that integrate financial and economic considerations (e.g., access to markets, financing, technology for value-addition, etc.).

Additionally, there is limited information available to provide decentralized governmental offices?especially at district and local levels?with locally specific forecasts for the down-scaled implications of climate change, including training and tools to interpret and use that information effectively in advising local communities, such as high-resolution climate-projections and agro-ecological zone (AEZ) mappings.

Likewise, agricultural value chains are not supported for effective integration of climate-change considerations. In particular, value-chain actors lack support in the form of ready options for business models, financing, inputs, value-addition, and TA to support climate-adaptive practices. Moreover, highly inefficient market signalling means that producers and buyers have great difficulty finding one another, maintaining awareness of each other?s needs and priorities (e.g, supply and demand), and adapting or planning accordingly. There are no broadscale models for linking local producer groups with domestic and international buyers.

Additionally, as has been noted in numerous previous reviews,[32]²⁷, [33]²⁸, [34]²⁹, [35]³⁰, [36]³¹, [37]³² a continued focus on commodity exports reinforces agricultural value chains that are often monopsonic and conducive to rent-seeking and exploitation rather than empowering of local communities?e.g., due to long value chains that emplace numerous actors and middle men between retail consumers and agricultural producers, with numerous information asymmetries, power asymmetries, transaction costs, and formal and informal fees, as well as few mechanisms to ensure that cash trickles down to producers.

Barrier 3: Rural livelihoods and land uses in the northern uplands are not resilient or adaptive to climatic trends.

As noted above, rural farmers? land-use practices significantly contribute to their sensitivities to climate change, natural disasters, and other shocks. Most farmers use extensive production of low-value commodity crops (especially rice and maize) with high labor costs, low mechanization, low yields, limited inputs, high transportation costs, high vulnerability to price fluctuations in international markets, and limited opportunities for value-addition or market-timing. Unfortunately, their cultivation

of annual crops on steep slopes with no ground cover or contouring leads to severe erosion and soil degradation.[38]³³, [39]³⁴, [40]³⁵, [41]³⁶ For example, see Image 4, which is an all-too-common sight in the northern uplands. Of all communities visited during PPG consultations, there was hardly any observed use of contour farming, conservation agriculture, berms, hedgerows, cover-cropping, intercropping[42]³⁷, manure management, mulching, or other agro-ecological practices. The commonality and entrenchment of these poor land-management practices pose a substantial barrier to improved climate resilience in rural communities of the northern uplands.

Image 4: Land Degradation from Upland Maize Production in Houaphan Province[43]³⁸



1.a.2. Baseline scenario

The following section describes the context of recent and current efforts to build climate adaptability in Lao PDR, particularly in the agricultural sector and in the northern uplands. For more specific information on linkages to co-financing and LDCF additionality, please see section 1.a.5.

Government Programs

The agricultural sector is central to both growth and poverty-reduction in Lao PDR. Annual public domestic investments (actual) in agriculture were approximately US\$12.4 million in 2017.[44]³⁹ Rural growth will be mainly driven by the continued commercialization of agriculture and management of the natural resource base. Numerous baseline initiatives address issues associated with improving agricultural production through strengthening institutional and technical capacities and improving the monitoring of factors of agricultural production. Key national programs in the two target provinces include: Vision 2030; Strategy 2025; 8th Five-Year Development Plan (2016-2020); Forestry Strategy to the Year 2020; and Agriculture Development Strategy to 2025 with Vision to 2030.

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Key Donor-supported Initiatives

Additionally, several donor-supported programs incorporate agriculture and natural resource management in ways that are relevant to climate change adaptation, having a total estimated value of more than 314 million USD. Some key programs relevant to this project are described below.

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Northern Uplands Food and Nutrition Security Improvement Project, financed by EU and implemented by Helvetas, improves livelihoods of poor rural women and men farmers in the Northern Uplands of Laos. The project improves food and nutritional security, especially of women and young children in Vieng Phoukha district of Luang Namtha province and Ngoy district of Luang Prabang.

Strategic Support for Food Security and Nutrition Project (SSFSNP) supported by IFAD under the Global Agriculture and Food Security Program (GAFSP), with an overall budget of over USD 38 million (US\$ 30 million from GAFSP), reduces extreme poverty and malnutrition in the poorest communities in 12 districts across 400 villages in Houaphan, Oudomxai, Phongsaly, and Xieng Khouang provinces in the upland areas of Lao PDR. The project reduces malnutrition and enhances income and food security in rural communities by supporting nutrition-sensitive and climate-smart agricultural practices. SSFSNP is piloting new approaches and technology to scale up existing, successful agricultural technologies and systems to accelerate GoL's achievement of national goals for food security and improved nutrition. SSFSNP strongly emphasizes building an enabling environment for sustainable market-led improvements in nutrition-rich and diverse agricultural production and productivity and rural employment and incomes. SSFSNP also empowers women to improve family diets and is developing business models that achieve mutually beneficial outcomes for investors, farmers, and farmer groups. The project also facilitates collaboration and communication between foreign direct investment (FDI) and ODA investments.

Sustainable Forestry and Rural Development ? Scaling-Up Participatory Forest Management (SUFORD-SUPFM) project, supported by the World Bank, is working on SFM, village development, and alternative livelihoods in 13 provinces of Lao PDR to support sustainable management of natural production forests to alleviate rural poverty. It incorporates and monitors forest carbon emissions, and is supporting introduction of performance payments for forest carbon sequestration and timber harvesting benefit-sharing schemes.

Landscape Management and Conservation Agriculture Development for Eco-Friendly Intensification and Climate Resilient Agricultural Systems (EFICAS) project in Lao PDR was managed by Cirad and funded by the European Union. EFICAS developed innovative methods and intervention approaches to improve farmers' livelihoods and support farmers' adoption of climate-smart agricultural systems based on conservation agriculture through: (a) village landscape management (engaging village communities in designing low-carbon emission strategies); (b) participatory networks on agroecological practices (engaging development stakeholders in testing agroecological practices adapted to local contexts); and (c) multi-stakeholder communication platform (creating an enabling environment to broad-scale dissemination of alternative production systems through participatory learning approaches, and formulation of evidence-based policies). EFICAS employed a landscape-based approach that emphasizes adaptive management, stakeholder involvement, and multiple objectives, seeking to contribute simultaneously to food security, livelihood opportunities, biodiversity conservation, climate change mitigation/ adaptation, and cultural and recreational needs. EFICAS's activities were conducted in the 3 northern provinces of Phongsaly, Luang Prabang, and Houaphan. The project's interventions were piloted and tested in 12 selected villages. Although the project has ended, it provides an important technical foundation on which to build.

The National **REDD+** Task Force has been established with inter-ministerial representation, and GoL signed the REDD+ Readiness Preparation Grant Agreement with the World Bank in August 2014. Following the agreement, MAF designated a project-management team (PMT), consisting of the REDD+ Office under the Department of Forestry (DoF). Provincial REDD+ Action Plans (PRAPs) have been prepared for the period 2018 ? 2025 for six provinces in the northern uplands, including Luang Prabang and Houaphan. These PRAPs aim to: (i) reduce emissions from land use, deforestation, and forest degradation by increasing adoption of sustainable land management and the conservation and enhancement of forest carbon stocks and (ii) increase ecosystem resilience and enhance livelihoods of forest-dependent peoples, by improving upland cultivation systems, facilitating investments in production systems for alternative cash crops, livestock, and fodder. Although the activities are limited to the forestry sector, they provide an important baseline for work on several outputs in the LDCF project.

FAO has implemented several projects in Lao PDR and relevant regional initiatives in the field of agriculture, food security, climate-change risk-management, disaster preparedness, and emergency response. Sustainable intensification of agricultural production among smallholders is in line with FAO's common vision and the Save & Grow approach. FAO's Representation in Lao PDR (FAO-Laos) has lengthy and expansive experience working with governmental agencies, especially with MAF and MoNRE, on issues related to climate change adaptation and mitigation, agriculture, and food security.

FAO is the GEF Agency for *Climate Adaptation in Wetland Areas in Lao PDR (CAWA)* and the *Strengthening Agro-climatic Monitoring and Information Systems to Improve Adaptation to Climate Change and Food Security* project (SAMIS).^{[45]⁴⁰} FAO technically supported a GEF-funded, UNDP-coordinated agro-biodiversity project that, since 2011, has ensured that agro-biodiversity is incorporated in national policies and that Lao farmers continue to benefit from the biodiversity present in their farming systems. FAO-Laos is part of the regional network to implement the Paris Agreement through CSA (TCP project *Addressing the 2030 Agenda on climate change and food security through Climate-Smart Agriculture*), which includes Bangladesh, Cambodia, Lao PDR, Myanmar, Philippines and Viet Nam. FAO also helped establish a network of Farmer Field Schools (FFSs) in 8

provinces including Luang Prabang employing local participatory approaches for testing and adoption of new farming practices. As noted under Component 3 of this LDCF project, FFSs are effective mechanisms to facilitate the adaptation and adoption of innovative, climate-smart technologies and practices via a learning-by-doing approach.

Additionally, FAO has supported MAF in preparing the *Plan of Action for Disaster Risk Reduction and Management in Agriculture*. Relevant global FAO programs include FAO-Adapt (data and knowledge for the impact and vulnerability assessment and adaptation), an organization-wide framework program launched in 2011 that provides guidance, prioritized actions, and support for FAO's multidisciplinary activities for CCA. In collaboration with several development partners, FAO also partners with GoL to support and advance the country's readiness for REDD+, particularly in preparing ground for piloting REDD+ at a regional level in the north of the country. These efforts will be implemented with funding anticipated from the GCF (see below), and will facilitate reception of potential REDD+ results-based payments through the Forest Carbon Partnership Fund (FCPF).

With **Green Climate Fund (GCF)** financing, FAO is implementing a REDD+ readiness proposal that: (i) establishes a coordination mechanism between MoNRE's Department of Climate Change (DCC; office of the Nationally Designated Authority (NDA) and the REDD+ Division of MAF's Department of Forestry (DoF) at provincial and national levels; (ii) develops and consults on private-sector incentives to support zero-deforestation agriculture (or deforestation-free agriculture) for the six northern provinces of Lao PDR's Emissions Reduction Program^[46]⁴¹. The proposal also aims to strengthen the institutional foundation for a policy on zero-deforestation agriculture (or deforestation-free agriculture) in order to address agriculture's role as the most expansive driver of deforestation in Lao PDR. Although the activities target climate-change mitigation in the forestry sector, the project provides an important baseline for work on several outputs in the LDCF project, which will focus on climate-change adaptation.

In addition, three concept notes have been submitted to the GCF: (1) *Resilient Integrated Food Systems in Rural Laos* (RIFS; UNDP), (2) implementation of Lao PDR's Emission Reductions Program through improved governance and sustainable forest landscape management (GIZ), and (3) *Ecosystems and Urban Adaptation in Lao PDR* (UNEP). This LDCF project will closely align and coordinate with the proposed GIZ project to mainstream CCA and resilience for systemic impact at landscape level. The total value of the GIZ proposal is 169 million USD, 46 million USD of which are being requested from the GCF Mitigation Result Area.

Asian Development Bank (ADB) is implementing a technical assistance project for *Sustainable Rural Infrastructure and Watershed Management Sector* that is improving (i) land-use management within watersheds prioritized for productive rural infrastructure (PRI) and (ii) institutional arrangements and capacities to ensure and support good agricultural practices and sustainable watershed management. A proposed follow-up project (58 million USD) would cover of Houaphan, Luang Prabang, Vientiane, and Xiangkhouang. The current project provides an important baseline for work in the Components 1 and 2 of this LDCF project.

1.a.3. Alternative scenario

The project's alternative scenario is to change current land-use practices in the northern uplands of Lao PDR which produce low yields, degrade the land, and exacerbate climate vulnerabilities to more climate-resilient, economically productive, and environmentally sustainable methods. This is to be achieved by (i) strengthening capacities to mainstream and access financing, (ii) integrating climate

⁴¹ <http://www.adb.org/Documents/Projects/ADB-FCPF-REDD-Readiness-Proposal/ADB-FCPF-REDD-Readiness-Proposal.pdf>

change into landscape-level^[47]⁴² planning and value chains, and (iii) enabling and incentivizing local communities to adopt more sustainable, climate-smart practices and livelihoods.

Component 1 addresses Barrier 1.

Component 2 addresses Barrier 2.

Component 3 addresses Barrier 3.

Component 4 ensures efficient delivery, up-scaling, and durability of results.

The project's technical solutions will reflect a principle-based approach that prioritizes (i) facilitation of good governance (e.g., inclusion, effectiveness, transparency, accountability, etc.), (ii) empowerment of local and private-sector solutions, (iii) 'no-regrets' interventions and solutions (i.e., that will deliver benefits irrespective of contingencies), (iv) balance in strengthening both general and threat-specific resilience, (v) removal of barriers, and (vi) demand-based incentives (i.e., 'pull' vs. 'push').

Component 1: Enabling environment to promote and incentivize resilient and sustainable rural landscapes in Lao PDR.

This component addresses Barrier 1 described above. LDCF funding will be used to strengthen relevant policy, legal, institutional, and financial frameworks to incentivize, facilitate, and support CCA in land-use planning, agricultural value chains, and rural livelihoods.

Outcome 1.1.: Strengthened capacity to mainstream and access climate finance for resilient and sustainable rural landscapes in Lao PDR.

Outputs under this outcome provide technical assistance for national and sub-national institutions to prioritize investments for climate-adaptive land-use planning, harmonize inter-sectoral approaches, and access sufficient and varied financing. The project will ensure that MAF is better able to facilitate participatory, gender-sensitive inter-sectoral coordination with relevant stakeholders—particularly with MPI, MoIC, and MoNRE—at national and sub-national levels to (i) map priorities, approaches, and tensions/ inefficiencies, (ii) institutionalize investment-prioritization processes, (iii) harmonize targets and prioritize approaches (including processes for specifying locations, sequencing, etc.), and (iv) draft inter-sectoral proposals to access cascade-based^[48]⁴³, ^[49]⁴⁴, ^[50]⁴⁵ blended financing that specifies roles for local communities, private sector (domestic and international), government, and civil society (domestic and international).

Achievement of this outcome will be indicated by:

- 1.1.a. Published guidelines on participatory, gender-sensitive inter-sectoral planning and investment processes at national (1) and sub-national (2) levels.
- 1.1.b. 100 institutional personnel (30% women) trained in facilitation of the planning and investment processes in the published guidelines.
- 1.1.c. Inter-sectoral coordination plans published for four districts of Luang Prabang and Houaphan provinces.
- 1.1.d. Inter-sectoral coordination mechanisms established (1 national and 2 provincial).
- 1.1.e. A memorandum of understanding between relevant ministries?including MAF, MoIC, MoNRE, MPI, and LWU?detailing endorsement of the guidelines, including a cascade-based approach to blended financing.
- 1.1.f. Four endorsed landscape investment packages.
- 1.1.g. Three institutions with increased capacities to assess or manage climate finance.

Output 1.1.1.: Strengthened inter-sectoral planning and investment-prioritization processes at national and sub-national levels for resilient and sustainable rural landscapes.

The primary deliverable of this output will be harmonized, codified guidance on national and sub-national prioritization processes for land-use investments. The project will support several activities to produce this deliverable in coordination with the National Round Table Process (NRT) Sectoral Working Group on Agriculture and Rural Development (SWG-ARD), NRT's SWG on Environment, MAF's Department of Policy and Legal Affairs (DoPLA), MPI, MoIC, MoNRE (including the Environment Protection Fund?EPF), and LWU.

First, the project will produce a **mapping of the network and governance structure for land-use investments**?including planning, decision-making, execution, and oversight?reflecting, *inter alia*, the priorities, funding sources, concerns, metrics, mechanisms of influence, authorities, and accountabilities of all relevant stakeholders. This document will include (i) a review of historical problems and inefficiencies, (ii) a provisional typology of problems (including typical influences and associated stakeholders), (iii) a prioritization of the identified types in the typology (e.g., based on frequency of occurrence, scale and severity of harms, urgency of resolution, capacity for resolution, etc.), (iv) case studies for each of the three highest-priority types in the typology (in order to help stakeholders better envisage the priority types), and (v) an assessment of the status of land-use decision-making according to principles of good governance (e.g., participation, rule of law, transparency, accountability, effectiveness, efficiency, safeguards for vulnerable groups). In particular, the document will consider misalignments in the approval processes for land investments. The overall aims of this review are (i) to establish a clear, shared understanding of the context of landscape-level planning and investments that pertain to climate-adaptive investments in agriculture and forestry and (ii) to identify and prioritize opportunities to harmonize land-use planning between sectors associated with agriculture and forestry. As such, this output strengthens the integration of climate resilience in the

agricultural and forestry sectors into broader national efforts coordinated by MPI. That is, the project contributes to harmonization across all land-use-planning sectors by facilitating alignment between sectors associated with agriculture and forestry.

This activity will be coordinated by MAF's Department of Planning and Finance (DoPF) in coordination with MPI (particularly via the NRTP and MPI's Department of Planning and the Investment Promotion Department) and with technical support from DALAM, NAFRI, DoPLA, and PMU staff. A preliminary gap analysis for some land-use decisions is presented in Annex K.

Second, the project will **design a provisional process for national and sub-national consultations regarding land-use decision-making**. The aim of this guidance is not to facilitate a one-time exercise, but rather to pilot a consultative approach (principles, processes, and outputs) that will be institutionalized (focal agency to be determined)[51]⁴⁶ for periodic re-alignment of stakeholders' views and reprioritization of investments based on reliable, current data. The main goal of this process is to strengthen the adaptive capacities of decision-makers for land-use investments. The primary mechanism for achieving that goal is the structured facilitation of informational exchanges between all relevant stakeholders both vertically (from national to local, and local to national) and laterally (across sectors and ministries).

To achieve those aims, this activity will establish guidelines to facilitate multi-stakeholder, multi-sectoral consultations focusing on sectors in or associated with agriculture and forestry at provincial and district levels to ensure (i) an on-going understanding of challenges, priorities, and opportunities for land-use decision-making, (ii) informed and empowered decentralized decisions regarding locally appropriate land-use decisions, (iii) harmonized interpretation and implementation of CCA-related policies, particularly in the agricultural and NRM sectors, in a manner that is reflective of local contexts, (iv) mechanisms for inclusive feedback from various stakeholders (e.g., regarding implementation challenges, effectiveness, unintended consequences, etc.), and (v) continuous improvement via constructive bottom-up feedback to more centralized levels (e.g., from district to provincial, from provincial to national). In particular, the guidelines will consider ways in which critical monitoring information can be cross-checked.

This jurisdictional approach mirrors and aligns with the jurisdictional approach under the on-going GCF readiness project, and the project will therefore continue to coordinate with those initiatives.

The formats of these consultations will be determined in the course of implementation (e.g., they might include a government-only coordination phase before a subsequent public consultation phase; the consultations might be conducted as fora, workshops, etc.), but will include active participation and representation from villages, vulnerable constituencies (e.g., ensuring communication via local languages), women, producers' groups, civil society, financial institutions, and relevant private-sector actors (e.g., processors, domestic and international buyers).

The guidance will provide structures, processes, and tools for facilitating these consultations and constructively managing the resulting feedback. The guidance will help provincial agencies (i) coordinate the consultation process for locally appropriate prioritization of land-use investments and (ii) adapt the tools and guidance to replicate a similar process at district level.

The guidance will also be accompanied by an administrative and operational plan to ensure post-project durability in terms of assigned responsibilities, adequate steady-state financing, and occasional reviews for effectiveness and continuous improvement. One potential model for consideration includes an annual round-table process covering a different main theme each year (e.g., harmonizing implementation of CCA priorities, agricultural production targets, the Forest Law, and land-use planning) plus important updates. In accordance with a cascade-based approach to blended financing, the project team will explore the potential for such consultations to be supported via a mixture of funding from governmental budgets, private-sector sponsors, and international donors.

This activity builds on efforts to operationalize the Article 8 of the Law on Making Legislation (No. 19/ NA, 2012), which requires extensive public consultation on new laws and regulations. This activity aligns with (i) provisionally proposed activities under the GCF-supported project for deforestation-free agriculture in Lao PDR and (ii) the processes for revising and implementing District and Provincial Socio-economic Development Plans (D/ PSEDs), which are coordinated via MPI and its subsidiary agencies.

Third, under this output, the project will **pilot the consultative process at national level.**

Fourth, under Outputs 2.1.3. and 2.2.3., the project will **pilot the consultative process at sub-national levels** at provincial level in Luang Prabang and Houaphan, and at district level within the selected target districts. Though the guidance for provincial consultations will be piloted in Luang Prabang and Houaphan, it will be drafted for relevance to all provinces and revised accordingly before an expected broader release.

Fifth, based on experiences and best practices from the pilots, the guidance will be refined and **the procedure will be codified via a formal Memorandum of Understanding (MOU) with relevant stakeholders**, with the aim of formalization as a national decree.

DoPF will coordinate these activities and the PMU will ensure close coordination with cofinanced activities under the World Bank-supported *Second Programmatic Green Growth Development Policy Operation*, which is led by MPI's National Institute for Economic Research as part of its mandate to coordinate and revise the National Green Growth Strategy. LDCF resources will ensure that this activity supports relevant actions pertaining to agriculture and NRM.

Indicative Activities:

- ? 1.1.1.1.: Map the national and provincial multi-sectoral networks relevant to land-use investments.
- ? 1.1.1.2.: Establish guidelines to facilitate multi-stakeholder, multi-sectoral consultations at provincial and district levels.
- ? 1.1.1.3.: Pilot the multi-sectoral consultative process at national level.
- ? 1.1.1.4.: Codify the guidelines via a formal Memorandum of Understanding (MOU) with relevant stakeholders.

Output 1.1.2.: Innovative financial instruments, investment models, and institutional arrangements developed and enabled to mobilize climate finance for resilient and sustainable rural landscapes.

Insufficient financing or market-based incentives is a commonly cited barrier to adopting many climate-adaptive technologies and practices. Therefore, strengthening the financial support for and viability of climate-adaptive approaches would significantly facilitate their adoption. Under this output, the project will (i) assess the feasibility and trade-offs of various innovative financial instruments, investment models, and institutional arrangements, (ii) conduct multi-stakeholder consultations for initial feedback and validation, (iii) create and gain endorsement of prototypical landscape investment packages for blended financing, (iv) create guidelines and training materials, and (v) deliver training to relevant stakeholders.

Refinement and prioritization of appropriate options and incentives will follow a modified cascade approach^[52]⁴⁷, whereby the highest-priority incentives are those that are embedded in markets (enabled by policy reforms), followed by those that require transitional support (e.g., via short-term subsidies, project-based support, etc.), then by those that require steady-state support (e.g., via annual governmental budgets, other public investments), and finally by those that are not conducive to financial incentives.

Analyses during the PPG phase suggest numerous possibilities to strengthen market-based incentives, including:

- ? Strengthening producer associations (e.g., capacity development, reduced regulatory constraints on shareholder payments versus retained operating capital)
 - ? Supporting sector-based platforms (e.g., association of coffee producers in northern Lao PDR)
 - ? Strengthening farm partnerships
 - ? Standardizing support for financial efficiency between value-chain actors (e.g., provision of contract templates or voluntary standard terms for working capital loans between value-chain actors)
 - ? Strengthening producers' business skills (e.g., contracts, negotiations, financial literacy, book-keeping)
 - ? Improved access to working capital, credit (e.g., pre-financing), and mechanisms to speed payments
-

- ? Strengthening connections and information-sharing between value-chain actors (e.g., between producers and processors, processors and wholesalers, etc.)
- ? Increasing productivity and profitability via improved access to mechanization and relevant crop-management information (e.g., agro-meteorological information for higher yields, higher net profits from improved efficiency of inputs, increased resource-use efficiency)
- ? Increasing transparency throughout supply chains to reduce transaction costs from informational inefficiencies and asymmetries
- ? Strengthening enforcement and accountability (e.g., of contracts)
- ? Facilitating or developing the potential for blended financing options, such as smallholder sustainable production bonds
 - o For example, the feasibility of using such bonds to support up-scaling of climate-smart rice in Asia is currently being explored by Phoenix Group, BNP Paribas, and ADB.

There are also many possibilities for policy reforms to facilitate value-chain actors providing direct support for up-scaling of climate-resilient technologies and practices, including:

- ? Downstream-based financing of upstream adoption, technology transfer, technical assistance, etc.
- ? Working capital loans between value-chain actors
- ? Incentives (e.g., discounts) for electronic payments (e.g., electronic deposits to bank accounts, payments to mobile “wallet” apps) in order to speed payments and improve efficiencies (e.g., reduced paperwork, improved audit records)
- ? Technical support programs to enable farmers to comply with sustainability standards (e.g., deforestation-free/ zero-deforestation agriculture) or to adopt climate-resilient practices or technologies
- ? Commitments to source agricultural products from producers meeting sustainability criteria (e.g., deforestation-free/ zero-deforestation agriculture)
- ? Broadening the scope of sustainability criteria to enable more integrated support to producers
- ? Increasing marketing of sustainable agricultural products (e.g., deforestation-free/ zero-deforestation agriculture)
- ? Incorporating gender-related considerations into strengthened supply chains in order to ensure that resilience benefits reach, benefit, and empower all value-chain actors
- ? Expanding and deepening commitments to producer support and sustainable sourcing
- ? Developing and applying more integrated sustainability/ labelling criteria
- ? Supporting research and development for integrated approaches to agricultural production and landscape management
- ? Developing multi-stakeholder networks for sustainable production landscapes
- ? Enabling downstream payments for upstream value-addition (e.g., post-harvest processing, storage, transportation)

Currently, development initiatives are primarily financed via grants, concessional lending, and public debt. Private-sector financial support is under-utilized, largely because relevant private investment would typically require a blend of products and approaches to address different aspects of a proposal. For example, a coordinated initiative might pair public bonds for infrastructure, private debt for capital expenditures, subsidized debt for working capital, supply-chain credit for inputs, grants for technical assistance, philanthropy for transitional arrangements, and so forth. The project will build on MAF’s and FAO’s recent collaborations^{[53]⁴⁸} for public-private partnerships, such as leveraging governmental resources (e.g., land access, facilities, infrastructure investments, technical assistance) in exchange for private-sector commitments and investments such as medium- or long-term leases on processing facilities (e.g., washing, sorting, processing, packing, transporting), minimum contracts for local employment and purchases, additional infrastructure investments, and so forth.

Given that climate-resilient approaches very often yield CCM benefits, investments in climate-resilience also pose a significant opportunity to support CCA efforts with CCM-related funding. The CSA framework is ideally suited to identify and strengthen those linkages. During the PPG phase, FAO and CIAT assessed the current context and opportunities for private-sector investments in CSA.[54]⁴⁹ The forth-coming report[55]⁵⁰ covers conventional and innovative financial instruments for CSA, public- and private-sector sources of financing for CSA, key parameters for private-sector investors, and guidance for matching private investors with CSA interventions.

Explorations of these climate-related financing options will coordinate with MoIC (e.g., via the Dept. of SME Promotion, DoSMEP; Dept. of Planning and Cooperation, DoPC; or Economic Research Institute for Industry and Trade, ERIIT) and MoPI (e.g., via the National Institute for Economic Research, NIER, which leads coordination and revision of the National Green Growth Strategy).

Activities under this output will also collaborate extensively with MoNRE's Environment Protection Fund and will therefore align closely with the World Bank's support to the National Green Growth Strategy via Policy Track 2.2.: "Strengthening country instruments for clean and resilient green growth financing," which work with MoNRE's Environment Protection Fund (EPF) to increase and diversify public revenues to support environmental initiatives. This LDCF project complements those efforts by creating frameworks in which public resources are blended with other forms of financing in a cascade-based approach.

The financing options developed under this output will be translated into sectoral investment action plans under Output 2.2.3. Development of the investment plans will inform, be informed by, and contribute to the implementation of the on-going National Action Plan (NAP) development process being coordinated by MoNRE in partnership with UNEP. It will also build on similar initiatives being undertaken in other FAO CSA projects in the region.[56]⁵¹

Indicative Activities:

- ? 1.1.2.1.: Assess the feasibility and trade-offs of various innovative financial instruments, investment models, and institutional arrangements.
- ? 1.1.2.2.: Conduct multi-stakeholder consultations for initial feedback and validation.
- ? 1.1.2.3.: Create and gain endorsement of prototypical landscape investment packages for blended financing.
- ? 1.1.2.4.: Create guidelines and training materials and deliver training of trainers.
- ? 1.1.2.5.: Deliver training to relevant stakeholders.

Component 2: Resilient and sustainable land-use planning and value-chain networks in two provinces of the northern uplands.

Component 2 strengthens and mainstreams climate-resilience considerations into land-use planning (Outcome 2.1.) and relevant value-chains (Outcome 2.2.). Component 2 targets activities to transfer innovative practices and approaches to avoid and diminish adverse climate impacts and provide market-based incentives for northern upland farming communities to adopt climate-resilient technologies and practices, particularly as part of a CSA-based approach. Activities under this component will promote gender-sensitive climate-resilient livelihoods in targeted areas and develop alternative climate-adapted livelihood options to diversify sources of sustainable incomes for land and natural resource users, thereby increasing their economic resilience.

Outcome 2.1.: Integrated, landscape-level planning strengthened using climate-smart practices for resilient and sustainable landscapes in the northern uplands.

Achievement of this outcome will be indicated by:

- 2.1.a. 80 extension officers (or other pertinent personnel) trained to conduct climate vulnerability assessments (20% female)
- 2.1.b. Participatory climate vulnerability and risk assessments conducted in four districts^{[57]⁵²}
- 2.1.c. Similarity and suitability analyses to mainstream CCA into integrated management plans conducted for five agricultural products in targeted provinces
- 2.1.d. 150 governmental staff (25% female) trained in the integration of CCA approaches into local land uses and governance
- 2.1.e. Climate-adaptive provincial land-use frameworks generated for two provinces
- 2.1.f. Climate-adaptive district land-use frameworks generated for four districts
- 2.1.g. P-FALUPAM conducted in 150 villages using suitability analyses and climate forecasts
- 2.1.h. 63,000 beneficiaries (50% female) of climate-adaptive land-use planning

Output 2.1.1.: Participatory climate risk and vulnerability assessments conducted for upland livelihoods, incorporating vulnerable ecosystems and agro-ecological suitability at landscape level.

This output provides critical information to assist policy-makers, provincial authorities, local communities, and other key stakeholders in making well informed decisions for climate-resilient land-use planning in the AFOLU sector. These assessments will inform not only MAF, MoNRE, PAFOs, and DAFOs, but also the development and implementation of community-based local adaptation plans.

It is expected that the vulnerability and risk assessments will make use of FAO's Tool for Agroecology Performance Evaluation (TAPE)^[58]⁵³, which integrates climate resilience with multiple dimensions of development, is highly participatory, and links with decision processes. The choice of specific tool will be reconfirmed during the project's inception, following consultation with the Technical Advisory Group (TAG).

The goal of TAPE is to produce evidence on the performance of agroecological systems across the environmental, socio-cultural, economic, health/ nutrition, and governance dimensions of sustainability to support agroecological transitions at different scales, in different locations, through different timeframes, and to support context-specific policy-making on agroecology. In simplified words, the analytical framework aims at providing a diagnostic of agricultural performance across many dimensions to move beyond standard measures of productivity (e.g. yield/ ha) and better represent the benefits and tradeoffs of different agricultural systems.

The specific objectives are to:

- Build knowledge and empower producers through the collective process of producing data and evidence on their own practices;
- Support agroecological transition processes at different scales and in different locations by proposing a diagnostic of performances over time and by identifying areas of strengths/weaknesses and enabling/ disabling environment;
- Inform policy makers and development institutions by creating references on the multi-dimensional performance of agroecology and its potential to contribute to the SDGs.^[59]⁵⁴

TAPE assesses agroecological conditions and transitions on 10 core dimensions: 1. secure land tenure (or mobility for pastoralists), 2. productivity (and stability over time), 3. income (and stability over time), 4. added value, 5. exposure to pesticides, 6. dietary diversity, 7. women's empowerment, 8. youth employment, 9. agricultural biodiversity, and 10. soil health.

TAPE also accommodates additional dimensions. Subject to review and approval or no-objection by the TAG and PSC during the inception phase, this activity will augment the core TAPE dimensions with diagnostics and mapping from FAO's Self-evaluation and Holistic Assessment of Climate Resilience of Farmers and Pastoralists (SHARP) tool. SHARP assesses the resilience of agro-ecosystems on the basis of 13 indicators disaggregated by agricultural practices using portable devices, such as iPads to address the needs of smallholder farmers and pastoralists (both men and women). SHARP may thus be applied in close coordination with upscaling of climate-smart agriculture at farm level. SHARP works through a participatory survey developed for Android tablets spanning environmental, social, economic, governance, and general agricultural practices. The SHARP application produces a relative ranking of resilience priorities for each participating household. The results can then be discussed with respondents individually, communally, or in specified groups (e.g., gender-specific). Additionally, all results are uploaded online and can be used for further analysis to understand resilience priorities, trends, and determinants at higher levels of aggregation. It is possible to look at the resilience ranking holistically or in its individual components and then look deeper into the elaboration of the questions to better understand why land users (and sub-groups of users; e.g., gender-specific) responded as they did.

FAO-supported analyses^[60]⁵⁵ during the PPG phase indicate that TAPE is particularly well suited to monitoring market-relevant dimensions and integrating those dimensions within a broader context of climate resilience, agro-ecology, and rural development. During the PPG phase, FAO conducted a

regional training on TAPE[61]⁵⁶ and integrated TAPE into the Kobo platform for operational delivery in preparation for up-coming piloting in partnership with MAF-DTEAP.

During the project, TAPE (or other approach adopted under this output) activities will be closely linked both technically and operationally with the project's M&E framework, such as via the cloud-based MEASURE platform.[62]⁵⁷ Moreover, TAPE establishes a basis for post-project sustainability and durability with support from buyers who are interested in investing in progress toward sustainable production. Post-project continuation of TAPE may also be provided by public or private service providers through open bids (e.g., IRRI, ICRISAT, FarmForce, CropIn, Peterson, etc.).

The assessment reports will integrate future-oriented agro-ecological zone mapping in order to ensure that vulnerability assessments and resilience plans highlight gaps between current and expected future circumstances.

Assessments with the adopted tool(s) will be conducted per the respective operational procedures on statistically generalizable samples in the targeted communities. Assessments will be conducted at inception, mid-term, and prior to the final evaluation, though the specific modality(-ies) might change over the course of the project at the discretion of the PSC.

Additionally, this output builds upon the achievements of FAO's SAMIS project, which is developing a national AEZ mapping (potential 1-km resolution) for 2020, 2040, and 2080 under multiple IPCC scenarios. The results will include maps for different crops (e.g., rice, maize, cassava, coffee), showing potential yield and potentially harvested areas. Data will be available by the end of 2020 and uploaded in a publicly accessible online tool. SAMIS will train all DAFOs in the use of the online tool to enable improved planning and decision-making.

With FAO support, SAMIS has already begun designing the policy tools for the AEZ that will be mainstreamed and converted into policies between late 2020 and mid-2021. DALAM has also already begun preparations to integrate AEZ into its principal land-use planning approach: Participatory Forest and Agricultural Land-Use Planning, Allocation, and Management (P-FALUPAM); see Output 2.1.3. SAMIS will develop a system to integrate suitability scenarios in connection with the preparation of P-FALUPAM.

This output is closely connected with progress from SAMIS, so the precise activities will depend on the timing of operationalization of this LDCF project. The project will ensure delivery of direct biophysical decision support outputs, such as land evaluation, suitability and similarity analysis, land capability classification, and agro-ecological zoning, which are critical for transferring innovative SLM options. Similarity maps identify locations/ ecosystems where a particular SLM approach has the potential to be deployed effectively based on environmental criteria. Suitability analyses fine-tune similarity analyses with more specific data that result in classifying areas/ land as highly, moderately, or marginally suitable for a particular SLM approach. These analyses are closely linked with development and delivery of most of the outputs in Components 2 and 3 of this project.

Indicative Activities:

- ? 2.1.1.1.: Train governmental staff to conduct assessments and augment equipment, as needed.
- ? 2.1.1.2.: Conduct vulnerability assessments in targeted districts at inception, mid-term, and end of project.

? 2.1.1.3.: Integrate AEZ climate modelling as well as similarity and suitability analyses into P-FALUPAM and DALAM's land-use management plans.

Output 2.1.2.: Capacities of local institutions and district-level governmental offices to identify, incentivize, promote, and disseminate climate-smart land-use approaches and practices, and nature-based solutions[63]⁵⁸ for resilient and sustainable landscapes strengthened.

This output capacitates relevant sub-national governmental staff to integrate the CCA considerations and solutions developed under the project's other outputs (e.g., investment and financing options under Outputs 1.1.2. and 2.1.3.; packages of locally appropriate SLM options under Output 3.1.1.). Trained staff will be able to incorporate these considerations and solutions into local governance and strategies, as well as to facilitate adoption by local communities and value chains.

As such, two types of capacity development will be designed and delivered under this output; one that is more policy-oriented and one that is more practice-oriented. The more policy-oriented training strengthens the capacities of sub-national offices to incorporate CCA considerations and solutions into strategies and governance. The more practice-oriented initiative builds the capacities of governmental extension services to facilitate local communities' adoption of climate-adaptive practices (delivered via Outcome 3.1.).

Policy. Although the specific content of the more policy-oriented training will be based on the project's other relevant outputs, the training will cover topics such as:

? Fundamentals of climate change adaptation, particularly including locally specific *exposure* (current and forecast trends), *sensitivities* (common local harms associated with climatic trends and factors that exacerbate those harms), and *adaptive capacities* (local abilities to forecast, avoid, and respond to long-term trends and acute hazards);

? Accessing and interpreting AEZ mapping as well as similarity and suitability analyses;

? Interpreting, incorporating, and disseminating information from LaCSA and its bulletins (especially for PAFOs and DAFOs);

? Adaptive farming systems, particularly for SLM for sloped agriculture (managing soil health, reducing erosion, increasing soil organic content and infiltration capacity);

? Options to improve the sustainability of shifting agriculture and options to transition to other land-use patterns;

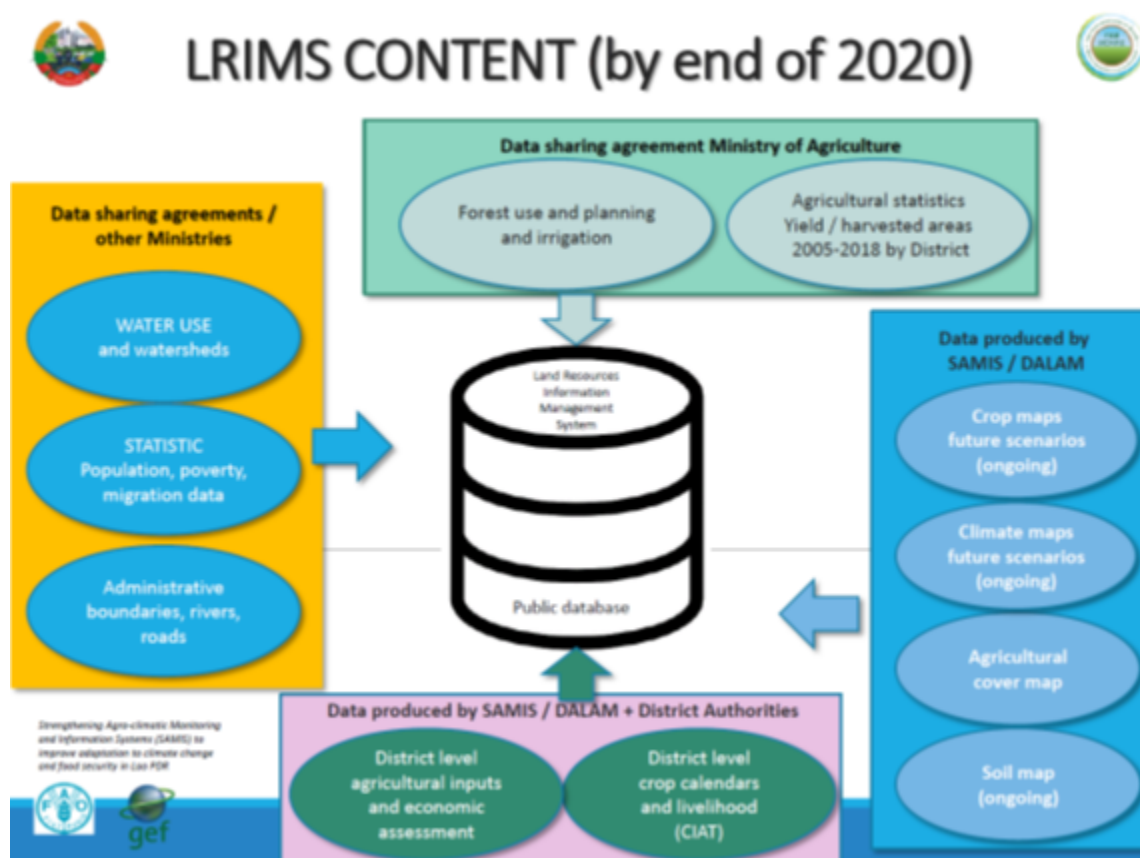
? Facilitating transitions to climate-adaptive practices and technologies for land uses and value chains (e.g., from Outputs 2.1.3. and 2.2.3.);

? Understanding barriers to local adoption and perseverance, and options to overcome or obviate those barriers (e.g., financing);

- ? Incorporating sensitivities to gender, indigenous peoples, and vulnerable groups;
- ? Laws and policies of particular relevance to incentives and enforcement;
- ? Structured guidance to respective provincial and district-level authorities on harmonizing the administration of multi-sectoral policies in locally appropriate ways, and empowerment to do so;
- ? Integration of NTFP production and forest management; and
- ? Options for financing, particularly for initial capital investments (see Outputs 2.2.3. and 3.1.1.).

Figure 12 depicts an overview of pending enhancements to the data and information frameworks available to planners, specifically for the Land Resources Information Management System (LRIMS) via the DALAM-administered SAMIS project. Capacity development for sub-national offices will ensure these achievements are fully leveraged for improved climate adaptability.

Figure 12: Pending Enhancements to the Land Resources Information Management System (LRIMS)



Source: DALAM-SAMIS

These trainings will be delivered to relevant departments (as confirmed by the PSC), including PAFOs?especially PALAM, POF, PTEAP?PICO, and LWU, as well as relevant officers from the targeted districts, at provincial discretion. Given the extent and depth of content, these trainings are expected to cover multiple days.

Practice. The more practice-oriented training will provide technical training for rural extension services in agriculture and forestry to enable them to facilitate communities' transitions to locally appropriate, gender-responsive CCA practices and climate-smart livelihoods. This initiative will strengthen the capacities of governmental extension services (Technical Service Centers?TSCs?at the district level) to support adoption of CSA through a training-of-trainers (ToTs) approach. TSC staff members will be trained to support the approaches and investments delivered under Component 3.

The aim of this initiative is not to develop a one-size-fits-all solution for all agro-ecological conditions or districts, but rather to equip local extension officers with requisite knowledge and a tool-kit of general resources that can be adapted and tailored to local needs. As such, this activity contributes significantly to the post-project durability of results by ensuring that CCA mainstreaming is an adaptive, evolving process rather than a static set of solutions.

NAFRI will harmonize its activities under this output with its other related activities (notably under 3.1.1.1.) and coordinate with other agencies involved in local consultations (notably via DAFOs and DTEAP) to ensure that local consultations capture relevant indigenous knowledge and practices for consideration for inclusion. This effort is an integrated aspect of the project's knowledge management plan.

The ToTs will not only capacitate relevant district staff to deliver FFSs, but will also equip them with a tool-kit of resources for the project's various technical interventions, such as worksheets for financially modelling transitions to different land-use packages.

Many such tools and frameworks already exist, but are not currently assembled in a ready-to-use collection of harmonized approaches that can be adapted for use in specific circumstances. For example, the tool-kit may include tools for (i) interpreting future crop-suitability assessments, (ii) facilitating adaptive value-chain planning, (iii) conducting climate-vulnerability assessments for communities, agricultural producer organizations, NTFP-management groups, value-chain actors (e.g., traders, processors, service providers), lenders, *et al.*, (iv) expanding uses of agro-meteorological products from LaCSA[64]⁵⁹, and (v) enabling CSA-related business planning for MSMEs as developed under Output 2.1.3.

These trainings and the tool-kit will be developed and delivered by NAFRI, in close coordination with relevant members of the SWG-ARD, MAF-DALAM, MAF-DOF, MAF-DoPLA, MAF-DMH, MoNRE-DCC, LWU, and MoIC, and with additional technical support from the PMU.

Indicative Activities:

2.1.2.1.: Develop policy-oriented training and materials and deliver ToTs.

2.1.2.2.: Delivery of policy-oriented training.

2.1.2.3.: Develop practice-oriented training and tool-kit.

2.1.2.4.: Delivery of practice-oriented training and tool-kit.

Output 2.1.3.: Participatory, resilient, and sustainable land-use and investment plans incorporating innovative, evidence-based, locally appropriate, gender-responsive, and climate-smart livelihood options and nature-based solutions developed and demonstrated.

This output links land-use and investment planning across multiple levels: sub-national jurisdictions (the multi-sectoral consultative process from Output 1.1.1), communities (participatory community-level land-use planning), and individuals (agricultural livelihoods). Land-use planning in Lao PDR is primarily locally driven, and is facilitated, informed, and influenced by support and incentives based on national, provincial, and district priorities. Therefore, activities under this output entail three main aspects: (i) strategic land-use and investment frameworks for the targeted provinces and districts, (ii) expansion of P-FALUPAM in villages in the targeted districts, and (iii) development of climate-adaptive agricultural livelihood options. Each is discussed in turn below.

Jurisdictional: Climate-adaptive Land-use and Investment Frameworks.

Under this output, the project will conduct the sub-national consultative processes at provincial and district levels as developed under Output 1.1.1. The jurisdictional approach used here is directly compatible with the jurisdictional approach under MAF's and FAO's GCF-supported initiative for deforestation-free agriculture. These consultations serve as a pilot for the newly designed consultative processes, the feedback and results from which will inform future iterations.

At the provincial and district levels, the consultative processes will begin with a participatory mapping of stakeholders' priorities and concerns, including locally specific barriers to adoption of climate-adaptive approaches. These are likely to begin as semi-structured, bilateral conversations, during which directed efforts will be made to ensure full participation of women and any identified vulnerable groups (e.g., landless people). Consultations with local communities will be held in local languages, and women-only consultations will also be conducted. Consultations will be held with all relevant stakeholder groups, including CSOs, producer groups, value-chain actors, financial institutions, and research institutions. DALAM and PMU staff (or others as determined by the PMU or PSC) will work with stakeholders to summarize their respective priorities, concerns, and aspirations to share with all stakeholders in preparation for plenary discussions.

The PMU will coordinate inputs from DALAM, DOF, NAFRI, MoIC, LWU, and other relevant agencies (including their provincial counterparts) to adapt packages developed under Outputs 2.1.2. and 2.2.2. for respective provinces and districts. This will yield a provisional menu of land-use and investment packages that are especially suitable to the jurisdiction's biophysical (including climatic), social, and economic context. These provisional menus will be considered and further revised during plenary discussions. Particular attention will be given to ensuring that approaches and models include and will yield direct benefits for women and vulnerable groups.

For example, a package might include a model for transitioning from (a) low-intensity shifting upland production of low-value commodity crops (e.g., rice, maize) to (b) mixed stationary upland production of high-value perennials (e.g., fruits, sacha inchi), fodder and livestock production, and value addition. Alternatively, another package might include a model for transitioning from (a) fragmented household production to (b) an allocation of community land for an agricultural land concession with contracted local employment (e.g., crop management and processing; perhaps with infrastructure investments for incentives) and separate enrichment plantings for NTFPs. Each such package requires end-to-end modelling of the value chains and the transitional process, with particular emphasis on external support for critical barriers, transitions, and vulnerabilities.

The primary aim of the provincial and district multi-stakeholder plenary consultations is to produce climate-adaptive provincial and district land-use frameworks. The goal of these frameworks is not to prescribe what individual communities will do, nor to resolve all inter-sectoral tensions, but rather to establish a shared vision for landscape-level investments for sustainable, climate-adaptive land uses (including financial viability) and the processes and criteria that will be used to resolve future related tensions.

For example, many jurisdictions would benefit from reconciling or balancing (a) pursuit of foreign direct investment through agricultural land concessions and (b) targets for increased forest cover. Such tensions can be ameliorated by establishing jurisdictional targets and criteria for selecting between different supported approaches (e.g., establishing criteria for prioritizing areas for large-scale agricultural intensification versus increased tree cover), always with heavy emphasis on principles of good governance (e.g., participatory decision-making, transparency, accountability, etc.).

Community Level: Village Land-use Planning.

Whereas national, provincial, and district-level land-use and investment frameworks identify priorities and create incentives, local communities generally lead decisions about what happens on the ground in any given location, especially given that village boundaries are contiguous in most of the country, such that where one community's land ends, the next community's land begins.

In line with provincial and district-level climate-adaptive land-use and investment plans, the project's village-level land-use planning activities will facilitate communities' voluntary integration of climate-

adaptive land-use plans in order to promote climate-resilient livelihoods. In particular, these activities expand and enhance DALAM's execution of land-use planning with the Participatory Forest and Agricultural Land-Use Planning, Allocation, and Management (P-FALUPAM) approach. (See Annex J for a comparison of previous and current land-use planning approaches in Lao PDR.)

P-FALUPAM assists local communities in creating locally appropriate land-use plans. P-FALUPAM enables the collection and analysis of data on natural resources, biodiversity, socio-economic factors, potential land uses, developmental plans, and farmers' needs. P-FALUPAM integrates remote-sensing data, GIS data, and local knowledge from communities and officials to inform the participatory development of land-use plans and zoning for agricultural production and sustainable forest management.

P-FALUPAM is well suited to the integration of AEZ data and mapping for improved land-use decision-making. The integration of AEZ into P-FALUPAM will incorporate climate-change scenarios, crop calendars, land suitability and productivity for various crops, various environmental parameters, crop water requirements, irrigation demand, and trade-offs between crops and production systems.

LUP is the framework for communities to discuss the broad-scale framework into which CSA practices and technologies^{[65]⁶⁰} will be adopted. For example, there are challenges associated with only partial adoption of fallow-to-perennial (FTP) transitions (see Output 3.1.1.) on community land if many users will continue to practice shifting cultivation (e.g., transitioning to high-value perennial tree crops on one plot while the adjacent plots are cleared every few years with fire).

Activities under this output will conduct P-FALUPAM to address such challenges and facilitate adoption of the CSA approaches (practices and technologies), as supported by investments in land uses (Output 3.1.1.) and value chains (Output 3.1.2.). For example, one opportunity is to expand locally used land-use classifications to include multi-use designations, making local land management somewhat more flexible. A major benefit of using P-FALUPAM as the point of entry for local investments is that it begins by considering landscape-scale challenges and opportunities that individual land-users would not likely contemplate or address (e.g., common-pool forestry resources, watershed management), and empowers communities to coordinate their smaller-scale activities accordingly. This project also ensures that P-FALUPAM integrates market incentives and considerations.

Communities will be capacitated and supported in enacting these land-use and investment plans via technical assistance and investments under Output 3.1.1., as well as support to related value chains under Output 3.1.2.

Farm Level: Climate-adaptive Agricultural Livelihood Options.

During PPG consultations, many farmers stated that they lacked sufficient information to make informed decisions about whether and how to diversify production or livelihoods. Therefore, the project will combine the market opportunities identified under Output 2.2.2. with NAFRI's guidance on much needed sustainable land management (SLM) practices and LWU's guidance on gender-sensitive options for agricultural livelihoods to develop a menu of farm-level business plans for locally appropriate, climate-resilient diversification options.

These business plans will provide structured, comparable overviews of production models, enabling farmers to see what adoption of different practices would entail. The plans will include, for example, input requirements (e.g., seed, fertilizer, water), land requirements, availability of inputs, regional suitability, market demand, value-chain overview, suggested minimum production (in order to determine the critical mass of producers for economies of scale), labor requirements, capital requirements, necessary or suggested equipment, opportunities for value addition, suitability for market-timing (e.g., drying, storage), by-product markets, gender-specific considerations, opportunities for particularly vulnerable groups, and sources of technical and financial support. Critical considerations for each plan (e.g., labor requirements, input costs, farm-gate prices) will include estimated values for the 20th, 50th, and 80th percentiles^[66]⁶¹, so that farmers can better understand the variability to expect for different options in bad, normal, and good years.

As noted above, the project will focus not only on traditionally cultivated agricultural crops, but also on NTFPs that are identified as more climate resilient and that can be integrated easily into CSA approaches adopted on surrounding agricultural lands. Consultations during the PPG phase identified numerous NTFPs with different suitabilities and trade-offs in different contexts, including cardamom, broom grass, benzoin, galangal (roots and fruits), pepper wood, bitter bamboo shoots, paper mulberry, wild taro, rattan shoots, riverweed, mushrooms, tea (especially wild-harvested 'ancient' tea and 'arbor' tea), agar, medicinal plants (e.g., black ginger), local varieties of bananas, poles, and fodder. Climate-resilient and multi-use NTFPs that supply a diverse range of goods for commercial as well as domestic use will also be a focus for restoration efforts of degraded forest. This will provide local communities with additional livelihood options while at the same time increasing the potential of the forested areas around farmland communities to provide other valuable ecosystem services such as water provision and soil stabilization.

These options will be delivered at farm level via Farmer Field Schools (FFS) and supported via direct project investments (via Community-led Resilience Investment Packages (CRIPs) under Output 3.1.1.

In many communities, local mimicry is the most common basis for such decisions,^[67]⁶² leading to boom-and-bust cycles and homogenized risk profiles. In order to overcome this obstacle to diversification, FFS packages for on-farm diversification will include, by default, a module for business skills (e.g., covering financial literacy, credit, contract farming, record-keeping, business planning, organizing producer groups).

Indicative Activities:

- ? 2.1.3.1.: Conduct provincial participatory stakeholder mappings in Luang Prabang and Houaphan.
- ? 2.1.3.2.: Conduct participatory stakeholder mappings in targeted districts.

⁶¹ [\[66\]](#)

⁶² [\[67\]](#)

- ? 2.1.3.3.: Draft provisional menus of land-use and investment packages for targeted provinces and districts.
- ? 2.1.3.4.: Host provincial and district multi-stakeholder plenary consultations.
- ? 2.1.3.5.: Produce climate-adaptive provincial and district land-use frameworks.
- ? 2.1.3.6.: Conduct participatory land-use planning in targeted communities, integrating AEZ and CSA for strengthened climate resilience.
- ? 2.1.3.7.: Develop farm-level business models for supported practices.

Outcome 2.2.: Innovative and resilient agricultural value-chain networks and financing options established to adopt and scale up climate-smart practices.

Achievement of this outcome will be indicated by:

- 2.2.a. Networks mapped and coordinated for six agricultural value chains in Luang Prabang and Houaphan
- 2.2.b. Climate-vulnerability and market-opportunity assessments conducted for six value chains in Luang Prabang and Houaphan
- 2.2.c. At least 10 semi-annual value-chain network meetings hosted
- 2.2.d. Investment action plans for at least 3 agricultural value chains piloted and endorsed by MAF and MoIC
- 2.2.e. 60 extension staff (20% female) trained as trainers for value-chain network coordination
- 2.2.f. 1,200 community members (30% female) trained for value-chain network coordination

Output 2.2.1.: Resilient and sustainable agricultural value-chain networks mapped and established in two provinces of the northern uplands.

This output addresses some of the critical shortcomings in the connectivity and organization in agricultural value chains by building value-chain-based networks. These networks will facilitate vertical linkages between stages of the value chains to improve the various actors' understandings of the needs and constraints of upstream and downstream actors. These networks will also build horizontal coordination between different actors at the same stage in the value chain to improve, for example, coordination among producers for improved marketing, contracting, reliability (e.g., quantities), and transportation. Similarly, coordination among buyers and processors can establish standards (at least informally) for quality, delivery specifications, and food safety. Coordination among retailers can improve compliance with mandatory price-labelling. For all groups, coordination will help identify opportunities for improved value-chain efficiencies, streamlined governmental regulations, demand for research and technology, etc.

In some areas, value-chain actors have already organized to some degree, though these networks are usually horizontal. For example, the Lao Farmers Network (LFN)[68]⁶³ is a network of 25 farmer organizations (more than 2,000 members) from 11 provinces that strengthens cooperation among smallholders, particularly through farmer-to-farmer communication, but also via technical support to farmer organizations. Additionally, many farmers have already self-organized into formal and informal contact groups, such as via WhatsApp. Where possible, the project-supported networks will build on and integrate with these existing networks.

Each project-supported network will have two operational components. First, the project will arrange and support semi-annual meetings of the value-chain actors (or their representatives), hosted on a rotational basis in different parts of the province, as practicable. Second, the project will facilitate establishment of a basic governance and coordination function for each network. These network coordination groups will take ownership of the coordination for the respective networks?e.g., maintaining membership contact information, acting as a point of contact for governmental agencies or outside organizations, ensuring continuation of meetings, identifying evolving issues in the network to ensure continued relevance, etc. The project will capacitate these network coordination groups to ensure inclusivity and good governance. The project will also support establishment of communication systems for the networks, bookkeeping, etc. as well as a tool-kit, including, for example, tools to: assess resilience in the value chain, identify inefficiencies in the value chain, standardize contracts, resolve disputes, organize transportation, improve marketing, improve access to financing, etc.

At least six such networks will be established in Luang Prabang and Houphane (three per province) for broadly defined agricultural value chains (more broadly defined than the product-specific chains covered under Output 2.2.2.), given that many value chains overlap at different segments and nodes of the chain. Provisionally--pending review and approval at inception workshop and the first PSC meeting?those value chains are: coffee, tea, small livestock, NTFPs (including bamboo)[69]⁶⁴, and horticultural crops (e.g., herbs, vegetables, chilis).

In order to identify all relevant actors and stakeholders, and to understand the ways in which they interact, each value chain will first be mapped and any existing formal or informal networks will be identified. These mappings will include suppliers, financiers/ investors, land owners, land users/ producers, laborers, equipment providers/ operators, private-sector technical assistance, local traders, cross-border traders, collectors/ transporters, primary and secondary processors, storers, packagers, marketers, brokers, associations, retailers, etc., as well as interactions with governmental agencies.

The PMU will partner with relevant NGOs to map the value chains for selected agricultural products. Several NGOs and CSOs?e.g., the Bamboo and NTFP Development Association (BNDA), Groupe de Recherches et d'Echanges Technologiques (GRET), and Village Focus International (VFI)?have long-standing, deep relationships in various agricultural value chains. For example, BNDA (a CSO offshoot from GRET) is extensively integrated into local and provincial bamboo and NTFP value chains, and benefits from staff who are very familiar with local bamboo varieties and speak all local languages

in their targeted areas (including the northern uplands). GRET and BNDA supported development of Houaphan's Provincial Bamboo Strategy 2016 ? 2020.

The PMU will support DTEAP in developing the training materials and tool-kit. DTEAP will conduct trainings of the network coordination groups.

Indicative Activities:

? 2.2.1.1.: Map networks for six agricultural value chains.

? 2.2.1.2.: Host semi-annual network meetings (starting year 2).

? 2.2.1.3.: Develop training materials and tool-kit, and conduct ToTs for value-chain network coordination groups.

? 2.2.1.4.: Conduct trainings for value-chain network coordination groups.

Output 2.2.2.: Inclusive climate-resilience and market-opportunity assessments for resilient and sustainable agricultural value chains, including options for improvement of periodic quantity- and price-planning activities through multi-sectoral collaboration.

This output builds on the value-chain mapping from Output 2.2.1. and creates a basis for establishing investment action plans under Output 2.2.3. Agricultural value chains for the following products will be mapped (in terms of physical and financial flows), including an assessment of climate vulnerabilities (including risk-bearing), economic efficiencies (e.g., non-value-adding middle steps, informational efficiency, production losses, contract enforcement, etc.), marginal pricing, and constraints (e.g., monopolies, monopsonies, infrastructure): (i) shade-grown Arabica coffee, (ii) tea (including wild), (iii) meat chickens, (iv) bamboo[70]⁶⁵, (v) NTFPs (provisionally: broom grass and river weed)[71]⁶⁶, [72]⁶⁷, (vi) sacha inchi, (vii) alliums (onion, shallot, and garlic), (viii) elephant foot yam, (ix) sweet potato, and (x) herbs (e.g., mint, basil, coriander, lemongrass). This list of products is provisional and will be reviewed at the inception workshop and amended (as needed) and approved by the PSC at the first PSC meeting. For example, it may be determined that such assessments for meat goats (especially for villages near the Vietnam border)[73]⁶⁸, border-planting options (e.g., roselle), or other high-value horticultural crops (e.g., chilis) should be included. More products will be assessed under this output than may be supported directly via other outputs on the assumption that assessments will indicate that for some products, increased investment would be inefficient or inadvisable at this time.

These value chains will be assessed along two primary factors: (i) climate vulnerability and associated opportunities for improvement and (ii) opportunities for adjustments and investments that would

efficiently improve local climate resilience in terms of livelihoods (level and stability), ecological health (e.g., improved soil health, reduced erosion, increased forest cover), and social capital (e.g., good governance, trust-building systems, conflict-resolution). Critically, in the context of LDCF support, the improved economic performance of these value chains is of relevance to the extent that it improves the climate resilience and adaptability of local communities and the landscapes they manage.

One aspect of these systems that will be analyzed for opportunities to improve market efficiencies and functionality is the practice of periodic quantity- and price-planning activities, particularly as they might coordinate with institutionalized multi-sectoral collaboration facilitated by Outputs 1.1.1. and 2.2.1. Such planning would benefit greatly from increased harmonization of methods and standards between districts, as well as improved information for strategic planning and decision-making. For example, there is likely an opportunity to improve market functionality and governance of NTFP production and harvests by increasing the transparency and accessibility of information about how national quotas have been distributed to provinces and districts, on what basis, and to which buyers or producers. Likewise, there are on-going opportunities to increase price discovery and compliance with pricing and price-labelling, particularly for wholesalers and retailers.

Indicative Activities:

? 2.2.2.1.: Assess selected agricultural value chains for climate resilience and market opportunities.

Output 2.2.3.: Investment action plans for resilient and sustainable value chains incorporating periodic pricing guidance, financing options, incentives, models, and tools to encourage adoption and up-scaling of climate-smart practices developed and piloted.

Based on Output 2.2.2., this output translates the financing models developed under Output 1.1.2. into specific investment action plans for selected value chains. To do this, this output replicates the sub-national consultative process from Output 2.1.3. Therefore, if the stakeholders are sufficiently similar, the two consultative processes (i.e., under Outputs 2.1.3. and 2.2.3.) could be combined. That arrangement would be preferable not only because it would be more cost- and time-efficient, but more importantly because it maximizes the integration between land-use and value-chain investment planning. It is expected that these sub-national consultations will be hosted by MoIC's Department of Trade Promotion and Product Development (TPPD).

Under this output, the project will draft, vet, and revise innovative blended investment packages for at least 5 agricultural value chains. These investment packages will outline specific opportunities for various value-chain actors to invest (via financing, labor, equipment, etc.) in more climate-adaptive agricultural value chains. The project will pilot as many investment packages as practicable, though this will be subject to uptake. Based on evolving experiences from the pilots, the project will refine and combine the investment packages into investment action plans for selected value chains, to be adopted and promoted by MAF, MoIC, and their subsidiaries.

Indicative Activities:

? 2.2.3.1.: Draft provisional investment packages for targeted value chains.

? 2.2.3.2.: Host provincial and district multi-stakeholder plenary consultations regarding drafted value-chain investment packages.

? 2.2.3.3.: Produce full supportive tools and materials to pilot revised value-chain investment packages.

? 2.2.3.4.: Pilot value-chain investment packages.

? 2.2.3.5.: Gain endorsement from MAF and MoIC for investment action plans for selected value chains.

Component 3: Climate-smart technologies and innovations deployed in two provinces of the northern uplands.

Outcome 3.1.: Climate-smart livelihood practices scaled up at landscape level to support resilient and sustainable rural landscapes that improve food security and nutrition.

This component leverages the capacities and enacts the plans developed in Components 1 and 2 through direct investments. The outcome will be that agricultural communities, landscapes, and value chains will be significantly more climate adaptive.

Achievement of this outcome will be indicated by:

3.1.a. 40 extension staff (20% female) trained to deliver FFS

3.1.b. 4,000 community members (30% female) trained in climate-adaptive land uses

3.1.c. 22,300 people (50% female) benefitting from more climate-resilient land-use practices

3.1.d. 14,900 people (50% female) benefitting from diversified livelihoods

3.1.e. 32,300 ha of agricultural land under climate-smart land-use practices

3.1.f. 40,300 ha of degraded forest converted to secondary or open forest

3.1.g. An average of 600,000 LAK in increased annual net income for participating households

3.1.h. 240 communities with local adaptation plans

3.1.i. 44 local infrastructures improved or installed to increase local climate adaptability

3.1.j. 11,000 beneficiaries (50% female) from community-led resilience investment packages (CRIPs)

3.1.k. 15 investments for increased climate adaptability of agricultural value chains

Output 3.1.1.: Climate-smart land-use approaches and practices and nature-based solutions for resilient and sustainable landscapes deployed.

This output leverages capacities developed under Output 2.1.2. to deliver plans from Output 2.1.3. Community-level capacity development will be conducted primarily via the Farmer Field School (FFS) approach^[74]⁶⁹ and will be supported by project-funded investments via Community-led Resilience Investment Packages (CRIPs).

Farmer Field Schools.

FFS is a well regarded and widely supported approach in Lao PDR, with a substantial track record of high community engagement and durable results. FFS is an interactive and participatory approach that emphasizes “learning by doing” in order to increase participants’ understanding of agro-ecosystems and locally appropriate technologies and practices, leading to production systems that are more resilient in local conditions and that more efficiently utilize available resources.

FFS participants meet regularly to engage in hands-on learning that combines training with community-led experimentation to identify best practices in local contexts. FFSs thereby not only increase participants’ knowledge of local circumstances and available solutions, but also—and far more importantly—empower individuals and communities to adapt to emerging circumstances.

FFS is a highly flexible approach, and the project will consider incorporating recent advances in relevant FFS variations, such as Farmer Market Schools (FMS)^[75]⁷⁰. In an FMS, smallholder farmers gain knowledge and skills to explore markets, identify market opportunities, and make well informed business-related decisions.

FFS is highly conducive to a modular approach, whereby various topics can be plugged in to the FFS delivery mechanism. The FFS content will comprise a core module^[76]⁷¹ plus additional modules. The core module will focus on Climate Smart Agriculture (CSA) and contain integrated content on gender-related risks, considerations, and opportunities. CSA has three objectives: (i) sustainably increasing agricultural productivity and livelihoods; (ii) adapting and building resilience to climate change; and (iii) reducing or removing greenhouse gas emissions when possible.^[77]⁷² LDCF support will focus on benefits to livelihoods and climate adaptability, though many of the project’s activities will also yield GHG mitigation co-benefits.

Based on the core FFS CSA module, participating communities will understand their exposure, sensitivities, and adaptive capacities with respect to current and anticipated climatic trends, as well as options for strengthening both threat-specific and general resilience. The FFS will enable communities

to create local adaptation plans (LAPs). Through a participatory process, each participating district^[78]⁷³ will also select a package of additional FFS modules from a menu of options. Examples of additional modules are described below. All FFS materials will be available and presented in Lao as well as in other local languages as appropriate.

FFS modules will complement the tangible investments from community-led resilience investment packages (CRIPs; discussed below) by strengthening corresponding capacities. The content of the FFS modules will be developed in consultation with the SWG-ARD. Via a participatory process, communities will select^[79]⁷⁴ from a menu of packages with locally appropriate approaches for building climate resilience, including the core module (CSA and gender) plus optional modules such as: conservation agriculture for sloped production, water-saving practices and technologies, integrated pest management (IPM), integrated nutrient management (INM), land-forming (e.g., fodder strips on contour, berms on contour), agroforestry, NTFP production, enrichment plantings, technologies to reduce post-harvest losses, and small-scale local infrastructure for climate resilience (e.g., water harvesting).

Based on farm-level business models developed under Output 2.2.3., FFS modules will also support livelihood diversification. FFS modules to capacitate communities for diversification of agricultural production and livelihoods will cover, for example, crop diversification (e.g., sweet potato, elephant-foot yam, garlic, shallot, onion), dry-season crops, integrated farming systems, vegetable/ market gardens, horticulture (including, as locally appropriate, agroforestry options), perimeter plantings, strip/ alley cropping, inter-cropping, livestock integration (especially dual-purpose or layer chickens), off-season cultivation, and multi-use plantings (e.g., feed, fodder, fuel, framing, etc.).^[80]⁷⁵ Analyses of financial returns from agricultural and NRM practices indicate that the highest rates of return are associated with investments in agroforestry systems (financial rate of return per ha over 10 years = 42.1%), fodder production systems (33.2%), cash-crop production systems as alternatives to rice and maize (26.5%), livestock production systems (22.0%), and sustainable forest management (21.8%).^[81]⁷⁶ Production-diversification options will build on SAMIS's AEZ and crop-suitability modelling in order to ensure that the project supports options that are resilient for both current and projected climate trends. An additional supporting module may also be selected (e.g., for agro-meteorological monitoring, local IWRM, etc.).

An FFS module (menu option) will also be developed for NTFP management, in line with identified opportunities under Output 2.1.2. Numerous opportunities exist for communities to benefit from diversified enrichment plantings of NTFPs, such as cardamom, broom grass, benzoin, galangal (roots and fruits), pepper wood, bitter bamboo shoots, paper mulberry, wild taro, rattan shoots, riverweed, mushrooms, tea (especially wild-harvested 'ancient' tea and 'arbor' tea), agar, medicinal plants (e.g., black ginger), local varieties of bananas, poles, and fodder.

FFS content will contain opportunities that are particularly suited to adoption by women, women-led households, and the elderly, as well as locally identified vulnerable groups. In alignment with Output 2.2.3., proposed business/ adoption models will be designed to facilitate different levels and versions of adoption, such as non-competitive, partial, phased, tentative, or occasional adoption. The plans will provide options for transitions to various end states. For example, home gardening (e.g., leafy vegetables, tomato, herbs, cucumber), perimeter plantings, and dry season cropping provide means of diversification that do not compete with existing land uses. Alternatively, alley cropping or inter-

cropping may facilitate transition to agroforestry, for example. Seasonal rotation and trial plantings (i.e., covering only a portion of available land) are options for partial adoption, particularly on permanent agricultural plots.

Diversification options will be best suited to communities for which future-oriented AEZ and crop-suitability maps indicate that resilience may require some degree of transition/ transformation in production (versus absorption and adaptation). Therefore, PAFOs will prioritize for these packages those communities where climate change and other factors may significantly reduce suitability for current production methods (e.g., requiring greater use of inputs in order to maintain production, lower suitability due to unsustainably rising labor costs, etc.), such that activities under this output will enable smoother, phased, deliberate transitions. However, the selection of appropriate FFS packages will remain at the discretion of local communities.[82]⁷⁷

Because production transitions often rely on reaching a critical mass of producers in order to obtain minimum economies of scale (e.g., for inputs, suppliers, services, buyers, capital investments, technical assistance, contracts, bargaining), activities under this output will coordinate closely with activities under Output 3.1.2. to ensure that market-oriented diversification (vs. subsistence) is appropriately linked with relevant value chains, upstream and downstream.

Community-led Resilience Investment Packages (CRIPs).

Additionally, activities under this output will build on models developed under Output 2.2.3. to provide tangible investments that increase the climate resilience of upland agricultural production systems and communities in targeted provinces in line with jurisdictional investment plans. These investments complement and correspond to the capacity-development activities in Component 2 and will preferentially leverage related value-chain investments under Output 3.1.2.

The project will enable communities to magnify and capitalize on the capacities and momentum of the capacity-development activities above (e.g., farmer field schools) by supporting community-led resilience investment packages (CRIPs) for certain outcomes in selected communities. CRIPs are packages of funding, technical assistance, and materials to support tangible investments in community-determined resilience priorities (e.g., earthworks for reduced erosion, meeting house for community meetings, micro-irrigation, etc.). Communities may submit proposals for CRIP funding in line with criteria established to ensure durable, equitable increases in local resilience. To qualify, communities must create a local adaptation plan (LAP), to which the CRIP proposal must contribute.

Image 7 depicts multiple benefits from a single community investment in a small-scale water capture, storage, and irrigation system.

Image 7: Small-scale Water Storage and Irrigation Infrastructure Headworks



Storage Tank



School Lunches Cooked with Piped Water



School Garden



School Wash Station



Table 5: Approximate Costs of Example Resilient Community Infrastructures

Infrastructure Description	Approximate Cost[83] ¹⁸	
	LAK	USD

Small-scale surface water headworks, pump, piping (~300 m), storage tank, gravity distribution to 4 water points	90,000,000	10,000
Community meeting house and storage facility	40,000,000	4,500
Ground water bore hole (depends on depth and substrate)	30,000,000	3,300
Basic greenhouse (clear plastic on pole construction; ~7 x 30 m)	8,000,000	900

Image 8: Covered Market Gardens in Houaphan Province



CRIP funding will preferentially rely on local labor and supplies, ensuring that (i) project funds maximally benefit local communities and (ii) local communities retain access to the necessary skills and sources for post-project operation, maintenance, replication, and up-scaling. CRIP funding will also preferentially support projects for which local communities cofinance the investment, such as by supplying wage labor at a discounted rate compared to a set project-wide benchmark (i.e., such that the difference between the benchmark and concessional wages counts toward community cofinancing).^{[84]⁷⁹} Linking CRIP funds to local adaptation plans and cofinancing ensures that agricultural communities' climate-resilience priorities are meaningfully mainstreamed, funded, and addressed. Additionally, the CRIP model ensures high-quality delivery, because communities cofinance the investments and approve payments from their CRIP funds^{[85]⁸⁰}, which also ensures transparency. Therefore, suppliers are accountable to the community.^{[86]⁸¹}

CRIPs will complement FFS modules to increase the adoption of technologies and practices for climate-resilient livelihoods and improved management of water, soil, nutrients, forest resources, and ecological services. Nature-based solutions will be encouraged where feasible, such as the use of companion plants in ecological engineering schemes to support natural enemies and reduce pesticide needs, thereby reducing the ecological chemical load as well as input costs, labor requirements, and health risks while also increasing the biophysical absorptive capacity for novel pests.

Agro-ecologically focused packages will be particularly relevant to communities for which resilience may be built most efficiently by increasing absorptive and adaptive capacities rather than by facilitating transitions/ transformations. For example, some communities might be reluctant to diversify away

from commodity production, especially for upland rice. In those cases, production practices can still be significantly improved to increase climate resilience, such as through the use of contour bunds, drought-tolerant varieties, perimeter plantings, IPM, INM, inter-cropping, alley cropping, mulching, cover-cropping, etc.

CRIPs will also support livelihood diversification in alignment with identified opportunities from Output 2.1.3. and corresponding FFS modules. Diversification of production and livelihoods reduces exposure and sensitivity to various shocks, thus building both threat-specific and general resilience. Diversification also increases capacities for absorption, adaptation, and transformation in response to shocks and slow-onset disasters (both of which result from climate change).

For example, shifting agriculture poses an opportunity for farmers to transition to other forms of production that have lower input costs, lower labor requirements, lower erosion, better buffering of precipitation, higher economic returns, more stable production, lower exposure to commodity price fluctuations, better buffering against novel pests and diseases, lower sensitivity to climate change, and better alignment with long-term climate forecasts. One mechanism for this transition is a fallow-to-perennial (FTP) transition. Under traditional methods of shifting upland agricultural production in northern Lao PDR (swidden), farmers (i) clear land from a preceding fallow period by slashing the area, allowing the slash to dry, then burning it,^{[87]⁸²} (ii) planting, managing, and harvesting an annual crop (e.g., rice, dent corn, Job's tears), and (iii) abandoning the land to lie fallow for (typically) three to eight years.^{[88]⁸³}

Although a common barrier to transitioning from annual to perennial crops is the opportunity cost of the transitional period (e.g., losing five years of annual crop production waiting for mango or avocado trees to bear marketable fruit), shifting agriculture has no such opportunity cost, as the farmers already leave the area fallow and unproductive for multiple years. Thus, an FTP transition could entail (i) growing and harvesting a traditional annual crop, (ii) planting a perennial crop, (iii) occasionally returning to thin or prune the perennial plants, and (iv) returning on the normal rotation to harvest the perennial crop. The initial labor to plant the perennial crop is less than the labor to clear land after the typical fallow period, and once the perennial crop is productive, labor is only required for harvesting and some crop management—less than the combined labor for annual crops (clearing, planting, managing, and harvesting). An associated CRIP could, for example, fund concessional wage labor, equipment, and inputs to plant a perennial crop in this FTP approach. For example, for a community transitioning (at least partially) to sachi inchi production, a CRIP might provide poles, wires, and other production infrastructure, which could be combined with additional investments under Output 2.2.3. in support of the associated value chain.

Measures from TAPE (see Output 4.1.1.) will structure and provide feedback on the efficacy of these approaches and will help decision-makers understand and respond to linkages between on-farm practices and different dimensions of resilience (e.g., economic, biophysical).

Indicative Activities:

- ? 3.1.1.1.: Develop relevant FFS packages, including TOTs and in local languages where appropriate.
- ? 3.1.1.2.: Deliver the TOTs and TOT refreshers.
- ? 3.1.1.3.: Deliver FFS packages and produce local adaptation plans.
- ? 3.1.1.4.: Establish relevant CRIP criteria and procedures.
- ? 3.1.1.5.: Select, fund, and support CRIPs.

Output 3.1.2.: Investments for resilient and sustainable value chains to encourage adoption and up-scaling of climate-smart practices deployed.

This output provides targeted co-financing of the investment action plans developed under Output 2.2.3. Building on the value-chain networks established under Output 2.2.1., the project will work with various value-chain actors to identify opportunities to leverage project-funded grants for increased climate-adaptability in selected agricultural value chains. Whereas activities under Output 3.1.1. (including CRIPs) are targeted at practices and technologies in support of sustainable land management (e.g., associated with production), Output 3.1.2. specifically targets related value-chain investments (i.e., beyond production). The project has flexibility to provide this support in a variety of innovative ways, such as are anticipated from Output 2.2.3. The most straightforward of these would be as a small-grant program, especially to complement FFA technical assistance (TA) and CRIPs.

Indicative Activities:

? 3.1.2.1.: Select, fund, and support outstanding value-chain investments.

Component 4: Monitoring and evaluation, project communication, and lesson learning

This component ensures that the project's monitoring and evaluation mechanisms, communications, and lessons integrate with and contribute to broader knowledge management systems. Consequently, all stakeholders will be able to make the best uses of the project's achievements and best practices, thereby facilitating the long-term durability and scaling-up of results.

That is, this component ensures that stakeholders will clearly understand the successes, misses, and best practices from the project's innovative CCA approaches so that these approaches can be further adapted, supported, and adopted for up-scaled climate resilience. Stakeholders will benefit from knowledge management approaches and technologies that link (i) the project's progress and results (tracked via the project's M&E plan) with (ii) stakeholders' broader and post-project decision processes.

Outcome 4.1.: Project monitored and evaluated, information disseminated, and lessons from project implementation, progress monitoring, review, and evaluations codified and shared.

Achievement of this outcome will be indicated by:

- 4.1.a. Integrated knowledge-management system (KMS) established with layered reporting
- 4.1.b. Mid-term evaluation completed
- 4.1.c. Final evaluation completed
- 4.1.d. 3 automatic weather stations (AWSs) installed
- 4.1.e. 770,300 people (50% female) benefitting from improved agro-meteorological information
- 4.1.f. 80 governmental staff (25% female) trained for integration of AWSs

Output 4.1.1.: A gender-sensitive monitoring and evaluation system developed, strengthening decision-making for CCA in the agricultural and NRM sectors.

To produce this output, the project will (i) deliver the project's monitoring and evaluation (M&E) plan, (ii) integrate the project's M&E mechanisms with a knowledge management system that collates layered reporting outputs from TAPE, FAO's adaptation indicators, and Sustainable Development Goals (SDGs), and (iii) expand automatic meteorological monitoring to fill a critical knowledge gap for climate-related decision processes in the northern uplands.

Activities under this output enable well informed management of the project and facilitate integration with stakeholders' broader knowledge management systems and decision processes. This output will also expand the evidential basis for the integration of market-based and ecosystem-based approaches to building climatic resilience in agriculture and NRM, particularly at landscape scale.

The project's knowledge management approach will harmonize and integrate across resilience concepts, measures, levels, geographies, and interventions. During implementation, monitoring systems will capture adoption of on-farm practices through FFS feedback combined with tracking of progress on broad resilience dimensions (via TAPE; see Output 2.1.1.).

As farm-level interventions are refined, the project will link activities with corresponding CSA indicators (e.g., a CSA indicator index approach^[89]⁸⁴) to track provincial and local progress on adoption and uptake, including readiness, process, outcome, and impact indicators. Two candidate frameworks for CSA indicators have been provisionally identified. First, FAO's climate adaptation tracking tool provides a technical framework for sector-specific resilience. This tool has the advantage of pragmatic expediency, because it can combine publicly available datasets with field data. Relative weightings can also be customized to reflect stakeholders' priorities. This tool was piloted in the site-selection process for this project (see Annex L). Second, FAO's TAPE provides a mechanism to link the project's M&E with broader national and sub-national KM systems and provides a structure for linking multiple dimensions of climate resilience (e.g., economic, social, ecological).

The project will develop a cloud-based KMS and app-based data collection system to collect and process farm-level and other data for monitoring and reporting against GEF-7 indicators, SDGs, and other relevant reporting frameworks. Because the apps will also geo-tag and time-stamp the data at the point of data collection, decision-makers will also be able to filter or extract spatially specific datasets, potentially on a wide range of variables of interest, such as soil quality, pollution, groundwater conditions, and biodiversity.

TAPE may be combined with additional frameworks (e.g., FAO's SHARP) for operational delivery on a single cloud-based platform, such as ICRISAT's MEASURE. Although FAO is piloting TAPE in Lao PDR on the Kobo platform (as described above), FAO has been working with ICRISAT to develop a MEASURE-based platform for several related regional projects (especially associated with SRLI, FOLUR, and LDCF) in order to facilitate data comparability and improved regional coordination and learning. In short, decision-makers will be able to see incoming evidence on how the project's market-based incentives interact with an agroecological approach to resilience as captured via TAPE. The KMS will enable decision-makers to understand the respective benefits and trade-offs in a geographically specific way. This multi-facted, multi-level, integrated approach will allow decision-makers a detailed sense of how best to ensure continuous improvement (i.e., what is working, what isn't, and what the multivariate effects are) and what to share as best practices.

The integrated system will produce several benefits. First, it will establish a knowledge base for actors at different levels to understand whether and how the project's interventions are contributing to farming system outcomes at different levels. Second, it will allow decision makers at different

⁸⁴ <https://www.fao.org/3/ah0302e/ah0302e.pdf>

levels?e.g., farmers, extension workers, DAFOs, PAFOs at AEZ/ landscape level, MAF and MoNRE at national level, etc.?to access information relevant to their respective roles and thereby develop an understanding of system risks and vulnerabilities as well as the effectiveness of different measures over time. Third, it will provide a feedback mechanism and adaptive learning tool that can allow for periodic input from technical experts to engage with beneficiaries at different levels to suggest different measures and alternative approaches to improve system performance.

For example, a governmental official who has been trained to collect data for monitoring via TAPE could, under the project scenario, enter collected data into a customized, app-based collection module that is directly linked to the ICRISAT-designed database, from which that information could then be processed to inform users at national levels who want to understand how projects are contributing to GEF-7 LDCF program indicators, SDGs, NDC targets, NC CCA targets, etc. This process would be automated in the system once established. This general approach has been modelled via the Integrated Soil Crop System Management (ISSM) program in China.^{[90]⁸⁵}

This output will also fill a critical knowledge gap for CCA in the northern uplands by directly investing in expansion of agro-meteorological capabilities as part of Laos Climate Services for Agriculture (LaCSA)^{[91]⁸⁶}, which is led by MoNRE's Department of Meteorology and Hydrology (DMH) in collaboration with FAO. The project will support the installation of three automatic weather stations, which will coordinate with support for trainings of trainers for LaCSA, and incorporate LaCSA bulletins in community engagements (e.g., FFSs).

Luang Prabang currently has only two functional automatic weather stations, one installed by the World Bank in 2016 and one by SAMIS in mid-2020 in the district of Xieng Ngune, Pakwead. Additionally, there is one manual station, which has been operational for approximately 20 years and is insufficient to cover the spatial variability of the province's weather system. Another station was installed by the SAMIS project and integrated into LaCSA in June 2020. Given the province's dimensions, it would be advisable to add at least one station in the northern part of the province to ensure proper down-scaling.

Similarly, Houaphan has only one functional automatic weather station, which was installed by World Bank in 2016. Additionally, Houaphan likewise also has a single manual station, which has been operational for approximately 20 years. At least two additional automatic weather stations are necessary to ensure proper down-scaling in the province. This project will support the installation of one additional automatic weather station in Luang Prabang and two in Houaphan.

Indicative Activities:

- ? 4.1.1.1.: Develop and deploy a knowledge management system that facilitates execution of the project's monitoring and evaluation plan.
- ? 4.1.1.2.: Conduct the project's Mid-term Evaluation.
- ? 4.1.1.3.: Conduct the project's Final Evaluation.
- ? 4.1.1.4.: Install and integrate three automatic weather stations (AWSs).
- ? 4.1.1.5.: Execute the project's monitoring and evaluation plan.

Output 4.1.2.: Communication and knowledge-management strategy, including outreach programs and local knowledge-sharing and learning networks on climate adaptation and resilience, developed and implemented.

Activities under this output build on the networks developed under Outputs 1.1.1. and 2.2.1. to facilitate effective coordination among stakeholders, ensure on-going stakeholder engagement, and distill and disseminate lessons learned.

The project's stakeholder engagement plan will be updated and further elaborated during the inception phase in order to ensure appropriate inclusion of relevant stakeholders (including governmental agencies, academic/ research institutions, private-sector actors, local communities, vulnerable groups, women, CSOs, NGOs, and international organizations). As part of the stakeholder engagement plan, activities will be conducted in order to monitor and address emergent issues related to gender equity and vulnerable groups. The stakeholder engagement plan aligns with and facilitates execution of the gender action plan. The stakeholder engagement plan will also ensure that the project complies with guidance on Free Prior Informed Consent by, *inter alia*, documenting participating communities' early and on-going engagement and consent.

Activities under this output will also update and execute the project's communication plan, which provides transparency and ensures that all stakeholders are aware of the project's progress and achievements. The communication plan includes establishment and maintenance of a project website, which will be hosted on MAF's web domain and integrate with relevant platforms hosted by MAF, MoNRE, and other stakeholders. The website will provide regular updates on the project's partnerships, operations, progress, achievements, tools, publications, plans, and opportunities for public engagement. The website will also contain links to the project's grievance mechanisms. Relevant tools, lessons, documentation, and other communications will be produced via appropriate channels, (e.g., videos, fact-sheets, brochures, flyers, signage, policy briefs, reports, press releases, and other publications, but excluding training materials, which are covered under respective components). The communication plan and M&E plan will coordinate to produce photos, videos, remote-sensing imagery, and other documentation that, under the communication plan, will be edited and packaged for appropriate public relations materials targeting various stakeholders.

The project's lessons learned will be distilled (based on information collected primarily via the project's M&E plan; Output 4.1.1.) and disseminated via appropriate channels (e.g., inter-sectoral coordination fora, project stakeholders, press releases, interviews, and project workshops). The project will also explore opportunities for dissemination through radio and television broadcasts. The project will ensure that communications target all relevant stakeholders, with particular emphasis on facilitating up-scaling effective approaches.

Local CCA outreach programs, guided by specific communication strategies and plans, targeting farmers and other natural-resource users on locally appropriate CSA practices and climate-smart livelihood options will be delivered for each target area.

This output will build upon Output 2.1.3. and be promoted through a variety of media and locally appropriate audio-visual communication materials in both digital and printed formats and available through radio, TV, and social media channels. Village-level awareness and outreach activities in the target districts will be supported by the LWU.

Information on locally appropriate CCA good practices and climate smart livelihood options and opportunities will be made available through information and knowledge-sharing and learning networks hosted by the rural extension services with specific training on their use provided through the Farmer Field Schools (FFS) mechanism. Once established, the networks will provide a mechanism for the dissemination and updating of experiences of locally successful climate smart practices.

Additionally, as Luang Prabang and Houaphan are not currently LaCSA pilot sites, LDCF funding will support LaCSA piloting in the targeted communities via FFSs. Local communities will pilot use of LaCSA's agro-meteorological bulletins. Bulletins may be used by an NGO or other service provider at village level. DALAM is the primary agency with field-level training capacity for deployment of LaCSA's bulletins, and DAFOs will also be trained via FAO support by the start of the project.

Use of public announcement systems has been piloted by DALAM and Lao National Radio (LNR) in 20 villages. DALAM trains announcers to read the bulletin for broadcast using a script developed by LNR. The pilot has covered 25,000 people and, based on a survey undertaken by SAMIS and CIAT, 67% of farmers favor the initiative. The project will support expansion of this important knowledge-sharing approach via this output.

Additionally, a pilot has started in Saravan Province to train school children about LaCSA. FAO and WFP have developed LaCSA-themed metal posters on which children can affix magnets to complete the posters. SAMIS has trained teachers on their use. The pilot is still on-going and is promising. Depending on lessons learned, this LDCF project may expand aspects of that pilot.

Indicative Activities:

- 4.1.2.1.: Execute and update the project's stakeholder engagement plan.
- 4.1.2.2.: Execute and update the project's communication plan.

Many aspects of the project's communication and knowledge-management plans will be embedded in corresponding activities (e.g., capturing relevant indigenous knowledge and practices under 2.1.2. and 3.1.1.), and budgets for those aspects are subsumed in the respective activity budgets (e.g., LOAs issued under other components).

- 4.1.2.3.: Train announcers and conduct public announcements for LaCSA bulletin dissemination.

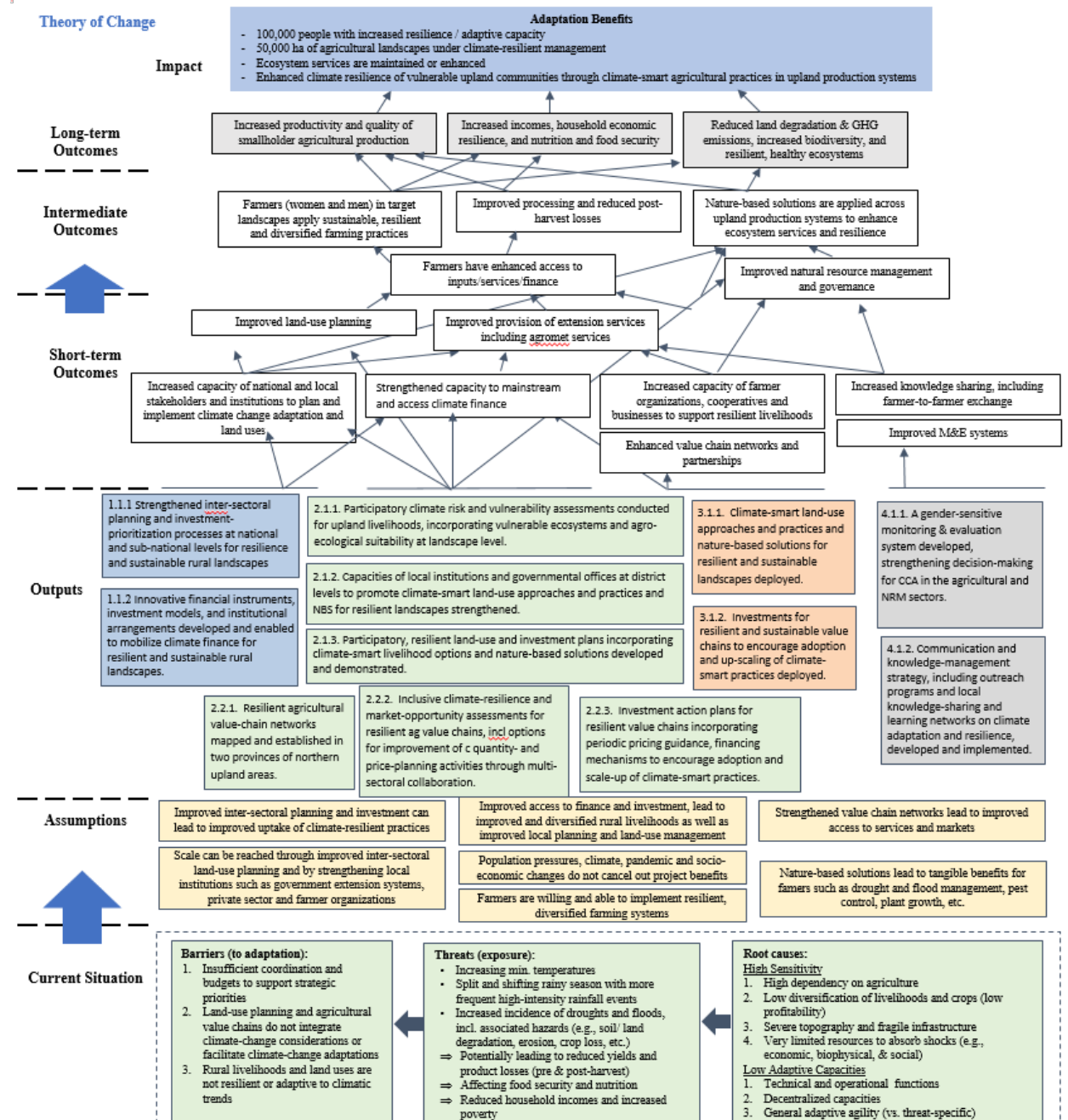
Summary Overview of Project's Logical Framework

Component 1: Enabling environment to promote and incentivize resilient and sustainable rural landscapes in Lao PDR
1.1. Strengthened capacity to mainstream and access climate finance for resilient and sustainable rural landscapes in Lao PDR.
1.1.1. Strengthened inter-sectoral planning and investment-prioritization processes at national and sub-national levels for resilient and sustainable rural landscapes.
1.1.1.1. Map the national and provincial multi-sectoral networks relevant to land-use investments.
1.1.1.2. Establish guidelines to facilitate multi-stakeholder, multi-sectoral consultations at provincial and district levels.
1.1.1.3. Pilot the multi-sectoral consultative process at national level.
1.1.1.4. Codify the guidelines via a formal Memorandum of Understanding (MOU) with relevant stakeholders.
1.1.2. Innovative financial instruments, investment models, and institutional arrangements developed and enabled to mobilize climate finance for resilient and sustainable rural landscapes.
1.1.2.1. Assess the feasibility and trade-offs of various innovative financial instruments, investment models, and institutional arrangements.
1.1.2.2. Conduct multi-stakeholder consultations for initial feedback and validation.
1.1.2.3. Create and gain endorsement of prototypical landscape investment packages for blended financing.
1.1.2.4. Create guidelines and training materials and deliver training of trainers.
1.1.2.5. Deliver training to relevant stakeholders.
Component 2: Resilient and sustainable land-use planning and value-chain networks in two provinces of the northern uplands.
2.1. Integrated, landscape-level planning strengthened using climate-smart practices for resilient and sustainable landscapes in the northern uplands.
2.1.1. Participatory climate risk and vulnerability assessments conducted for upland livelihoods, incorporating vulnerable ecosystems and agro-ecological suitability at landscape level.
2.1.1.1. Train governmental staff to conduct assessments and augment equipment, as needed.
2.1.1.2. Conduct vulnerability assessments in targeted districts at inception, mid-term, and end of project.
2.1.1.3. Integrate AEZ climate modelling as well as similarity and suitability analyses into P-FALUPAM and DALAM's land-use management plans.
2.1.2. Capacities of local institutions and district-level governmental offices to identify, incentivize, promote, and disseminate climate-smart land-use approaches and practices, and nature-based solutions for resilient and sustainable landscapes strengthened.
2.1.2.1. Develop policy-oriented training and materials and deliver ToTs.
2.1.2.2. Delivery of policy-oriented training.
2.1.2.3. Develop practice-oriented training and tool-kit.
2.1.2.4. Delivery of practice-oriented training and tool-kit.

2.1.3. Participatory, resilient, and sustainable land-use and investment plans incorporating innovative, evidence-based, locally appropriate, gender-responsive, and climate-smart livelihood options and nature-based solutions developed and demonstrated.
2.1.3.1. Conduct provincial participatory stakeholder mappings in Luang Prabang and Houaphan.
2.1.3.2. Conduct participatory stakeholder mappings in targeted districts.
2.1.3.3. Draft provisional menus of land-use and investment packages for targeted provinces and districts.
2.1.3.4. Host provincial and district multi-stakeholder plenary consultations.
2.1.3.5. Produce climate-adaptive provincial and district land-use frameworks.
2.1.3.6. Conduct participatory land-use planning in targeted communities, integrating AEZ and CSA for strengthened climate resilience.
2.1.3.7. Develop farm-level business models for supported practices.
2.2. Innovative and resilient agricultural value-chain networks and financing options established to adopt and scale up climate-smart practices.
2.2.1. Resilient and sustainable agricultural value-chain networks mapped and established in two provinces of the northern uplands.
2.2.1.1. Map networks for six agricultural value chains.
2.2.1.2. Host semi-annual network meetings (starting year 2).
2.2.1.3. Develop training materials and tool-kit, and conduct ToTs for value-chain network coordination groups.
2.2.1.4. Conduct trainings for value-chain network coordination groups.
2.2.2. Inclusive climate-resilience and market-opportunity assessments for resilient and sustainable agricultural value chains, including options for improvement of periodic quantity- and price-planning activities through multi-sectoral collaboration.
2.2.2.1. Assess selected agricultural value chains for climate resilience and market opportunities.
2.2.3. Investment action plans for resilient and sustainable value chains incorporating periodic pricing guidance, financing options, incentives, models, and tools to encourage adoption and up-scaling of climate-smart practices developed and piloted.
2.2.3.1. Draft provisional investment packages for targeted value chains.
2.2.3.2. Host provincial and district multi-stakeholder plenary consultations regarding drafted value-chain investment packages.
2.2.3.3. Produce full supportive tools and materials to pilot revised value-chain investment packages.
2.2.3.4. Pilot value-chain investment packages.
2.2.3.5. Gain endorsement from MAF and MoIC for investment action plans for selected value chains.
Component 3: Climate-smart technologies and innovations deployed in two provinces of the northern uplands.
3.1. Climate-smart livelihood practices scaled up at landscape level to support resilient and sustainable rural landscapes that improve food security and nutrition.
3.1.1. Climate-smart land-use approaches and practices and nature-based solutions for resilient and sustainable landscapes deployed.
3.1.1.1. Develop relevant FFS packages, including TOTs and in local languages where appropriate.
3.1.1.2. Deliver the TOTs and TOT refreshers.

3.1.1.3. Deliver FFS packages and produce local adaptation plans.
3.1.1.4. Establish relevant criteria and procedures for community-led resilience investment packages (CRIPs).
3.1.1.5. Select, fund, and support CRIPs.
3.1.2. Investments for resilient and sustainable value chains to encourage adoption and up-scaling of climate-smart practices deployed.
3.1.2.1. Select, fund, and support outstanding value-chain investments.
Component 4: Monitoring and evaluation, project communication, and lesson-learning
4.1. Project monitored and evaluated, information disseminated, and lessons from project implementation, progress monitoring, review, and evaluations codified and shared.
4.1.1. A gender-sensitive monitoring and evaluation system developed, strengthening decision-making for CCA in the agricultural and NRM sectors.
4.1.1.1. Develop and deploy a knowledge management system that facilitates execution of the project's monitoring and evaluation plan.
4.1.1.2. Conduct the project's Mid-term Evaluation.
4.1.1.3. Conduct the project's Final Evaluation.
4.1.1.4. Install and integrate three automatic weather stations (AWSs).
4.1.1.5. Execute the project's monitoring and evaluation plan.
4.1.2. Communication and knowledge-management strategy, including outreach programs and local knowledge-sharing and learning networks on climate adaptation and resilience, developed and implemented.
4.1.2.1. Execute and update the project's stakeholder engagement plan.
4.1.2.2. Execute and update the project's communication plan.
4.1.2.3. Train announcers and conduct public announcements for LaCSA bulletin dissemination.

Theory of Change



1.a.4. Alignment with GEF focal area and/ or Impact Program strategies

N/A

1.a.5. Baselines, incrementality, additional cost reasoning, and co-financing

This section relies on the following definitions.

Table 6: Definitions of Key Terms for GEF Co-financing

Term	Definition
Business-as-usual (BAU)	?BAU refers to activities that would be implemented also in absence of climate change. The full costs of adaptation are fully paid by the LDCF/ SCCF.?
Co-financing	?financing that is additional to GEF Project Financing, and that supports the implementation of a GEF-financed project or program and the achievement of its objective(s)?[92] ⁸⁷ ?[C]o-financing in the context of LDCF-funded adaptation projects is defined as the cost which would be incurred for BAU. This amount is considered the project?s baseline and constitutes the co-financing?.[93] ⁸⁸
Incremental costs	LDCF funding of climate-adaptations beyond the business-as-usual case
Additionality	?additional benefits that are attributable to the GEF?[94] ⁸⁹
Recurrent expenditures	funding for on-going operations (e.g., compensation, cost of capital, depreciation), excluding acquisition of fixed assets and, in the case of governments, development budgets[95] ⁹⁰
Investment mobilized	?the sub-set of co-financing that excludes recurrent expenditures?[96] ⁹¹

Table 7, at the end of this section, provides an overview of key additionality linkages and associated co-financing budgets.

Lao PDR is a least developed country (LDC) that is extremely vulnerable to climate change. As noted above (section 1.a.1.), these vulnerabilities are exacerbated by unsustainable farming practices and a recent focus on production of a limited number of climate-sensitive cash crops, leading to increased soil erosion and land degradation, particularly in the northern uplands of Lao PDR. These trends are contributing to reduced agricultural productivity, leading farmers to shorten fallow periods, expand shifting cultivation, clear and degrade forests, and increasingly draw down natural resources, which provide critical ecosystem services for local communities. Climate change is expected to worsen these negative trends if there is no intervention.

As set out in the NAPA, the primary climate change-related hazards in Lao PDR are floods and droughts, which directly contribute to fluctuating agricultural production and food insecurity, particularly in highland and upland areas, and indirectly damage related sectors, particularly water resources, the transportation network (including remote communities' access to distant agricultural markets), and public health services, thereby further increasing agricultural households' vulnerabilities.

As climate change advances, the situation in the northern uplands will become more precarious while production that relies on slash and burn and a limited number of climate-sensitive cash crops. With little diversification of crops and income sources and without proper tools, skills, knowledge and support to adapt their farming systems and improve their sustainability, farming communities, especially the poorer most vulnerable ones are likely to be hit hard by climate change.

To address this negative trend and support food security and improve resilience to climate change requires a different approach focused on CSA and land use with diversified and integrated production systems coordinated over landscape levels with changes in farmer behaviour. The LDCF project's emphasis on improving agricultural land management and use practices will help increase crop productivity, contribute to food security, and build the resilience of local communities. These practices will also deliver substantial co-benefits for climate change mitigation. In addition, reversing deforestation such as via assisted natural regeneration reduces vulnerability to adverse climate change impacts such as floods and soil erosion.

Without targeted investments and technical inputs, unsustainable land practices will continue, and CCA priorities and practices and climate smart livelihoods will not be integrated into agricultural and rural development initiatives in the northern uplands, with a weak framework and limited national support to promote adoption of, and investment in, CSA in the upland areas of Lao PDR. This will make agriculture more precarious in the northern uplands, leading to reduced food security and leaving potentially many tens of thousands of poor farmers as climate change victims.

The LDCF project builds on, and is complemented by, the efforts of several on-going baseline projects that operate across some of the most vulnerable districts in the upland provinces in northern Lao PDR. For instance, the Strategic Support for Food Security and Nutrition Project (SSFSNP) project offers a number of entry points, synergies and areas for cooperation with the LDCF project, particularly in relation to development of farmers' organizations linking men and women farmers to markets and support to private agri-business investment and an extension approach that shifts the extension worker role from 'solution giving' to that of process helper and resource linker in a system emphasizing decentralized farmer-to-farmer^[97]⁹² and enterprise-to-farmer extension. However, the SSFSNP does not have a specific focus on climate change adaptation activities to provide farmers with viable alternative sustainable livelihoods or directly target cultivation practices to counter climate vulnerability, nor does it specifically seek to integrate climate smart agriculture practices into production systems to ensure sustainability and build resilience to climate change. Consequently, the LDCF project will complement/enhance the SSFSNP by offering opportunities to incorporate CSA approaches developed by the LDCF project into existing farming systems particularly as part of

ongoing FFS and Farmer-Farmer extension systems. The LDCF project will also ensure that climate smart land-use planning, rather than land-use planning *per se*, is better integrated into the SSFSNP frameworks in order to identify sustainable integrated land use systems building CSA good practices, climate change resilience and adaptation.

Similarly, the LDCF project will collaborate with the Sustainable Forestry and Rural Development ? Scaling-Up Participatory Forest Management (SUFORD-SUPFM) project through its activities to develop sustainable livelihood options to help avoid deforestation and forest degradation, including NTFP domestication. The SUFORD-SUPFM project's livelihood activities focus on food security, rural infrastructure and livelihoods, development of small and medium-sized enterprises (SMEs), business-development planning, and organization of producer groups, which offer significant opportunities for synergies and exchanges of experience with the proposed LDCF project. In addition, the SUFORD-SUPFM project focuses on village land-use mapping, developing village rules on customary forest uses and Community Action Plans, and Production Forest Area Management Plans in areas close to the LDCF proposed project area in Oudomxay province, which will provide important relevant experiences to help shape the planning activities proposed for district and village/community levels under the LDCF project. The SUFORD-SUPFM have also been working on establishing gender-focused and ethnic teams involving the Lao Women's Union (LWU), including strengthening Women Production Groups by providing capacity-building for weaver groups and training on forest management plans, which will continue to inform the LDCF project's efforts to engage and benefit women and disadvantaged groups.

LDCF resources will also be used to scale up the innovative agro-silvopastoral solutions developed under the Landscape Management and Conservation Agriculture Development for Eco-Friendly Intensification and Climate-resilient Agricultural Systems (EFICAS) project and ADB. Over the past decade the project has successfully tested a range of technical options in the northern uplands of Lao PDR to support a sustainable intensification of upland agriculture (although not through a CSA lens), and diversified cropping systems based on agro-ecological principles have proved effective in restoring degraded soils and improving agricultural productivity while limiting the use of external chemical inputs. The LDCF project will continue to incorporate these lessons and link to the current phase of the EFICAS project, as well as contribute CCA/ CSA experiences to the EFICAS project.

The various REDD+-related activities in the targeted provinces are also expected to contribute to the LDCF project's aims. For example, Houaphan's PRAP team will provide technical support to integrate business-model development into DSEDPs and planning processes, which the LDCF project will likewise support.

Table 7: Co-financing and Additionality

Agency	Project/ Program and Description	Corresponding Outputs for LDCF Additionality	Co- finance
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Agency	Project/ Program and Description	Corresponding Outputs for LDCF Additionality	Co-finance
MAF	<p>Lao Agriculture Competitiveness Project (P161473)</p> <p>Objective: To increase the competitiveness of selected agricultural value chains in the project areas.</p> <p>Component A: Improved agricultural efficiency and sustainability</p> <ul style="list-style-type: none"> - Sub-component A1: Promoting adoption of good varieties and quality seeds <p>A1.b: Matching grants to selected seed-multiplication groups (SMGs) to carry out sub-projects (i.e., small works, goods, equipment, and so on).</p> <p>A1.c: Technical and material assistance to build the capacity of PAFOs, DAFOs, MAF technical departments, and research institutions to conduct training for SMGs and to carry out seed quality monitoring and certification.</p> <ul style="list-style-type: none"> - Sub-component A2: Promoting good agricultural practices <p>A2.a: TA for the establishment of FPGs and building their capacity to adopt GAP.</p> <p>A2.b: Matching grants to selected FPGs to carry out sub-projects that implement GAP.</p> <p>A2.c: TA and material assistance to build the capacity of PAFOs, DAFOs, and MAF technical departments to conduct training for farmer production groups (FPGs) on GAP and to carry out related extension and certification activities including soil analysis, organic fertilizer production, and organic farming.</p> <p>A2.d: TA to link FPGs with agribusinesses in marketing farm produce.</p> <ul style="list-style-type: none"> - Sub-component A3: Providing critical productive infrastructure <p>A3.b: Provision of TA to establish water user groups and to build their capacity to adopt improved water use models.</p>	<p>Overall: The LDCF project builds on nearly all technical aspects of LACP, extending to additional commodities and NTFPs, and expands its geographic scope to the northern uplands.</p> <ul style="list-style-type: none"> - The use of improved varieties (e.g., stress-tolerant varieties, short-season varieties, etc.) can increase climate adaptability by increasing yields (due to higher germination rates, higher productivity, lower losses) and increasing net profits (due to higher farm-gate prices based on varietal demand and product purity). Therefore, SMGs are important stakeholders in agricultural value chains. The LDCF project builds on this LACP sub-component by incorporating SMGs into multi-stakeholder networks and value-chain investment activities, building national and sub-national governmental capacities to integrate certified seeds and improved varieties into CCA planning and support in the agricultural sector, and providing information to farmers that supports demand for certified seeds and improved varieties. - Primary related outputs: 2.2.1., 2.2.2., 2.2.3., 3.1.1., and 3.1.2. - GAP is a form of standards-based production that provides a framework that facilitates farmers' adoption of practices that increase climate adaptability through several means, including improved land conditions, improved resource management, increased adaptive capacities (especially for crop management), increased input efficiency, increased returns on investments, increased marketability, and strengthened market connections. - Primary related outputs: 2.1.3., 3.1.1., and 3.1.2. 	14,000,000

Agency	Project/ Program and Description	Corresponding Outputs for LDCF Additionality	Co-finance
IFAD	<p>Strategic Support for Food Security and Nutrition Project[1]⁹³ [2]⁹⁴</p> <p>Project goal: Contribute to reduced extreme poverty and malnutrition in poorest communities.</p> <p>Development objective: Improved and diversified agricultural production and household nutrition enhance life prospects.</p> <p>Outcome 1: Strengthened public services.</p> <ul style="list-style-type: none"> - Output 1: Build government staff capacities and procedures and technical packages to support and converge community implementation of selected National Nutrition Strategy interventions. <p>Activity 1: Establish a tiered project-planning, supervision, monitoring, knowledge management, and learning system within the Ministry of Agriculture and Forestry (MAF), supporting nutrition-investment convergence strategies in target districts.</p> <p>Activity 2: Build GoL service provider (DAEC, TSCs, and NAFRI) capacities to develop and deliver sustainable climate-adapted and nutrition-sensitive agriculture and natural resource management technologies and training programmes and monitor their impact.</p> <p>Outcome 2: Community-driven agriculture-based nutrition interventions established.</p> <ul style="list-style-type: none"> - Output 2: Planning for improved nutritional outcomes. <p>Activity 1: District multi-sectoral convergence planning</p> <p>Activity 2: Village development planning</p> <ul style="list-style-type: none"> - Output 3: Women-led improvement in household nutrition <p>Activity 1: Farmer nutrition schools</p> <p>Activity 2: Household availability and utilization of nutritious food.</p> <p>Outcome 3: Sustainable and inclusive market-driven partnerships established.</p> <ul style="list-style-type: none"> - Output 4: Profitable investment in nutrient-sensitive, climate-adapted agriculture 		1,000,000

Agency	Project/ Program and Description	Corresponding Outputs for LDCF Additionality	Co- finance
Total			15,000,000

[1] <https://www.ifad.org/en/web/operations/project/id/2000001131>

[2] <https://www.gafspfund.org/sites/default/files/inline-files/final%20design%20report%20-%20GAFSP-SSFSNP.pdf>

Table 8: Non-co-financed Incremental Investments[1]

Agency	Project/ Program and Description	Corresponding Outputs for LDCF Additionality	
Recurrent Expenditures[2]			Budget
MAF-DALaM	Coordination and networking on agricultural land-use management and development	1.1.1., 2.1.2., 2.1.3.	49,400
	Preparation and propagation of strategy on agricultural land management and development to 2025	1.1.1., 1.1.2.	38,900
	Land management for specific and prioritized use in locality	1.1.2., 2.1.1., 2.1.2., 2.1.3., 3.1.1.	24,400
	Management of land erosion on upland agricultural lands	2.1.1., 2.1.2., 2.1.3., 3.1.1.,	24,400
	Agricultural land investigation in Lao PDR (joint implementation by Laos and Vietnam)	1.1.1., 2.1.3.	24,400
	Agricultural land titling and development	2.1.3.	24,400
	Agricultural land survey and LUP at village and village cluster levels	2.1.3.	24,400
	Survey on chemical element and soil assessment for agricultural land	2.1.1., 3.1.1.	24,400
	Development of information on GIS	2.1.1., 4.1.1.	24,400
	Soil-mapping	2.1.1.	24,400
	Capacity-building for LUP staff at provincial and district levels	2.1.1., 2.1.2., 2.1.3.	24,400
	Capacity-building of soil technician at village level	2.1.1., 2.1.2., 3.1.1.	24,400
	Networking and development of ITC system for agricultural land	1.1.1., 4.1.2.	24,400
	MAF-NAFRI Technical research on sustainable agricultural practices	2.1.1., 2.1.2.	24,400
	Research on climate-change adaptation (CCA)	1.1.1., 2.1.1., 2.1.2.	38,900
	MAF-DoPF Integrated pest management (IPM)	2.1.2., 3.1.1.	22,200
MAF-DoPF	Capacity-strengthening on agricultural and forestry planning and budgeting	1.1.1., 1.1.2., 2.1.2., 2.2.3., 3.1.1., 3.1.2.	49,400
	Agriculture and forestry strategic planning (with Vietnam and China)	1.1.1., 1.1.2., 2.2.3.	49,400

	Capacity-strengthening on project M&E in agriculture and forestry sector	2.1.2., 4.1.1.	49,400
	Establishment and improvement of monitoring database on staple food and crop production	2.1.2., 4.1.1.	13,900
	Monitoring of private sector in agricultural sector	2.2.1., 4.1.1.	24,400
	Improvement of agriculture and forestry information dissemination	1.1.1., 2.1.2., 2.2.3., 3.1.1., 3.1.2., 4.1.2.	24,400
	Improvement of statistics on agriculture and forestry sector	1.1.1., 2.1.1., 2.2.1., 4.1.1.	21,700
	Information dissemination on agriculture, forestry, and rural development through media	4.1.2.	407,200
MAF-DoA	Capacity building on model farmers on good agricultural practices (GAP) and organic production	2.1.2., 3.1.1.	38,900
	Management of crop production, commercial production, and agricultural industry	2.1.3., 2.2.1., 2.2.2., 2.2.3., 3.1.2.	24,400
	Coordination and M&E on agriculture	4.1.2.	24,400
MAF-DTEAP	Technical extension on modern agricultural production	3.1.1.	38,900
MAF-DoPLA	Policy research on agriculture to prepare for ASEAN integration	1.1.2.	24,400
MAF-DRDC	Co-financing of poverty-reduction fund In Luang Prabang: Nambark, Pakxeng, Phonxay, Viengkham, Phoukhoun, Phonthong	2.2.3., 3.1.1., 3.1.2..	452,400
MAF-DRDC	National focal point for technical service center in Xiengkhor District, Houaphan Provinc	3.1.1.	91,700
	<i>Sub-total, MAF recurrent expenditures</i>		<i>1,777,100</i>
MoNRE-DEQP	Coordination of integrated spatial planning (ISP) for land, natural resources, and environment	1.1.1., 2.1.1.	2,000,000
MoIC-DoSMEP	Support to small and medium-sized enterprises	1.1.2., 2.2.1., 2.2.3., 3.1.2.	22,220,000
	<i>Total, recurrent expenditures</i>		<i>25,997,100</i>
Non-co-financed Incremental Investments			

World Bank

Programmatic Green Growth Development Policy Operation (GGDPO)[3] ? Phase 2 (2019 ? 2022)[4] with potential to link to Phase 3 (2022 ? 2025)[5]

A three-phase loan program supporting GoL's National Green Growth Strategy (NGGS).[6] Relevant baselines:

- Pillar 2. Consolidating green growth principles across the national development strategy

- o Policy Track 2.1. Building the foundation for green growth planning and monitoring

- o Policy Track 2.2. Strengthening country instruments for clean and resilient green growth financing
 - ? Includes work with MoNRE's Environment Protection Fund (EPF) to increase and diversify public revenues to support environmental initiatives

- o Policy Track 2.3. Shifting towards decision-making informed by priorities for environmental protection and climate resilience

- Pillar 3. Incorporating green growth in selected sectors

- o Policy Track 3.1. Shifting toward integrated and sustainable water resources management and use

- o Policy Track 3.2. Improving forest resources management for production and conservation

- o Policy Track 3.3. Leveraging green growth policies to control non-point source pollution.

Overall:

- Extends GGDPO2 efforts to agricultural and forestry sectors, particularly for land-use planning and rural agricultural value chains.

- Contributes to NGGS priorities and the Strategic Framework for Green and Sustainable Agriculture (currently under development by MAF).

Re: Policy Track 2.1:

- C1: Establishes and strengthens inter-sectoral and multi-stakeholder platforms, as well as agricultural value-chain networks.

- C2: Develops institutional capacities to support green growth in the agricultural and forestry sectors, particularly via land-use planning and value chains.

- C4: Supports integration of CCA into M&E for agriculture and forestry.

Re: Policy Track 2.2.:

- C1 & C2:

- o Apply this approach to address CCA in the agricultural and forestry sectors.

- o Develop frameworks in which public resources are blended with other forms of financing in a cascade-based approach.

Re: Policy Track 2.3.:

- C2: Build national and sub-national institutional capacities to integrate CCA into strategic planning, land-use planning, land-use investments, and market development for agriculture and forestry (e.g., AEZ scenario modelling, vulnerability assessments, agrometeorological data, etc.).

Re: Policy Track 3.1.:

- C2 & C3:

- o Support LUP and land uses that directly affect GGDPO2's targets for minimum flows.

- o Support local investments and technical assistance for water management.

Re: Policy Track 3.2.:

- C1, C2, and C3 all include activities to support SFM via integration into livelihoods (e.g., NTFP production, access, and management), land-use planning, zero-deforestation (or deforestation-free) agriculture, etc.

- As GGDPO2 is particularly interested in protected areas, there is a potential

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Additional Financing for Scaling-up Participatory Sustainable Forest Management (AF-SUPFSM; also known as SUFORD-SU)
Implementation Partner: MAF-DOF

USD 5M in additional funding to extend operations from 2020 onward.

Objective: To strengthen participatory sustainable forest management in targeted production forest areas, and forest landscape management in targeted provinces.

Focus: CCM (REDD+) and protected areas

Activities at national level as well as in 13 provinces (excluding Luang Prabang and Houaphan).

Relevant baselines:

Component 1: Strengthening and expanding participatory sustainable forest management (PSFM) in production forest areas (PFAs).

- Activity 1: Enhance community engagement in PSFM
 - a) timber legality assurance system piloting and certification support throughout the value chain;
 - b) facilitate environmental and social sustainability of private investment opportunities by assessing availability of appropriate lands for forest plantations in barren and severely degraded lands in PFAs;
 - c) support for development of village forest management plans (VFMPs) and agreements;
- Activity 2: Enhance village livelihood-development activities
 - a) Providing technical support to livelihoods production groups as identified in agreed Community Action Plans with participating communities in PFAs and Village-Use Forest areas, including on extension and monitoring for VLDG implementation, and learning sites for NTFPs and white charcoal; and
 - b) improve the value chain linkages for selected products with specific producer groups, with special focus on female-headed households and women entrepreneurs/farmers. No new project funding for the VLDGs.

Component 2: Pilot forest landscape management

- Subcomponent 2B: Establishing Forest Landscape Investment Plans
 - a) prepare Forest Landscape Investment Plans for priority landscapes in selected provinces

Whereas AF-SUPFSM focuses on CCM (REDD+) and protected areas, this LDCF project generates additionality by linking those aspects with CCA and broader agricultural land-use planning, land uses, and value chains. The LDCF project will primarily coordinate with AF-SUPFSM at the national level, and will work to ensure that sub-national approaches are aligned, though they will be conducted in separate provinces.

Re: AF-SUPFSM Component 1:

- Activity 1:
 - o Coordinate with DOF to ensure harmonization between (a) AF-SUPFSM's processes for land-use planning for PSFM align and (b) DALAM's technical and operational deployment of PFALUPAM.
 - o Ensure alignment between AF-SUPFSM's development of VFMPs and this LDCF project's support for deforestation-free agriculture (e.g., connecting with AF-SUPFSM's Activity 1.a.), long-term LUP based on climate modelling, development of NTFP resources, land-use and land-cover categorizations, etc.
- Activity 2:
 - o LDCF C2 (especially) and C3 directly align in order to support incorporation of CCA considerations in the broader AFOLU context.

Re: AF-SUPFSM's Sub-component 2B:

- LDCF C2 aligns directly with all aspects and will target full coordination on all related content and operational mechanisms (e.g., guidance and lesson-learning for sub-national multi-stakeholder platforms and, to the extent possible, coordination for operationalization of national platforms; coordination between DOF, DALAM, DTEAP, and DoSMEP re: institutional capacity development).

GIZ

?Implementation of the Lao PDR Emission Reductions Programme through improved governance and sustainable forest landscape management? [7] (GCF)

The GCF project supports REDD+ Phase 2 and the successful implementation of the ER Program, which is based on provincial REDD+ action plans (PRAPs). The project's goal is ?reduced emissions from land use, deforestation, forest degradation, and through sustainable forest management, and conservation and enhancement of forest carbon stocks.? The project targets two main outcomes: (1) strengthened institutional and regulatory systems for low-emission planning and development and (2) improved management of land and forest areas contributing to emissions reductions.

The GCF's sub-national operations are split between 3 projects. This LDCF project aligns temporally and geographically with GCF Projects 1 (2020 ? 2024) and 3 (2024 ? 2029), which both cover Houaphan, Luang Prabang, and Sayabouri.

Project 1 focuses on (i) governance and regulation, (ii) SMF skills, and (iii) sustainable financing. Project 3 will focus on (i) awareness and behavior, and (ii) land-use planning and rights.

Project 1 has a total budget of EUR 62.6M, of which EUR 15.2M is from GCF, and is scheduled for implementation from 1 June 2020 to 30 June 2024 (49 months). Expected CCA impacts of Project 1 are: 120,000 direct rural beneficiaries (60,000 men and 60,000 women) and 235,800 Indirect rural beneficiaries.

Relevant baselines from GCF Project 1:

Output 1: Creation of an enabling environment for REDD+ implementation

- Activity 1.5.: Land-use planning and improved tenure security (supports implementation of existing PLUPs)

Operational budget: EUR 618,900

o Action 1.5.1: Mainstreaming FLR guiding principles into land use planning manuals and guidelines

Revision of existing manuals and guidelines relating to land use planning in order to integrate a landscape approach, promoting multi-sectoral planning that can promote forest and landscape restoration through a range of forestry and non-forestry sector actions.

Stakeholder feedback and consultation on the proposed changes to manuals and guidelines.

Awareness raising and capacity building on

This LDCF project directly aligns with several aspects the GCF project.[8] Whereas the GCF project focuses on forestry-related CCM and livelihoods, this LDCF's CSA-based approaches bridge between livelihoods, CCA, and CCM co-benefits in the AFOLU sector. Therefore, this LDCF project provides CCA additionality primarily for Outcome 2 of the GCF project. (Co-financing and additionality are currently viewed in terms of GCF Project 1, but could eventually relate to GCF Project 3.)

To the extent possible, this LDCF project will seek emerging opportunities to maximize investments in physical assets by taking advantage of operational efficiencies that augment TA and operational mechanisms in the GCF project (vs. independent TA and operations).

FAO will request observer status on the Provincial Project Steering Committees in Luang Prabang and Houaphan for GCF Project 1.

Re: GCF Activity 1.5:

- Under Outputs 2.1.1. and 2.1.2., the LDCF project will ensure that CCA considerations are reflected in the updates to manuals and guidelines (e.g, AEZ scenarios) and that the GCF project's PLUP initiatives are aligned with the LDCF project's P-FALUPAM activities, in terms of planning, execution, and monitoring.
- Under Output 1.1.2., the LDCF project will ensure that governmental funding and support for PLUP implementation is considered in the financial instruments and investment models supported by the LDCF project.

KfW

Village Forest Management (VFM) project[9], [10]

Project Partner: MAF

Goal: to improve the conditions of selected forest ecosystems and the livelihoods of the local population through sustainable management of village forests.

The project's targeted impacts pertain to CCM and biodiversity.

Project sites:

- Luang Prabang, Phonsai District
- Xayabouri, Phiang District

Output 1: Improved governmental capacities and development of a supportive legal environment for village forestry.

- o Supports development of a national forestry policy to improve the legal certainty of land ownership by granting municipal and individual land titles and by creating a framework for private-sector investments.

Output 2: Financially sustainable and climate-resilient forestry models based on secure land tenure.

- o Supported forestry models will be implemented in natural forests and teak plantations.
- o Seeks to transition to financial sustainability
- o Uses existing LUPs to establish land-use management agreements and forest-management plans
- o Establishes monitoring and enforcement agreements to ensure compliance

Output 3: Improved socio-economic conditions of targeted villages.

- o Support families that lose income as a result of new forestry activities (e.g., use restrictions)
- o Support income-generating activities with positive impacts on village forestry.
- o Technical support and extension services for income-generating activities.

This LDCF project will produce additionality by adding CCA and CSA considerations and outcomes to VFM's activities, which primarily target CCM and biodiversity. Additionally, while leveraging VFM's national efforts and provincial operational presence in Luang Prabang, the LDCF project's activities will extend the utility of VFM's approaches to a broader geographic area (Houphan, plus additional districts in Luang Prabang).

Re: Output 1:

- o This LDCF project will conduct P-FALUPAM, which, among other things, establishes village boundaries that are the basis for land titling.
- o C1 and C2 support the enabling environment and models for private-sector investments in AFOLU, such as those related to production forests, agroforestry, and NTFP production.

Re: Output 2:

- o C2 and C3 promote land-use planning and land-uses that facilitate improved management of forested lands (e.g., agroforestry, fallow-to-perennial transitions, management and enrichment plantings for NTFPs, etc.).
- o This LDCF project also facilitates inclusion of CCA considerations into forest-related LUPs (e.g., AEZ modeling based on climate forecasts).
- o This LDCF project will incorporate market incentives to improve local livelihoods while also reducing VFM's reliance on monitoring and enforcement of negotiated forest-management plans.

Re: Output 3:

- o This LDCF project uses market-based approaches that ensure economic sustainability by increasing and diversifying local livelihoods, thereby reducing reliance on external support.
- o C2 and C3 provide direct investments to support VFM's envisaged income-generating activities, particularly those associated with deforestation-free (or ?zero-deforestation?) agriculture.
- o C2 and C3 provide CCA additionality for VFM's envisaged TA.

IFAD

The Agriculture For Nutrition (AFN) project[11] is funded[12] by the Global Agriculture and Food Security Program (GAFSP). The goal of the project is to improve incomes, food security, and nutrition in rural communities by supporting nutrition-sensitive and climate-smart agricultural practices. The project works in 400 villages throughout 12 districts in Houaphan, Oudomxai, Phongsaly, and Xieng Khouang provinces in the upland areas of Lao PDR.

In Houaphan province, AFN promotes successful agricultural approaches and technologies in Xamtai, Kuan, Houameung, and Sone districts. AFN is strengthening the enabling environment for agricultural productivity, rural livelihoods, and sustainable, market-led, diverse, nutrition-rich agricultural production. The project's activities support public-private partnerships and empower women.

This LDCF project directly aligns with AFN's goals and activities. It builds on AFN's focuses (livelihoods and nutrition) by further Integrating CCA, LUP, and value chains (including NTFPs) for an increasingly holistic approach to development and resilience in the northern uplands.

Additionally, this LDCF project builds the institutional capacities and networks to support AFN's efforts and invests in physical assets to ensure comprehensive and lasting benefits.

Geographically, this LDCF project extends these efforts to additional districts in Houaphan as well as into Luang Prabang.

[1] These initiatives meet the GEF and LDCF definitional criteria of incremental investments comprising recurrent expenditures and investments mobilized (see table at beginning of Section II.1.a.5), but do not have formalized co-financing agreements.

[2] Estimated USD equivalent for projected value over duration of project (Jan 2021 – Dec 2025)

[3] <http://documents1.worldbank.org/curated/en/387201559354572095/pdf/Lao-People-s-Democratic-Republic-Second-Programmatic-Green-Growth-Development-Policy-Operation-Program-Documents.pdf>

[4] Total loan amount = 40,000,000 USD.

[5] There is the possibility of co-financing via Phase 3, which could be identified based on the GGDPO3 triggers noted in the PAD for GGDPO2. (See link in footnote above.)

[6] For description of NGGS, see prodoc section II.7. *Consistency with National Priorities*.

[7] <https://www.greenclimate.fund/document/implementation-lao-pdr-emission-reductions-programme-through-improved-governance-and>

[8] Corresponding GCF activity budgets (in EUR) are: Activity 1.5: 618,900; 1.7: 471,500; 2.1: 790,600; 2.2: 283,000; 3.1: 833,400; 3.2: 99,200. Total = 3,096,600 EUR. At 1 EUR = 1.15 USD, total = 3,561,090 USD.

[9] https://www.kfw-entwicklungsbank.de/PDF/Entwicklungsfinanzierung/L%C3%A4nder-und-Programme/Asien/2020_Projektinformation_Laos-Village-Forest_EN.pdf

[10] 7,000,000 EUR at 1.15 USD per 1 EUR = 8,050,000 USD. (Excludes GoL's additional co-financing of 760,000 EUR to the VFM project.)

[11] *Agriculture for Nutrition (AFN)* project, funded via the Global Agriculture and Food Security Program: <https://www.gafspfund.org/index.php/projects/agriculture-nutrition-programme-afn>

[12] Total AFN funding = 30,000,000 USD.

1.a.6. **A**daptation benefits

For the project's outcome-level indicators, please see Annex A: Project Results Framework.

For the project's contributions to LDCF core indicators, please see Annex E: GEF CCA Tracking Tool.

The LDCF project will provide a range of adaptation benefits and other co-benefits. The project targets LDCF Objectives 1 and 2. The specific adaptation benefits of the proposed LDCF-financed project will include: (i) increasing the resilience of people, communities, and local ecosystems to climate-change-induced droughts and floods; (ii) reducing soil erosion; (iii) improving and maintaining water quality through restored ecosystems; (iv) promoting groundwater recharge and water conservation; (v) providing NTFPs and alternative livelihoods; and (vi) improving food security through intensified and diversified climate-resilient agricultural practices.

The project will mainstream CCA into land-use and value-chain investments related to agriculture and natural resource management, particularly in the northern uplands, where climate vulnerability is especially high. The project will support wide-spread adoption of diversified climate-smart land uses (e.g., climate-proofed production systems) and more resilient climate-smart livelihoods among agricultural communities in the northern uplands. As a result, these communities will have improved resilience and food security with reduced vulnerability to climate change, including chronic trends and acute shocks. There will be reduced degradation of agricultural and forest lands with an increased area secondary or open forest cover.

The LDCF project will transfer innovative technologies that contribute to improved land management and farming practices, enhanced soil fertility, improved nutrient and water resources, and reduced climate-change-induced flooding and soil erosion through the promotion of CSA practices for CCA, including agro-forestry and more sustainable utilization of NTFPs. Current land-degrading farming activities in the northern uplands, notably short-fallow slash-and-burn practices, will be reduced through transfer of innovative sustainable agricultural practices (e.g., fallow-to-perennial transitions), improved natural-resource management and more ecosystem-based farming approaches, notably CSA approaches for CCA, such as minimum/ no-tillage and mixed cropping; utilization of agricultural biomass for rehabilitating soil quality instead of burning; crop rotation/ diversification; identification of climate-resilient and disease-resilient crop varieties using indigenous knowledge; and use of more multi-benefit perennial plants (e.g., fruit trees or ANR in village agroforestry rings). Improved cropland-management practices will increase crop productivity and therefore contribute to food security and improved food nutrition.

The LDCF project will strengthen the enabling environment by mainstreaming climate-adaptability into and policies, regulations, investments, and institutional frameworks to support landscape-level coordination. Under Component 1, the project's coordination initiatives will bring together around 250 key national and sub-national decision-makers and involve at least 8 national and sub-national agencies/ institutions to improve their knowledge and understanding of how to identify, implement, and monitor CCA strategies and measures. In addition, the project's capacity-building for land-use planning will give decision-makers at all levels (particularly PAFO and DAFO) the knowledge, skills, and tools required to integrate and scale up CCA, climate-smart livelihood approaches, and sustainable environmental management into routine land-use and development-planning processes for the northern uplands and throughout Lao PDR. At the local level, the project will mainstream resilience into village land-use plans in each of the project's targeted districts via PFALUPAM (where no current LUPs exist) and by integrating climate-adaptive priorities and considerations into existing plans. Importantly, the expansion of land-use planning also reduces land conflicts and strengthens land-use rights.

The main expected adaptation benefits of this LDCF project at the community level will be an increased capacity to anticipate and adapt to climate change and to manage climate risks and vulnerability. The project will work with local farming communities and markets, through proven models such as Farmer Field Schools and extension services, to help improve the livelihoods and skill sets of local producers. The use of the FFS and rural extension services will ensure that the LDCF resources are applied to an existing structure, thus ensuring cost-effectiveness. The project will utilize existing FFSs and expand the FFS scope to new areas, with linkages to MAF's existing extension resources and other programs, which will allow efficient-scaling up of CCA best-practices and lessons-learned. The project's activities to support better direct participation of communities in the decision-making processes will particularly benefit women and minority ethnic groups in the uplands and help meet gender priorities as co-benefits of the project?e.g. through gender-specific farmer groups formed to develop NTFP resources.

The project will also generate significant climate change mitigation co-benefits in the form of reduced or avoided GHG emissions, such as from reduced prevalence and frequency of traditional slash-and-burn cultivation, and enhanced carbon sequestration (e.g., soil organic content, assisted natural regeneration, agro-forestry). Improved agro-ecological practices will also yield extensive co-benefits for the reduction of land degradation (e.g., reduced erosion, improved soil organic content, increased infiltration of precipitation, reduced incidence of landslides, etc.).

Overall, the LDCF project is expected to benefit around 100,000 people (50% women and 50% men) from around 240 villages in 4 districts. The project will also help restore local degraded natural ecosystems to more climate-resilient states, including (i) an estimated 32,300 ha of agricultural land under climate-smart land-use practices and (ii) an estimated 40,300 ha of degraded forest converted to secondary or open forest, producing a landscape of different forest types, yielding food security, improved ecological functions, diversified livelihood options, and strengthened CCA. In addition, local people, particularly in poor communities, will benefit from greater opportunities for local employment through better networked and more climate-resilient agricultural value chains.

1.a.7. Innovativeness, **capacity development**, potential for scaling up, and durability

The project has several innovative aspects, particularly in the project's targeted contexts. For example, the project will support the transfer of innovative technologies and practices into land-use planning for the targeted provinces, such as via the integration of climate-proofed AEZ mapping (e.g., locally relevant crop-specific similarity and suitability analyses) into land-use planning and value-chain development. Based on climatic forecasts and market assessments, the project will also support transitions to innovative business models for local agricultural production, value-addition, and networking (see Box 3, below). The project will also support land-use planning, transitions, and practices for forest restoration (e.g., assisted natural regeneration, enhancement plantings, fallow-to-perennial transitions, agroforestry, etc.). The integration of climate resilience within the core training provided through FFS (a specific CCA/ CSA module that can be replicated elsewhere in Lao PDR) and through farmer-to-farmer exchanges is also innovative.

Furthermore, the current project's focus is on climate change adaptation, whereas the majority of climate-focused work to date in the environmental, agricultural, and forestry sectors in Lao PDR has been directed largely towards mitigation measures?e.g. REDD+ initiatives. To that end, the proposed project will mainstream CCA into large GCF investments planned for mitigation in the northern provinces, employing a landscape approach to bring interventions to scale.

Additionally, whereas extension approaches in Lao PDR have historically been relatively geographical generalized, this project will support an innovative approach of far more locally specific interventions, reflecting down-scaled climate forecasts, local AEZ and crop-suitability forecasts, local priorities, local markets and value-chain networks, etc.

Box 3: Innovative Business Models

The project will support transitions to innovative business models for local agricultural production, value addition, and networking. These business models are not envisaged to be a fixed set of business plans to replicate across communities or sectors. Rather, they will be a variety of locally appropriate and sectorally specific models that reflect the processes from, for example, Outputs 1.1.2., 2.2.1., 2.2.2., 3.1.2., and 4.1.2.

For example, revisions to some public policies (e.g., assigned local monopsonies, production targets, price-setting, etc.) would reduce market forces that currently homogenize production and risk profiles, especially at local levels. (E.g., see the opportunity assessments associated with *sacha inchi*.) Similarly, strengthened networks between producers and buyers would greatly facilitate market-responsiveness among producers, especially among producer organizations trained to plan production as a business with flexible assets and finances (versus product-specific “lock-in”).

Numerous options exist for better aligning the priorities of producers, processors, and markets, yet these must reflect local realities that differ by community (e.g., historical experiences, infrastructure vulnerabilities, trust and enforcement related to contracts, availability of credit, etc.). Related private investments (e.g., for value-adding equipment or facilities) may be coordinated with local development plans, linking public and private finance (e.g., climate-proofing infrastructure investments partially funded via buyer investments, potentially similar to feed-in tariffs).

Not all such business models require a coordinated network. E.g., Outcome 3.1. will better enable individual land users to assess and improve their own climate-related vulnerabilities in order to prioritize approaches to limit such risks (e.g., diversification, crop-switching, fallow-to-perennial transitions, value addition, storage for improved market timing and resilience to transportation vulnerabilities, etc.).

These sorts of specific models have not been preordained in this project document, because it is critical that all such models be developed in a participatory and inclusive manner (especially as indicated in Outcomes 1.1., 2.2., and 3.1.), facilitated by well informed technical assistance in order to reflect strategies and local priorities for durable results.

These innovative, locally specific approaches will be supported by innovative options for blended financing. Moreover, whereas agricultural and rural investments in Lao PDR have historically been centrally planned with primary reliance on public funding, the project’s financing options will be integrated into a cascade-based approach that prioritizes private-sector investments, facilitative policy reforms, and the judicious use of public resources to “prime the pump” for longer-term, market-sustained durability. Similarly, the project is unique in its planned, sustained engagement with and empowerment of stakeholders across sectors and levels. It is expected that the cross-sectoral engagement platforms (see Outputs 1.1.1., 1.1.2., 2.1.3., and 2.2.1.) will be incorporated into official governmental structures supporting institutional sustainability.

Many of the project’s models and activities to support sustainable, ecosystem-based management at the local level are expected to be replicable and scalable (with some modification) and can will be

replicable to other districts and provinces, particularly others in the northern uplands and mountainous regions elsewhere in the wider region. Indeed, the project areas were partly chosen to represent the variety of different existing land uses, topographies, and ethnic groups in the northern uplands of Lao PDR, so results from introduction and uptake of the CSA approach are expected to be applicable throughout the northern uplands and beyond.

The primary drivers of the project's up-scaling and durability are: (i) local relevance and (ii) market-based incentives. In short, the project's activities will yield durable results and the practices will be up-scaled because the project's approach links CCA with local priorities, diverse benefits, and local empowerment. Lack of funding is a major impediment to up-scaling at all levels. Therefore, rather than relying on significant, sustained public investment, the project supports investments that generate market-based momentum (e.g., linking adaptive supplies with demands, linking climate-adaptive land-uses with improved livelihoods, etc.). The project's targeted capacity-development efforts are aimed at facilitating these aspects. The project's initiatives to build market-based incentives for climate-adaptive land uses are supported by the development of private-sector networks including producers, processors, and buyers (e.g., see support to and expansion of LFN and producer groups) and a facilitative policy context (e.g., see activities under Output 2.2.2. regarding revised quantity- and price-planning). In short, the project uses a cascade-based approach to establish and strengthen market-based conditions that incentivize private-sector actors to undertake and sustain improvements in climate adaptability and resilience for durable results, long after the project has ended and with minimal reliance on continued public-sector funding or intervention.

Box 4: Linking Markets, Land-use, and Investments—a Farm-level Example

Sacha inchi is a perennial vine (when grown in the tropics) that produces nut-like fruits that are high in protein and oil. The crop is very well suited to upland/ sloped production and has low sensitivity to current and forecast climatic changes compared to common commodity crops, especially annual crops, the cultivation of which also tends to exacerbate land degradation (soil exposure, tilling, etc.).

Sacha inchi is shown here (near Napho in Luang Prabang province) cultivated on pole trellises. The farmer is transitioning from bamboo poles to teak poles. Bamboo poles are inexpensive, but will last only one to two years and often collapse, causing crop loss. Farmers often use such low-cost initial approaches to test adoption of new crops and production techniques.

Wooden, metal, and concrete poles are not only more durable and stable (reducing crop losses), but also enable the use of wires, which can triple yields and greatly improve crop quality. However, such investments are expensive and typically require financing and value-chain support.

The growing international demand for sachu inchi poses opportunities for producers, processors, traders, exporters, and the many businesses that support agricultural value chains (e.g., transport, equipment, finance). However, individual actors in the value chain cannot act alone. Taking advantage of such opportunities requires participatory development of locally appropriate business models, value-chain networks, risk-sharing, investment plans, and mechanisms to ensure the equitable transmission of market-based incentives.

This project's activities directly support those initiatives, which build climate adaptability through reduced ecological, economic, and social vulnerabilities as well as increased adaptive capacities at multiple levels.

The guidelines for national and sub-national multi-stakeholder, inter-sectoral coordination developed under Component 1 and local good practices identified under Component 4 (based on activities in Components 2 and 3) are also likely to have wide utility. Some products from the project, including capacity-building at the local level?e.g. CSA training videos and materials, radio programs, and posters?will be designed to facilitate their up-scaling to other districts and provinces, and knowledge management tools and other devices to motivate replication will be established.

Lessons learned on locally appropriate, gender-responsive CCA practices for upland areas in Lao PDR will also be captured for up-scaling and dissemination, and fed into other district-level and provincial planning processes as well as into regional knowledge networks on CSA and CCA. There are also substantial opportunities to scale-up CSA planning approaches, tools and other project results and recommendations through existing baseline projects?e.g. the SSFSNP project operates across 400 villages in upland Laos, including provinces not targeted by the proposed project.

By using existing extension services (TCS) and FFS networks for the project's communication and awareness activities and training in CSA and development of alternative climate smart livelihoods, the

project will provide a route for the dissemination and replication of best practices to other areas and improve the likelihood of broader adoption.

The project will create an improved enabling environment for CSA in the northern uplands and a template for broader replication across Lao PDR with clear roles, responsibilities and needs identified for the different agencies involved with for CSA, supporting relevant capacities and institutional sustainability for promotion of implementation of CSA and climate-smart livelihood options and opportunities, as well as sources of adequate and sustainable financing. Capacity-building activities will be integrated into institutional structures by the end of the project. For example, the project's training of trainers will also improve opportunities for replication and improve the likelihood of durable results. The project will also link to the sustainability strategy of the SSFSNP and other baseline projects.

1.a.8. Summary of changes in alignment with the project design with the original PIF

The project's objective and components have not changed. Outcomes have been edited for clarity and refinement. Outputs have been adjusted to (i) consolidate similar outputs for efficient operational delivery and (ii) edit or add outputs in light of findings during the PPG phase. Table 9 presents a summarized mapping of outputs between the project document and PIF.

Table 9: Mapping of Outputs between the ProDoc and PIF

ProDoc	PIF
1.1.1.	1.1.1., 1.1.2.
1.1.2.	
2.1.1.	2.1.1., 2.1.4., 2.1.5.
2.1.2.	2.1.3., 3.1.1., 3.1.3.
2.1.3.	2.1.2., 2.1.6., 2.2.1.
2.2.1.	2.2.3.
2.2.2.	2.2.1.
2.2.3.	2.2.2.
3.1.1.	3.1.2., 3.1.4.
3.1.2.	2.2.3.

ProDoc	PIF
4.1.1.	2.1.3., 4.1.1., 4.1.3.
4.1.2.	3.1.2., 4.1.2.

Please refer to the document in the roadmap section, which presents a table mapping the adjustments to the logical framework, LDCF budgets, and co-financing from the PIF to this project document.

Although the specific co-financing sources and amounts have shifted, the project has been designed to (i) take advantage of current and arising co-financing opportunities and (b) be robust against such changes in the future.

Moreover, the project's design has focused on aligning with GoL's operations. That is, the project's design has focused on harmonizing with and supporting activities directly executed by GoL's ministries and agencies. This has had the effect of shifting the co-financing focus more toward governmental activities funded via public debt (acquired in part via international organizations) versus via grants, which are more often executed via international and non-governmental organizations.

Compared to the investment mobilized provisionally anticipated in the PIF, the focus of the arranged investment mobilized is somewhat more focused on strengthening knowledge management systems (Component 4). This shift is seen as beneficial to the project's strategic impact and durability of results, because it improves the quality of information available to decision-makers at all levels. The allocation of the project's LDCF funds has shifted somewhat to harmonize with that rebalancing of investment mobilized (i.e., increased budget covering expanded activities under Component 4), but has not appreciably detracted from the investments to Components 1, 2, and 3. In fact, consultations during the PPG phase identified opportunities to increase efficiencies in the project's activities, particularly under Component 1.

[1] Under UNFCCC Scenario A1b

[2] Source: DCC

[3] Dept. of Disaster Management and Climate Change. (2013). *Technology Needs Assessment: Barrier Analysis and Enabling Framework for Climate Change Adaptation*.

[4] GoL does not use a consistent operational definition of "upland". The term is used interchangeably to refer to (i) areas with substantial slope (e.g., >15%), (ii) high-elevation areas (e.g., >800 m), (iii) a broad geographic area that contains sloped areas at higher elevations than surrounding regions, and (iv) the agricultural practices that are traditionally used in such places. Herein, within the context of the project's two focal provinces, "uplands" (noun) refers to use (iii) and "upland" (adjective) refers to use (i), above.

[5] DCC's model is derived from: GIZ. (2014). *Vulnerability Sourcebook*.

- [6] Oudry, et al. (2016). *Assessing Vulnerabilities and Responses to Environmental Changes in Cambodia*.
- [7] NC2
- [8] Epprecht, M., Bosoni, N., Ehrensperger, A., Nagasawa, H., Lu, J., Studer, D., Vollmar, P., & Sisoulath, V. (2018). *Socio-economic Atlas of the Lao PDR. Patterns and Trends from 2005 to 2015*. Center for Development and Environment, Univ. of Bern, and Lao Statistics Bureau, Lao PDR. Bern Open Publishing; 124 pp.
- [9] Lipper, L., McCarthy, N., Zilberman, D., Asfaw, S., & Branca, G. (2017). ?Climate smart agriculture: Building resilience to climate change.? *Natural Resource Management and Policy*, 52. Springer; 630 pgs.
- [10] Produced in partnership with World Food Programme and the Government of Sweden.
- [11] Upland rice is typically grown as a subsistence crop, with surplus sold as a cash crop.
- [12] The slightly different stages of development in the photo are due to several factors. For example, irrigated fields are better able to support a wider range of photo-insensitive (short-season) rice varieties. Upland rice is also more often in need of replanting due to bad weather (e.g., false starts), so may get a later start. Upland rice is also less amenable to application and infiltration of fertilizers.
- [13] ? Self, T. 2019.
- [14] ? Self, T. 2019.
- [15] Dupin et al. (2002).
- [16] ? Self, T. 2019.
- [17] World Bank. (2018). *Commercialization of Rice and Vegetables Value Chains in Lao PDR: Status and prospects*.
<http://documents1.worldbank.org/curated/en/577801535723026712/pdf/Commercialization-of-Rice-and-Vegetables-Value-Chains-in-Lao-PDR-Status-and-Prospect.pdf>
- [18] MAF. (2014). *Plan of Action for Disaster Risk Reduction and Management in Agriculture 2014-2016*. <http://www.fao.org/3/a-at540e.pdf>
- [19] Yusuf, A. A., & Francisco, H. (2009). *Climate Change Vulnerability Mapping for Southeast Asia*. IDRC, EEPSEA, SIDA, & CIDA.
<https://www.idrc.ca/sites/default/files/sp/Documents%20EN/climate-change-vulnerability-mapping-sa.pdf>
- [20] Lazar, 2014. *Shifting Cultivation in Laos: Transitions in Policy and Perspective*. Clark University, USA. Available at:
https://www.researchgate.net/publication/261988092_Shifting_Cultivation_in_Laos_Transitions_in_Policy_and_Perspective
- [21] Average gross forest-cover loss in Houaphan Province was 3,263 ha/year between 2000 and 2015.
- [22] Huaphanh's Provincial REDD+ Action Plan (PRAP), 2017 and Luang Prabang PRAP, 2017
- [23] Data from aggregated district-level socio-economic plans for 2016-2020 in Houaphan province.
- [24] For those crops (e.g., maize/ dent corn, upland rice), the project can support agroecological improvements in production practices. (See Output 3.1.1.)

[25] Sylvester, J., Cilento, C., Khouangvichit, V., Manysoth, S., and Bounphasouk, D. 2020. *Towards deforestation-free agricultural investments in northern Lao People's Democratic Republic - Analysis and baseline report*. Vientiane, FAO.

[26] Bopha & Glaeser, 2018.

[27] *Lao Coffee Sector Development Strategy to 2025*; Bopha & Glaser, 2018.

[28] MoNRE-DCC. (2017). *Technology Needs Assessment: Barrier Analysis and Enabling Framework for Climate Change Adaptation*. <https://tech-action.unepdtu.org/wp-content/uploads/sites/2/2017/11/tna-baef-adaptation-lao-pdr-final.pdf>

[29] <https://rtm.org.la>

[30] <http://investlaos.gov.la>

[31] The NRTP includes Sectoral Working Groups for 1. Health, 2. Education, 3. Governance, 4. Macroeconomics, 5. Trade and Private Sector, 6. Infrastructure, 7. Mine Action and Unexploded Ordnance, 8. Illicit Drug Control, 9. Agriculture and Rural Development, and 10. Natural Resources and Environment.

[32] Bartlett, A. (2017, Nov.). *12 Practical Measures to Help Small Farmers Get a Better Deal under Commercial Agriculture in Laos*. Discussion paper prepared for the Sub-sectoral Working Group on Farmers and Agribusiness (SSWG-FAB).

[33] NAFRI & IPSARD (2017). *Analysis of Contract Farming in Laos*. Presentation to the Sectoral Working Group for Agriculture and Rural Development. Vientiane, Lao PDR: 27 Sept 2017.

[34] Wandschneider, T. (2011). *Enhancing Market Information for Food Security in Lao PDR*. Mission Report, FAO.

[35] Smallholder Agricultural Market Development in the Uplands (SADU) (2012). *Value Chain Development in the Context of the Lao PDR: Lessons learnt and recommendations for future support*. End of project workshop summary.

[36] Gebert, R. (2010). *Farmer Bargaining Power in Lao PDR: Possibilities and pitfalls*. Lao Extension for Agriculture Project (LEAP).

[37] Castella, J., Bouahom, B., Keophoxay, A., & Douangsavanh, L. (2010). Managing the transition from farmers' groups to agricultural cooperatives in Lao PDR. *Lao Journal of Agriculture and Forestry*.

[38] Lestrelin, Pelletreau, & Valentin. (2006). ?Local Knowledge and Land Degradation: Participatory Case Study in the Uplands of the Lao PDR.? In: *Proceedings of the Conference on Sustainable Sloping Lands and Watershed Management: Linking Research to Strengthen Upland Policies and Practices* (2006, Luang Prabang, Lao PDR). Available via: http://horizon.documentation.ird.fr/exl-doc/pleins_textes/divers12-08/010043653.pdf

[39] Lacombe, Valentin, Sounyafong, de Rouw, Souleuth, Silvera, Pierret, Sengtaheuanghoung, & Ribolzi. (2018). ?Linking crop structure, throughfall, soil surface conditions, runoff and soil detachment: 10 land uses analyzed in Northern Laos.? *Science of the Total Environment*, 616?617, p. 1330-1338.

[40] Lestrelin, Vigiak, Pelletreau, Keohavong, & Valentin. (2012). *Challenging Established Narratives on Soil Erosion and Shifting Cultivation in Laos*, Vol. 36, Issue 2, p. 63?75.

- [41] Lestrelín & Giordano. (2006). "Approaching land degradation in the uplands of Laos: Looking beyond the proximate causes." In: *Proceedings of the International Symposium Towards Sustainable Livelihoods And Ecosystems In Mountainous Regions* (7-9 March 2006, Chiang Mai, Thailand).
- [42] Two recently established demonstration plots with intercropping were visited, but the practice had not yet been adopted by any communities visited. One parcel of shade-grown coffee was observed, as were some enrichment plantings of NTFPs.
- [43] Self, T. 2019.
- [44] Ministry of Planning and Investment, Lao PDR. 2017 Statistical Yearbook.
- [45] GEF-funded projects have been excluded from co-financing.
- [46] Lao PDR's REDD+ program identifies the six northern provinces of Bokeo, Huaphanh, Luang Namtha, Luang Prabang, Oudomxay, and Sayaboury as the pilot region, and also the target area of the national Emissions-reduction Program. These provinces have hosted early actions on REDD+, including provincial planning on REDD+. Whereas the readiness proposal is generally intended to support the National REDD+ Strategy, these six provinces will be prioritized for field data and case studies.
- [47] "A landscape approach deals with large-scale processes in an integrated and multidisciplinary manner, combining natural resource management with environmental and livelihood considerations. The landscape approach also factors in human activities and their institutions, viewing them as an integral part of the system rather than as external agents. This approach recognizes that the root causes of problems may not be site-specific and that a development agenda requires multistakeholder interventions to negotiate and implement actions." See: <http://www.fao.org/land-water/overview/integrated-landscape-management/en/>
- [48] The cascade-based approach is a step-wise decision framework that seeks to limit public-sector financial supports in favor of private-sector options where possible. In this framework, the most favorable option is a sustainable private-sector solution that limits public debt and contingent liabilities. The second-most favorable option is one that enables a sustainable private-sector solution either (i) by implementing regulatory reforms or (ii) by using short-term external assistance. The least-favorable option is one that relies on public-sector financing, particularly over the long term.
- [49] World Bank. (2017). *Maximizing Finance for Development: Leveraging the private sector for growth and sustainable development*. Available via:
http://siteresources.worldbank.org/DEVCOMMINT/Documentation/23758671/DC2017-0009_Maximizing_8-19.pdf
- [50] E.g.: Cordella, T. (2018). *Optimizing Finance for Development (English)*. Policy Research working paper; no. WPS 8320. Washington, D.C.: World Bank Group.
<http://documents.worldbank.org/curated/en/859191517234026362/Optimizing-finance-for-development>
- [51] Several potential focal agencies and organizations have been proposed, including DALAM, MPI, MoIC, and SWG-ARD.
- [52] E.g.: Cordella, T. (2018). *Optimizing Finance for Development (English)*. Policy Research working paper; no. WPS 8320. Washington, D.C.: World Bank Group.
<http://documents.worldbank.org/curated/en/859191517234026362/Optimizing-finance-for-development>
- [53] E.g., "Vegetable farmers in the Bolovens are reaching international markets."

<http://www.fao.org/laos/programmes-and-projects/success-stories/bolovens/en/>

[54] As of March 2020, the report is drafted and forthcoming. It will be available as a resource during the project's implementation. See also: Goldman, L., Tsan, M., Dogandjeva, R., Colina, C., Daga, S., & Woolworth, V. (Dalberg Global Development Advisors). 2019. *Inflection point: Unlocking growth in the era of farmer finance*. The Initiative for Smallholder Finance, The MasterCard Foundation, USAID, Rural and Agricultural Finance Learning Lab, & Global Development Incubator.

[55] E.g., philanthropies, impact investors, micro-finance institutions, value-chain finance, angel investors, venture capital firms, private equity funds, commercial banks, institutional investors, etc.

[56] For instance, FAO, CIAT, and the World Bank have partnered with the government of Bangladesh to develop a CSA investment strategy aligned with a broader regional programme of CSA-supportive investments. Additionally, FAO is supporting Bangladesh, Cambodia, Lao PDR, Myanmar, the Philippines, and Viet Nam to use CSA to deliver on the 2030 Agenda. FAO is also currently developing private-sector investment opportunities in CSA, which will inform the delivery of the Lao CSA project.

[57] It is anticipated that the assessment tool will gather data via a representative sampling at household level within targeted districts, such that the data reflect means and variances of household-level indicators by district.

[58] Link to guidelines for FAO's Tool for Agroecology Performance Evaluation (TAPE):

<http://www.fao.org/3/ca7407en/CA7407EN.pdf>

[59] FAO. 2019. *TAPE Tool for Agroecology Performance Evaluation 2019 ? Process of development and guidelines for application. Test version*. Rome (See p. 6 for quotation.)

[60] Fayon, S. 2019, Dec. *Analysis of SRP and TAPE duplication, complementarities and synergies*. Produced as part of FAO's technical cooperation program on 'Addressing the 2030 Agenda on climate change and food security through Climate-Smart Agriculture' (TCP/RAS/3604) and FAO's support to the Sustainable Rice Landscapes Initiative under the GEF-7 Food Systems Impact Program.

[61] Bangkok, Thailand. Sept 2019.

[62] Subject to TAG and PSC consultation during inception. TAPE might also be operationalized via the Kobo platform, as has been piloted by FAO in Lao PDR, Cambodia, and Vietnam.

[63] IUCN's Principles of Nature-based Solutions:

1. Embrace nature conservation norms (and principles);
2. can be implemented alone or in an integrated manner with other solutions to societal challenges (e.g. technological and engineering solutions);
3. are determined by site-specific natural and cultural contexts that include traditional, local and scientific knowledge;
4. produce societal benefits in a fair and equitable way, in a manner that promotes transparency and broad participation;
5. maintain biological and cultural diversity and the ability of ecosystems to evolve over time;
6. are applied at a landscape scale;
7. recognise and address the trade-offs between the production of a few immediate economic benefits for development, and future options for the production of the full range of ecosystems services; and
8. are an integral part of the overall design of policies, and measures or actions, to address a specific challenge.

<https://www.iucn.org/commissions/commission-ecosystem-management/our-work/nature-based-solutions>

[64] However, the quality of forecasts is likely to be low?especially in more remote areas that do not have nearby stations?until the AWS system is further expanded.

[65] E.g., FAO's *Sourcebook for Climate Smart Agriculture* (2017): <http://www.fao.org/climate-smart-agriculture-sourcebook/en/>

[66] One way to think about the 20th percentile would be to ask, ?If someone were to adopt this practice, what would be the worst value for this factor that they would expect to see in any given 5-year period?? E.g., if a farmer were to grow cashews, what would be the lowest farm-gate price for cashews that s/he might expect to see in a 5-year period? What would be the highest wage labor cost s/he would likely see in a 5-year period? The 50th percentile could be thought of as a normal or generally expected value for a given factor (i.e., the value one would expect in a normal year). The 80th percentile is like the 20th percentile, but for the *best* rather than the *worst* value in a 5-year period (e.g., the *highest* expected farm-gate price for cashews in a 5-year period).

[67] I.e., if people see someone doing well with something, many people copy it.

[68] laofarmers.net

[69] NTFPs comprise numerous products, but because production is relatively small-scale and fragmented, they generally share similar value-chain networks.

[70] The Bamboo and NTFP Development Association (BNDA) already has significant information on value chains for several varieties of bamboo, including *no cha* (fresh bamboo shoot; Feb ? May), *khum* (bitter bamboo shoot; Dec ? Mar), *hoke* (dried bamboo shoot; Aug ? Sept), *maikwana* (slash and sticks for chopsticks; Nov ? Jul), and handicrafts.

[71] *NB*: For this output, ?NTFP? refers to species collected from forests (whether wild or from enrichment plantings), not cultivated outside forests. However, colloquial use of the term ?NTFP? is somewhat ambiguous in Lao PDR. It is sometimes used to refer to the product itself (specimen vs. species) and sometimes to refer to the source (actual forest, designated forest land, wild growth, etc.). During PPG consultations, different interviewees used ?NTFP? to refer to (i) *specimens* collected from forests, (ii) *species* authorized for collection from officially designated forest areas (even if the species is cultivated outside of forests), or (iii) harvested wild *specimens* that were not cultivated nor necessarily forested. Interviewed officials were unaware of an official definition of NTFP for policy. If one exists, it does not seem to affect local governance of NTFPs.

[72] Information and suggestions are already generally available for cardamom based on prior projects. Other NTFP options include benzoin, galangal (including fruits), pepper wood, pepper mulberry, wild taro, rattan shoots, mushrooms, medicinal plants (e.g., black ginger), local bananas, and fodder. (Agar would be discouraged due to its tendency to incentivize arbitrary tree-cutting.)

[73] During PPG consultations, several stakeholders expressed interest in increasing profitability for beef cattle production. However, other livestock offer far more likely and efficient opportunities for improving livelihoods and climate resilience than would beef (e.g., breed access, selective breeding, herd management, fodder production, grazing access, labor, cultural norms for cattle husbandry, disease management, management intensity, etc.). Moreover, meat chickens and goats offer more culturally normative opportunities for women than do beef cattle, which are generally culturally associated with men. Meat chickens and goats also require lower initial capital investments and pose lower risks per head than cattle do, making the former more accessible to poorer households.

[74] <http://www.fao.org/farmer-field-schools/home/en/>

[75] <http://www.fao.org/farmer-field-schools/news-events/detail-events/en/c/1185937/>

[76] In consultation with the TAG, the PSC may approve additional content or modules as core components of the project's FFS content.

[77] FAO. (2017). *Sourcebook for Climate Smart Agriculture*. <http://www.fao.org/climate-smart-agriculture-sourcebook/en/>

[78] It has been provisionally agreed that these selections will be consistent at district level (i.e., all communities in a district receive the same FFS package) in order to balance concerns for (a) local relevance and (b) economies of scale in delivery. That is, different packages for each village would be highly tailored, but impracticable for delivery. Conversely, a single package for all participants would be highly cost-efficient, but likely insufficiently tailored to local priorities. This decision regarding district-level consistency may be reconfirmed and revisited during the project's implementation to ensure an appropriate balance.

[79] As above, the level at which FFS packages are selected will be revisited at inception and may be adjusted during implementation to fit the delivery context. Provisionally, districts have been selected in order to balance competing concerns for local relevance and resources (e.g., cost, materials, facilitators). During implementation, the PMU may identify operational efficiencies that would enable greater local discretion, or delivery challenges that necessitate greater standardization. Such issues and opportunities will be handled by the PSC.

[80] This is not a list of FFS modules, but an indication of the expected *content* to be covered by FFS modules. Many topics will be combined into thematic modules, which may reflect AEZ and suitability mappings.

[81] Lao PDR's Emission Reductions Program Document (ERPD), Annex 9, Table 1. https://www.forestcarbonpartnership.org/system/files/documents/LaoPDR_ERPD_FinalDraftMay.2018-Clean.pdf

[82] Though potentially standardized at district or other level, as noted above.

[83] Conversion rate: 9,000 LAK = 1 USD

[84] Although different wages may be offered for different types of work, the project will ensure that wage labor is equally available to men and women, and that wage rates are equivalent for men and women.

[85] I.e., for CRIP expenditures, communities must formally approve the contracted arrangements for delivery (e.g., budget, designs, providers, timelines, access, etc.), accept the work (i.e., deem it acceptable and sufficient for payment), and approve payments to contractors and other service providers. In the case of disagreements, the PMU may arbitrate the matter while it is elevated through the project's grievance process, as appropriate or necessary.

[86] Payments must also meet procurement standards, be approved via the PMU, and be auditable as part of the project.

[87] Traditionally and currently, shifting agriculture is practiced on areas designated by communities for that use. Communities rarely clear designated forest areas except to accommodate population growth. However, forest land is sometimes cleared by companies with agricultural land concessions.

[88] The duration of traditional and current fallow periods is highly variable and depends largely on the extent to which communities treat forestry (in a colloquial rather than formal sense) and agriculture separately. The more the concepts of forestry and agriculture overlap, the more likely it is that communities allocate large areas for low-intensity shifting cultivation with longer fallow periods, but with less area formally designated as forest (protected, conservation, or production). Within the project

area, this approach is somewhat more common in Houaphan. Alternatively, the less these land-uses overlap conceptually, the more likely communities are to allocate more land to formally designated forest and to increase the intensity of cultivation practices in designated agricultural areas, often to the extent of practicing rotational production on permanent plots (e.g., rotating two crops and one fallow between three set paddocks). Within the project area, this approach is somewhat more common in Luang Prabang. This latter production approach is often advocated by the government as 'stable' or 'rotational' agriculture, which the government has considered preferable to shifting agriculture. Although these production approaches are often discussed dichotomously (i.e., as if a community practices either one or the other), they are more accurately considered points on a spectrum of production approaches, such that many communities follow approaches that are somewhere in between.

[89] E.g. being developed through the World Bank. See <https://csai.worldbank.org>, and see: *Measures to Measure Progress towards Climate-smart Agriculture (CSA) Goals*. Research program on Climate Change, Agriculture and Food Security. CGIAR, CCAFS. Available via: <https://ccafs.cgiar.org/csa-programming-and-indicator-tool> And CSA Planning and Indicator Tool at <http://bit.ly/CSA-PNI-Tool>

[90] E.g., see: Cui, Z., Zhang, H., Chen, X., *et al.* (2018). Pursuing sustainable productivity with millions of smallholder farmers. *Nature* (Letters), 1-16. doi:10.1038/nature25785.

[91] LaCSA demonstration website: <http://147.46.250.219:8081/>

[92] https://www.thegef.org/sites/default/files/documents/Cofinancing_Guidelines.pdf

[93] https://www.thegef.org/sites/default/files/publications/23469_LDCF_1.pdf

[94] https://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.ME_C.55.inf_.01_Additionality_Framework_November_2018.pdf

[95] <https://www.ifac.org/system/files/publications/files/budget-reporting.pdf>

[96] https://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.C.54.10.Rev_.01_Co-Financing_Policy.pdf

[97] Lao Extension Approach (LEA)

[98] Estimated USD equivalent for projected value over duration of project (Jan 2021 - Dec 2025)

[99] <https://projects.worldbank.org/en/projects-operations/document-detail/P161473>

[100] Total project budget is 29,000,000 USD.

[101] <https://www.ifad.org/en/web/operations/project/id/2000001131>

[102] <https://www.gafspfund.org/sites/default/files/inline-files/final%20design%20report%20-%20GAFSP-SSFSNP.pdf>

[103] These initiatives meet the GEF and LDCF definitional criteria of 'Investment Mobilized' (see table at beginning of Section II.1.a.5), but do not have formalized co-financing agreements.

[104] <http://documents1.worldbank.org/curated/en/387201559354572095/pdf/Lao-People-s-Democratic-Republic-Second-Programmatic-Green-Growth-Development-Policy-Operation-Program-Document.pdf>

[105] Total loan amount = 40,000,000 USD.

[106] There is the possibility of co-financing via Phase 3, which could be identified based on the GGDPO3 triggers noted in the PAD for GGDPO2. (See link in footnote above.)

[107] For description of NGGS, see prodoc section II.7. *Consistency with National Priorities*.

[108] <https://www.greenclimate.fund/document/implementation-lao-pdr-emission-reductions-programme-through-improved-governance-and>

[109] Corresponding GCF activity budgets (in EUR) are: Activity 1.5: 618,900; 1.7: 471,500; 2.1: 790,600; 2.2: 283,000; 3.1: 833,400; 3.2: 99,200. Total = 3,096,600 EUR. At 1 EUR = 1.15 USD, total = 3,561,090 USD.

[110] https://www.kfw-entwicklungsbank.de/PDF/Entwicklungsfinanzierung/L%C3%A4nder-und-Programme/Asien/2020_Projektinformation_Laos-Village-Forst_EN.pdf

[111] 7,000,000 EUR at 1.15 USD per 1 EUR = 8,050,000 USD. (Excludes GoL's additional co-financing of 760,000 EUR to the VFM project.)

[112] *Agriculture for Nutrition (AFN)* project, funded via the Global Agriculture and Food Security Program: <https://www.gafspfund.org/index.php/projects/agriculture-nutrition-programme-afn>

[113] Total AFN funding = 30,000,000 USD.

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

Please refer to the site selection report in the roadmap section for a full explanation of the project's site-selection process and considerations.

Figure 21: Districts of Luang Prabang and Houaphan



Table 10: Districts and District Codes

Luang Prabang		Houaphan	
District	Code	District	Code
Luang Prabang	601	Xamneua	701
Xieng Ngeun	602	Xiengkhor	702
Nan	603	Hiem	703
Park Ou	604	Viengxay	704
Nambak	605	Huameuang	705
Ngoi (Ngoy)	606	Xiamtay	706
Pak Xeng	607	Sopbao	707
Phonxay	608	Et	708
Chomphet	609	Kouan	709
Viengkham	610	Xon (Sone)	710
Phoukhoun	611		
Phonthong	612		

Table 11: Provisionally Selected Target Districts

Provisionally Selected Target Districts			
Luang Prabang		Houaphan	
District	Code	District	Code
Viengkham	610	Xiengkhor	702
Phonthong	612	Kouan	709

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Civil Society Organizations Yes

Indigenous Peoples and Local Communities Yes

Private Sector Entities Yes

If none of the above, please explain why:

2.a. Indigenous peoples

The concept of 'indigenous' is somewhat difficult to apply in Lao PDR and the government prefers instead to refer to Laos as a 'multi-ethnic society'. Lao PDR is home to at least 49 ethnic groups comprising at least 240 sub-groups.^[1] In fact, the vast majority of people in Lao PDR, particularly in rural areas, could be considered indigenous people. The approach used in the development of this project has been to ensure extensive participation by and consultation with local communities.

As indicated in the accompanying documentation on stakeholder engagement, the project's formulation has benefited from extensive consultations with local communities (virtually all of which, as noted, can be considered indigenous, as well as with governmental and CSO advocates of rural and indigenous communities), whose priorities, concerns, vulnerabilities, and perspectives have been reflected in the project's design and institutional arrangements. For example, the project has been designed to empower local communities to make decisions about how best to use project resources for strengthened local climate adaptability (e.g., flexible CRIPs supported by technical assistance and capacity development via Farmer Field Schools with flexible modules to fit local priorities). This approach ensures that interventions at local levels are locally agreed, locally led, locally empowered, and locally sustained.

It has also been noted that the project's outcomes and activities will address numerous challenges and vulnerabilities faced by rural communities of ethnic minorities.^[2] For example, the project's main focus of increasing climate adaptability will increase local adaptive capacities and reduce harms experienced from climate change, as well as providing economic stability and buffers against many forms of shocks. Moreover, the project's support of land-use planning helps formalize boundary demarcations that provide a more formal basis to adjudicate land-use disagreements (e.g., encroachments). Ultimately, it is anticipated that as with all stakeholders and local communities with whom the project will engage, indigenous people will have empowered and participatory roles in the extent and types of activities conducted in partnership with their communities. Additionally, the project will also ensure that all materials are available in local languages.

Furthermore, the project's implementation will continue to align with the Prime Ministerial Decree on Ethnic Groups (issued 30 March 2020), which mandates that all governance must abide by principles that ensure unity and equality with regard to the various ethnic groups in Lao PDR. Additionally, the decree ensures that ethnic groups are able to practice their respective customs and traditions, provided that they do not infringe on other groups' rights or violate other laws. The decree also bans discrimination based on ethnicity and promotes the provision of equal opportunities for members of all ethnicities.

The project poses no appreciable risks to indigenous communities, though there are opportunities to ensure that the project maximizes benefits to these communities, such as with respect to their socio-economic conditions, their control over or access to natural resources, and their levels of power in decision-making and planning. The project has been designed to take advantage of such opportunities. The project will continue to follow the requirements of FAO's Environmental and Social Safeguard 9 regarding indigenous peoples and cultural heritage, including free prior informed consent (FPIC).

Therefore, a separate Indigenous Peoples Plan has not been developed for this project. However, consistent with the FAO Policy on Indigenous and Tribal Peoples, the project will be implemented following the core principles of: (i) self-determination, (ii) development with identity, (iii) free prior and informed consent, (iv) participation and inclusion, (v) rights over land and other resources, (vi) cultural rights, (vii) collective rights, and (viii) gender equality. In order to avoid adverse effects, the project will follow these principles, by facilitating participatory mechanisms for decision-making, as well as ensuring free, prior, and informed consent before the implementation of activities.

[1] 2005 Lao National Census

[2] E.g., see: IFAD & AIPP. (Nov 2012). Country Technical Note on Indigenous Peoples' Issues: Lao People's Democratic Republic. Available via:
<https://www.ifad.org/en/web/knowledge/publication/asset/40261534>

Please provide the Stakeholder Engagement Plan or equivalent assessment.

Please see **Annex G** for the Environmental and Social Risk Assessment.

Please see **Annex H** for the Stakeholder Mapping.

Please see **Annex I** for the Stakeholder Engagement Plan, including an overview of stakeholder consultations during the PPG phase, planned stakeholder consultations during implementation, information dissemination, and the mechanism to redress stakeholders' grievances, if any.

Please see **Annex L**: Site-selection Process for an extended overview of various aspects of local communities in the targeted areas.

Stakeholder Engagement Matrix ? Project Formulation

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
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Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Department of Agricultural Land Management (DALaM), MAF	<p>Farmers in target districts</p> <p>Capacity of PADO/DAFO officials who executing the project activities</p>	DALaM has responsibility at national level for developing approaches and practices for agricultural land use planning and sustainable land and soil management, as well as for monitoring the development of these areas of the agriculture sector. It will be the main executing partner for this project.	Focus Group Discussion (FGD) with DDG and LUP technician	<p>DALaM showed high interest in executing the project; however, there is limited capacity of PAFO/DAFO staff on LUP.</p> <p>The Agriculture Land Use Planning Center's (ALUPC) staff were trained by projects (TABI, etc.) on LUP approaches and they are confident in delivering the LUP activities.</p> <p>FALUPaM is considered the main LUP approach by DALaM; however, in 2018, the department also published a guideline on Participatory Agriculture Land Management (PALM) which is considered a new version of PLUP.</p> <p>With funding by ACIAR, the department demonstrates soil improvement techniques in Viengxay district.</p>	10th Sept . 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
National Agriculture and Forestry Research Institute (NAFRI), MAF	Farmers in target districts	NAFRI is mandated to undertake integrated agriculture, forestry and fisheries research in order to provide technical information, norms and results which help to formulate strategy in accordance with the government policies. NAFRI has four main functions including: carrying out adaptive research, developing methods, tools and information packages, providing policy feedback, and coordinating and managing research.	FGD with DDG and Deputy Head (DH) of RCCCCR	<p>NAFRI's Research Center for Climate Change and Resilience in Agriculture (RCC CRA) is in charge of the CC issues, the center has implemented the Improving the Resilience of Agriculture Sector (IRAS) project activities in XYBL and SVNK provinces.</p> <p>In collaboration with other development organization within NAFRI (CIAT), NAFRI aims to improve the resilience of agriculture sector particularly at grassroot levels.</p>	10th Sept . 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Department of Rural Development and Cooperative (DRDC), MAF	Farmers in target districts; particularly in focal point areas	<p>DRDC was newly restructured and has mandates to implement rural development for national focal sites as well as to support the development of agricultural cooperatives and other types of farmers' organizations.</p> <p>DRDC has mandates to comprehensively support the focal sites (technical extension, improvement of infrastructure, education and capacity building, etc.).</p> <p>The department plays coordination role in engaging the stakeholders to execute the approved activities in target sites.</p>	FGD with DG, related DHs and technicians from related divisions	<p>Currently, there are national focal sites for national development and poverty alleviation including 4 in LPB (Phonsay, Pakxeng, Viengkham and Phoukhoun), and 6 in HPH (Houameung, Sop Bao, Xiengkho, Kone, Hem and Sam Neua).</p> <p>A total of 47 cooperatives in Lao PDR, of which 21 are agricultural cooperatives.</p> <p>It is expected that by 2021/21, the department will be modified the law on cooperative.</p> <p>Based on Decree No. 348, there are 17 priorities for the DRDC including: Food security and livelihood, stable agricultural practices; Promotion of access to trade and marketing information; and Disaster risk management; etc. (Details are attached).</p>	<p>11th Sept . 2019</p> <p>22nd Oct. 2019</p>

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Department of Forestry (DoF), MAF	Farmers in target districts who access to NTFPs and the use of community forest	DoF is responsible for the management of three types of forest (production, protection and conservation), including production of NTFPs, and for promoting ANR, as well as leading awareness raising and providing local level technical training on forest management.	FGD with HD (Planning and Finance Division)		12 th Sept . 2019
Department of Technical Extension and Agro-Processing(DTEAP), MAF	Farmers in target districts PADO/DA FO officials executing the project activities	DTEAP is responsible for technical guidance to provincial and district level agricultural extension services provided by PAFO and DAFO (see below). The project will work with the extension services to build local farmer capacity in CSA and development of NTFP enterprises.	FGD with DDG and related divisions		12 th Sept . 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Department of Policy and Legal Affairs (DoPLA), MAF	Nationwide and local policies on agriculture sector	DoPLA has been newly established in 2017 with the mandates of a secretariat agency that is responsible to study and synthesize socio-economic and market issue on behalf of the GoL, and to act as the focal point for the identification, development and preparation of sector policies and strategies as well as laws and legislation in line with the National Socio-Economic Development Plan (NSEDPlan) as set out for relevant periods.			Feb. 2020
Department of Agriculture (DoA), MAF	Farmers in target districts PADO/DA FO officials executing the project activities	DOA has mandate to undertake national agronomic development plan for ensuring national food security and promoting commercial production. DOA promotes clean and green products through monitoring of input supply and national plant protection.			Feb. 2020

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Committees for the Advance Women (Sub-CAW), PSO, MAF	Female farmers in target districts	Sub-CAW is managed under Permanent Secretary Office (PSO) of MAF with mandate to promote gender equity and empowerment women in agriculture sector.	Discussion with Head of Sub-CAW during the IW	<p>The Sub-CAW has developed the vision of National Committees for Advance Women in Agriculture Sector to 2025.</p> <p>The vision highlights women participation in all project activities of at least 30%. Women should participate in all process, especially, during the decision making and income saving.</p> <p>One of the concerns is about women's workload through promotion of the CSA.</p>	13 th Sept .

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Provincial and District Agriculture and Forestry Offices (PAFO/DAFO), MAF	<p>Farmers in target districts</p> <p>Capacity of PADO/DAFO officials executing the project activities</p>	PAFOs and its associated DAFOs have the mandate to manage and support the sustainable development of agriculture and production forest areas. The PAFOs provide the provincial level plan and coordination for the sustainable development of the agricultural sector and contribute to the Socio-economic Development Plan (SEDP) at provincial levels. Whilst DAFOs provide technical extension services at grassroot levels.	FGDs with Head of PAFO and HDs of line divisions (Planning, Land, Forestry, Irrigation and Livestock, etc.)	<p>PAFOs/DAFOs will be the key executing modalities for project activities covering LUP, soil conservation, agroforestry, clean and green production and IPM, water supply, farmer organization, among others, particularly in relation to Components 2 and 3.</p> <p>In both LPB and HPH, PAFOs showed high interested in project implementation; however, limited capacity of PAFOs/DAFOs linking to the promotion of agri. VCs is a concern.</p> <p>Two main priorities for PALaM are LUP and land management and development. In LPB, a total of 187 villages has been LUP; however, different sources reported different numbers.</p> <p>Both PAFOs have developed their five-year plan (2021-2015) as part of the PSEDP.</p>	16th-24th Sept. 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Department of Climate Change (DCC), MONRE	Farmers in target districts	DCC's mandate is to act as the focal point on climate change in Lao PDR and supports the national NAP process. It acts as the "national focal point" on climate change actions and initiatives, and coordinates a number of the national government's activities related to the UNFCCC. It undertakes RCP4.5 and 8.5 short and long-term projection.	FGDs with HD of Climate Change Adaptation Division and technical staff	<p>The main mandate is to support the SDG. The five-year action plan for NDC has been proposed.</p> <p>The department has team to produce the vulnerability assessment. The department has produced a report on the historical climate change, climate vulnerability and climate change projection in Lao PDR in 2016.</p> <p>However; there is no indicator for adaptation matrix, and as the department is still new, the capacity building at national and local levels will be needed to support the NAP.</p>	10 th Sept . 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Department of Environmental Quality Promotion (DEQP), MONRE	Farmers in target districts	DEQP previously hosted the GEF Focal Point of the Government of Lao PDR (now under DOPC), and is responsible for ISP (Integrated Spatial Planning (ISP) and environmental impact assessments as well as Strategic Environment Assessment (SEA) . It also steers the Lao Environmental Protection Fund funded by GEF/World Bank.	Meeting with DG	<p>The ISP is focuses on 8 land categories and time period is 5 years started in Sept. 2009.</p> <p>The National Assembly aims to have LUP for all provinces by 2020.</p> <p>DEQP's mandate is to enforce the environment protection law as well as to incooperate the environment and climate change sectors at all levels, particularly to promote clear environment thru education, recycling and waste management.</p>	10th Sept . 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Natural Resources and Environment Information Center (NREIC)	Nationwide farmers, particularly in project target areas	NREIC are working on the development of indicators for agricultural investments, the development of land register databases, and agricultural investment safeguards.	FGD with Director and HDs of related divisions (Mapping, Statistics, Data management)	<p>Some secondary information was consolidated from provinces and districts based on five groups (soil, water, methodology, environment and pollution, and disaster) thru using SOP and expected that the results will be published by 2021.</p> <p>The center was newly restructured and limited outputs were reported.</p> <p>There has been some link between the center and DALam.</p>	10 th Sept . 2019
Department of Water Resources (DWR)	Farmers in target districts	DWR is responsible for the planning, management, conservation, and development of national water resources, including surface water and groundwater.			Proposed meeting during project inception phase
Department of Metrology and Hydrology (DMH)	Nationwide farmers, particularly in project target districts		FGD with DDG and HD (Planning and Cooperation)		10 th Sept . 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Lao Women's Union (LWU).	Female farmers in target districts	LWU has equivalent ministerial status with an organizational structure ranging from the central level to the grassroots. Its work focuses on the promotion of gender equality, cultural heritage and the rights of all ethnic groups in preserving and developing Lao PDR based on the 5 year plan for women development at national, provincial and district levels.	FGD with DDG and HDs (Planning and International Cooperation)	<p>Currently, the LWU is consolidating the last 5 years experiences and plan for 2021-2025, to at least include women in all activities with 30% at national level, 40% at provincial and district levels. Other focuses are to promote women starters in SME sectors and creation of income generation activities for women.</p> <p>At local levels, the LWU works with lines offices to empower women thru trainings and linking to the markets for both on-farm and off-farm income. In agriculture, the union supported some nutrition sensitive agriculture thru enhancing gender awareness. Support the organic vegetable producer groups.</p> <p>Some lessons learnt on indigenous knowledge, gender awareness, land titling and self-income generation for women are highlighted.</p> <p>Limited information on gender's role and performance was reported.</p>	27 th Sept . 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Lao Front for National Development (LFND)	Farmers in target districts, particularly the ethnicities	The LFND has vision until the year 2030 that Lao PDR will achieve political stability, peace and unity among all Lao citizens. Each level of LFND will be strongly improved. The LFND will become an integrated political organization, the strong political, fundamental and main focal point in maintaining solidarity among the whole nation.	Desk research	Some general obligations and direction of the LFND are: Strengthen the solidarity within the country based on the relationship of laborers, farmers and intellectuals by having the party?s as the leader. Take initiative in mobilizing and training all Lao people to participate in the activities and national passion and development competition based on the 3 builds slogan with poverty reduction for all Lao citizens and transforming big villages in to small districts in rural areas. Work at local levels, understanding the people?s perceptions and the citizens? needs, and carrying out effective monitoring and inspection. Strengthening the role of the focal point in coordinating with partner organizations, creatively working to discuss and gaining consent in operating the public activities identified by the party and government; continuing to research and turn priorities into projects and activities during	Propose the meeting during project inception phase

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Trade and Product Promotion Department (TPPD), MOIC		TPPD has mandate to support entrepreneurs promoting and development products for the domestic and export market through exhibitions and fairs, both domestic and international; to provide products information required for entrepreneurs penetrating into the both domestic and international market as well as for the foreign buyers; and to facilitate entrepreneurs producing and developing products in compliance with the various needs of the domestic and international market.	Desk research	Some general obligations of the department are: Support and manage activities related to marketing promotion and product development such as: trade fairs, exhibitions, information services, and introduction of new products to both domestic and international markets. Consolidate information on markets and analyzed findings and inputs for the NES and for organizations, enterprises and others involved in marketing promotion and product development inside and /or outside the country. Develop a plan and implement a technical cooperation and/or public investment project for marketing promotion and product development; manage and administrate finance and properties belong to the Department.	Propose meeting during the project inception

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Department of Small and Medium Enterprises Promotion (DoSMEP), MOIC		DoSMEP has mandate to develop SME through creating enabling environment for business operation and SMEs could improve their competitiveness for sustainable growth under opening free trade. Specific plans include: productivity, technology and innovation; credit accessibility; advisory services for business development; market access and expansion; development of starter up; enabling environment for business operation; and tax, fee and finance.	Desk research	In Lao PDR, based on results of the second economy survey in 2013, the number of enterprise was 178,557 (134,577 enterprises was included in the survey), of which 124,873 was non-profit oriented enterprises and 9,704 was profit oriented enterprises. Based on the definition for small and medium enterprise, 124,567 enterprises (99.8%) had fewer than 99 workers, of which, 86% has no more than 5 workers. SME created 471,282 people accounting for 82.18% of total employment in total enterprises. In Lao PDR, policy supports to promote SME has started since 2004 through Decree No. 42/PM dated on 20 th April, 2004. During early period, development organization supported GoL to develop SME included GTZ, ADB, EU, UNIDO, etc.	Propose meeting during the project inception

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Lao National Chamber of Commerce and Industry (LNCCI)		LNCCI particularly, at provincial levels, aims to protect right and fair benefit of enterprises who are member, contributing to development of socio-economic of Lao PDR. It is a socio organization of enterprises, bridging between government agencies and enterprises, representing workers, associations, group of traders and enterprises working in Lao PDR. Their main activities include promoting, organizing and consolidating enterprises to help each other to ensure efficiency of business and coping with law; bridging the coordination between enterprises and government agencies; as well as collecting, summarizing, analyzing and disseminating marketing and price information to members and society.	Desk research	The main responsibilities and activities of CCC are to: Providing information and law of Laos to its members Introducing and guiding Chinese enterprises to operate based on Lao law and receiving economic benefit of members Providing information and advising marketing to members, helping members to expand their business, facilitating documentation for operating and expanding their business Representing its members to discuss with Lao related government agencies, LNCCI, discussing and facilitating the conflicts Setting clear schedule to share information and experiences Advising members on how to operate their business in Laos, facilitating and coordinating to solve issues on marketing, clients, price, quality which are interested to members Organizing economic and trade activities.	Propose meeting during the project inception

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
AFN		Agriculture For Nutrition (AFN) project is supported by IFAD under the GAFSP. The goal of the project is to reduce extreme poverty and malnutrition and enhance income and food security in rural communities by supporting nutrition-sensitive and climate-smart agricultural practices in 12 districts across 400 villages in HPH, ODX, PSL and XKH provinces.	Desk research	<p>In Houaphan province, AFN operates in Xamtai, Kuan, Houameung and Sone districts through promoting successful agricultural approaches and technologies.</p> <p>It emphasis on building an enabling environment for sustainable market-led improvements in nutrition-rich and diverse agricultural production and productivity and rural employment and incomes.</p> <p>Women empowerment and PPP also has been highlighted in the project.</p>	Propose meeting during the project inception

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
World Food Program (WFP)				<p>WFP operates in 100 villages in two districts of Ngoi and Phonthong districts of LPB province and 130 villages in four AFN project districts of HPH province. Their main activities are school feeding program and improvement of local nutritional awareness.</p> <p>At district and community levels, WFP operates through Village Education Development Committees (VEDCs) establishing school gardens and link up local farmer groups, hence, there are already platforms. WFP also operate through PAFOs/ DAFOs and district health in supporting village level planning for investments under the IFAD/ MAF component for farmer groups.</p>	12th Sept . 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Northern Smallholder Livestock Commercialization Project (NSLCP)		NSLCP has been operated since March 2015 till June 2021 with 21.46 million USD loan from ADB. The project aims to increase income to the smallholder livestock and agriculture business units by facilitate and supply the need on commercialization of livestock production to local market and mage a good opportunity in order to export livestock production into foreign market. The project operates in 12 districts of LNT, LPB, HPH and XKH provinces.	FGD with project team in HPH	In LPB and HPH provinces, the project operates in Phoukhoun, Phonxay, Viengkham, Viengxay, Xiengkhor and Aed districts. Improve ment of pasture land for cattle fattening, strengthening farmers groups and linking to markets are the main success of the project.	23rd Sept . 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
ADB			Desk research	<p>Currently, ADB supports several related projects including:</p> <p>Sustainable Rural Infrastructure and Watershed Management Sector Project (2019). The project is intended to address issues of PRI and watershed management in mountainous provinces of Northern Lao PDR (LPB, XKH, HPH and XYBL) by using an integrated land use planning approach that integrates efficient, sustainable and climate resilient rural infrastructure, and feasible watershed protection measures. For an ecosystem based sustainable rural development, infrastructure and the watershed have to be considered simultaneously.</p> <p>Climate-Friendly Agribusiness Value Chains Sector Project (started in 2020). The proposed project aims to support the implementation of the government's ADS to 2025 by boosting the competitiveness of rice and vegetable value chains in 6</p>	Propose meeting during project inception phase

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
The Agro Biodiversity Initiative (TABI)		<p>TABI is funded by SDC till September 2020 aims to contribute to poverty alleviation and improved livelihoods of upland communities through the sustainable management and use of agro-biodiversity in multi-functional landscapes.</p> <p>TABI works in upland areas of northern Laos and has a total of 180 Agro-Biodiversity related subprojects in the three provinces of LPB, HPH and XKH. It aims at promoting agro-biodiversity through small projects funding and knowledge sharing.</p>	Meeting with TABI CTA and TABI Provincial team in LPB and HPH	<p>TABI has developed a land-use planning tool called FALUPAM. In addition, TABI just launched an exchange platform ? www.p.hakaolao.la. It is proposed to use this FALUPAM methodology within the pilot areas of the project.</p> <p>FALUPAM is a main LUP using by DALAM; however, The LDCF project team has concerns about the effects of TABI's approach to land-use planning and would advise against further supporting this approach until these concerns are further understood or addressed. For example, all land-use plans facilitated by TABI that the team observed consolidated areas to be cultivated via shifting agriculture for a given year. Therefore, whereas the traditional approach to shifting agriculture leads to hillsides covered in a patchwork of plots in different stages of natural regeneration, TABI's approach tends to result in plans wherein all shifting</p>	10th Sept . 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
The Climate Protection through Avoided Deforestation (CliPAD), GIZ		<p>The CliPAD Programme was initiated in 2009 to support the Lao Government in its REDD+ Readiness Process on national and sub-national level. The programme provides policy advice and capacity development supporting the establishment of the national and provincial REDD+ framework and REDD+ planning processes. At the local level, mitigation activities are piloted and pro-poor REDD+ mechanisms and sustainable financing models are developed. GIZ works in close cooperation with the financial component, financed by the federal Republic of Germany through KfW Development Bank.</p>		<p>Four main components under CliPAD are: National REDD+ Support; Provincial REDD Action Plans (PRAPs); Access to Climate Finance; and Village Forest Management.</p> <p>CliPAD supports the GoL in the province of Houaphan to provide incentives to local communities to participate in forest management and conservation efforts in village forest areas.</p> <p>In collaboration with the financial module of CliPAD the project is supporting the provincial and district forest officers in the development and implementation of Village Forest Management (VFM) in 70 target villages in two districts of HPH. Village Forest Management covers the protection and sustainable use of all categories of village forests, as permitted by existing legislations. In close collaboration with the relevant district authorities, Village Forest Management</p>	

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Northern Uplands Food and Nutrition Security Improvement Project (NUFNIP), Helvetas	Farmers, particularly women farmers in project target areas	NUFNIP with about ? 2.77 million funded by EU between February 2016 and January 2020. The main objective of this project is to contribute to secured and improved livelihoods of poor rural women and men farmers in the Northern Uplands of Laos. The project aims to improve food and nutritional security, especially of women and young children in Vieng Phoukha district of LNT and Ngoy district of LPB.	Meeting with CTA during the IW and the project team in Ngoi district	<p>The Lao Upland Rural Advisory Service (LURAS) project is funded by SDC and is implemented by Helvetas and Netherlands Development Organization (SN V) in collaboration with the Department of Technical Extension and Agricultural Processing (DTE AP) of MAF.</p> <p>Lao Farmer Network is closely involved at the national level to represent farmers' interest. The Project is implemented since December 2014. It is engaged at the national level as well as in the provinces of ODX and XKG. Currently, it is active mainly in XKH province with some expansion to Hem district of HPH province.</p>	<p>13th Sept . 2019</p> <p>19th Sept . 2019</p>

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
GRET	Farmers in project target districts	Between 2011 and 2015, GRET together with SNV have successfully promoted bamboo cultivation and 4 different associated value chains in 70 villages in Xamneua, Viengxay and Sobbao districts of HPH province. The provincial bamboo strategy was endorsed during that period. The current project is between January 2017 and December 2020 with a budget of about ? 1.43 million.	Meeting with GRET team in HPH	<p>In order to support the implementation of the provincial strategy, GRET works in 73 villages in Houaphanh on the effective participation of farmer organizations to the management of bamboo forests. The project implements a multi-stakeholders value?chain approach for the development of the bamboo sector. GRET also supports the emergence and progressive autonomization of a local association, the Bamboo & NTFP Development Association (BND A),as facilitator in the Sustainable Forest Management and Monitoring and Bamboo-based value chain development in Houahpanh.</p> <p>Currently, GRET works on 5: Bitter bamboo shoot; Dried bamboo shoot; Slash and stick bamboo, Handicraft and Fresh bamboo shoot.</p> <p>The project provides crop-relevant TA and training on contract negotiation, book-keeping, financial literacy, etc. Also,</p>	24 th Sept . 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Landscape Management and Conservation Agriculture Development for Eco-Friendly Intensification and Climate Resilient Agricultural Systems in Lao PDR (EFICAS)			Meeting with Field team in HPH	EFICAS project aims at developing innovative methods and intervention approaches to support farmers' adoption of climate smart agricultural systems based on conservation agriculture. Community livelihoods and resilience to climate change are improved through: village landscape management, participatory innovation network and multi-stakeholder communication platform. Currently, the project operates in three target provinces of the NUDP provinces including Luang Prabang (Phonxay, Pakxeng and Viengkham), Huaphan (Hem, Viengxay and Huamueng) and Phongsaly (Kua and Mai).	

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
NUDP-SALI			Meeting during IW and meeting with provincial team in LPB and HPH	The programme aimed to contribute to poverty reduction and sustainable development in the three mountain provinces by improving agricultural production. The NUDP is divided into six components: land and territory management, local governance and village planning, promoting the economic development of poor areas, supporting the emergence of peasant organizations, strengthening the provision of agricultural services by the public sector and action for food security. The NUDP was financed by AFD in a concerted framework with the European Union and Swiss and German cooperation. This system is replicated at the provincial level.	

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Funded by SDC, the Enhancing Nutrition of Upland Family (ENUFF), SNV			Meeting with provincial team in HPH	<p>ENUFF is implemented by SNV in partnership with Agrisud in 20 villages of Viengxay and Xiengkhor districts of HPH province and in ODX province. The ENUFF project applies multi sectoral approach to improve the nutritional status of family and children in remote and ethnically diverse upland farming communities through nutrition sensitive agriculture production, sustainable management of natural resources and enhancement of good practices in health and hygiene, including a more conducive and efficient policy and institutional framework.</p>	

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Wildlife Conservation Society (WCS)			Desk research	WCS through LENII project. Shade grown Arabica coffee, to preserve the forest and wildlife, as an alternative to maize cultivation, for providing sustainable income to the communities in Nam Et Phou Loey National Protected Area (NPA) in HPH province. WCS was looking for alternative agricultural productions which grow under the forest cover, provide decent income, can be easily and sustainably marketed e.g. coffee.	

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Funded by JICA, the purpose of the Sustainable Forest Management and REDD+ Support Project (F-REDD)			Desk research	F-REDD is 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 (SF M) in both central and provincial level (LPB as the pilot province). The project duration is between November 2015 and October 2020 which is implemented by: MONRE-DFRM, MAF-DOF	

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Lao Farmers Network		<p>The Lao Farmers Network is a network of farmer organizations of 25 farmer organizations from 11 provinces. The network has more than 2000 members. The Lao Farmers Network was setup in 2014 by 17 Farmer Organizations with a purpose to strengthening cooperation among small holder farmers. Key activities include information sharing, farmer to farmer learning and policy dialogues. The network also support each members in different ways including organizational development, organizational management, improving farming techniques, processing and marketing.</p>	Desk research	<p>Relevant activities include:</p> <ul style="list-style-type: none"> - strengthening producer groups[1] and farmer networks[2], [3], [4], [5], [6] - engagement in project steering committees[7] - farmer debt - chicken production for meat and eggs[8], [9], [10] - sweet potato production[11] - sugarcane production[12] - cassava production[13]⁹⁵ - pig production[14]⁹⁶ - upland herbicide use[15][16]⁹⁷ - honey production[17] - agricultural biofuels[18] 	Propose meeting during inception phase of the project

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Mai Savanh Lao Company Ltd. VTE Capital	Chasa inchi farmers in project target district	Ma? Savanh Lao is a Fair Trade Social Enterprise created in 2005, and WFTO certified. ?We opted for a ?Non-profit? structure and all the benefits are reinvested in the business.? Our internal policy is based on fair values in work and respect of the person. ?This results in the development of a sustainable relationship with the producer, by paying a fair price and respecting the natural environment.? (www.maisavanhla.com).	Meeting with CEO during IW and their network during the field visit in LPB	Currently, the company promotes 2+3 Sacha Inchi contract farming thru provision of production technologies and markets to smallholder farmers throughout Laos. Being involved at all stages of production from farm to mill and plant to product the company could maintain the high standards of production and integrity of their products. Sacha inchi Vine that produces edible nut-like seeds; from Peru; grows well in N. Laos. It can be harvested multiple times per year, because seed pods develop throughout year, though the main harvest period is Jan ? Jun. Yields depend on planting densities (should be 2m x 4m), supporting structures (e.g., poles and wires for vines), and hydrogeological conditions. Inter cropping is possible. Processors provide farmers with seeds, TA, and some help with purchase and layout of poles and wires.	13th Sept . 2019 17th Sept . 2019

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Agroforex Company, VTE Capital	NTFPs farmers in target provinces	The company currently promotes and collects benzoin which are cultivated in the northern provinces of HPH and PSL, in association with rainwater rice growing. Resin tapping incisions are made in the bark of the trees from April to July and the Benzoin gum is harvested during the following months in winter. This activity provides supplementary income for nearly 2,000 families. Their benzoin supply is considered a pioneer in agroforestry and the proponent of an advanced model of integrated and sustainable development in Laos. Annual Benzoin production in the country averages from 60 to 70 tons per year. (www.biolandes.com).	Meeting with local collector in HPH province		24 th Sept . 2019 Propose meeting with CEO during inception phase of project

Stakeholder Name	Stakeholder Type	Stakeholder Profile	Consultation Method	Consultation Findings	Date
Yuni Coffee Company, HPH province	Coffee farmers in project target districts	The American FDI has operated since 2015 in Samtai, Viengxay, Huameuang and Sone districts of HPH province thru promoting coffee plantation toward smallholder farmers through 2+3 contract farming. The company is interested in buying red cherries and processing them for exporting as high quality green beans. The company plans to export more green bean to Singapore, Australia and Hongkong with current collection of about 10 MT per year. To bring out the best of Houaphan's coffee, Yuni was relying on the world's newest farmers to better manage their coffee garden, learn appropriate harvesting techniques, and understand innovative processing methods.	Meeting during field survey in HPH	Yuni Coffee has a related GEF Small Grant Proposal in Houaphan. As with all commodity crops, vulnerable to international market fluctuations. Lao cannot match the scale of production in major coffee-producing countries, so it is only worth expanding or supporting coffee production for high-end or niche markets. This requires better crop management and post-harvest handling. Village with 5 ha of production might have a micro mill with capital costs of ~5 ? 6k USD for mill, drying patio, storage. Need facilities/ equipment close to harvest: pulping machine, water, electricity, dry storage, racks. Dry storage and packing enable storage for 2 ? 3 months. Processing well takes training, commitment, interest, equipment, etc., so few villages want to go to the trouble. Recommend planting ~1,000 m (elevation), best below 1,200 m. Could change with climate	26th Sept . 2019

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- [1] <https://laofarmers.net/tag/farmer-organisation-strengthening/>
 - [2] <https://laofarmers.net/tag/farmers-networking/>
 - [3] <https://laofarmers.net/tag/lfn/>
 - [4] <https://laofarmers.net/tag/lfn-provincial-network/>
 - [5] <https://laofarmers.net/tag/provincial-network/>
 - [6] <https://laofarmers.net/tag/meeting/>
 - [7] <https://laofarmers.net/tag/mtcp2-regional-steering-committee-meeting/>
 - [8] <https://laofarmers.net/tag/artificial-hen/>
 - [9] <https://laofarmers.net/tag/how-to-hatch-eggs-effectively/>
 - [10] <https://laofarmers.net/tag/reducing-chicken-mortality/>
 - [11] <https://laofarmers.net/tag/a-sweet-technique-to-grow-sweet-potatoes/>
 - [12] <https://laofarmers.net/tag/farmer-indebtedness-1-sugarcane-in-sayburi-district/>
 - [13] <https://laofarmers.net/tag/farmer-indebtedness-2-a-case-of-cassava-in-sepon/>
 - [14] <https://laofarmers.net/tag/farmer-indebtedness-3-a-case-of-pig-production-in-vientiane-capital/>
 - [15] <https://laofarmers.net/tag/herbicide-use-in-upland-laos/>
 - [16] <https://laofarmers.net/tag/increase-in-and-herbicides/>
 - [17] <https://laofarmers.net/tag/making-passionfruit-honey/>
 - [18] <https://laofarmers.net/tag/husk-burning-method/>

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

Please see the attached Environmental and Social Risk Assessment.

Please see the attached Stakeholder Mapping.

Please see the attached Stakeholder Engagement Plan, including an overview of stakeholder consultations during the PPG phase, planned stakeholder consultations during implementation, information dissemination, and the mechanism to redress stakeholders' grievances, if any.

Please see the Site-selection Report for an extended overview of various aspects of local communities in the targeted areas.

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor; Yes

Co-financier;

Member of project steering committee or equivalent decision-making body; Yes

Executor or co-executor; Yes

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assessment.

Please refer to the attached Gender Assessment and Action Plan

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Yes

Closing gender gaps in access to and control over natural resources; No

Improving women's participation and decision making Yes

Generating socio-economic benefits or services for women Yes

Does the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Elaborate on the private sector's engagement in the project, if any.

The project will improve climate resilience of agricultural livelihoods, landscapes, and value chains through a market-oriented approach. Therefore, the project is directly relevant and beneficial to private-sector stakeholders. Most of the project's targeted practices are either undertaken by or directly affect the private-sector endeavors of smallholders and SMEs. As conveyed in the Stakeholder Engagement tables, private-sector stakeholders have been extensively engaged and consulted during the project's preparation and will continue to play key roles in the project's execution as well as benefit directly from the project's interventions. Stakeholders in the various agricultural value chains include small-holders, local collectors (especially for NTFPs), producer groups, lenders, landlords, equipment suppliers, input suppliers, wage laborers, processors, transporters, retailers, exporters, and agribusinesses (e.g., large-scale FDI plantations), among others (e.g., advocates for competing land uses, such as for mining).

For the purposes of this project, governmental and other agencies that support and enable the efficient functionality of the private sector are considered ancillary to agricultural value chains (though they affect the economic models of those value chains).

Critically, this project recognizes individuals and households as primary private-sector stakeholders who invest not only their finances, but also their labor, land, and welfare (e.g., climate-related risks to well-being).

Table 12 maps the project's outputs to the private-sector stakeholders whom the project will directly engage and benefit. (Note that these are only direct engagements and benefits. The project will also continue to engage with the private-sector through more general fora?e.g., project workshops?and yield many indirect benefits as well.)

Table 12: Mapping of Outputs to Private-sector Stakeholders Directly Engaged and Benefitted

Project Output	Private Sector	
	Engage	Benefit
1.1.1. Strengthened inter-sectoral planning and investment-prioritization processes at national and sub-national levels for resilient and sustainable rural landscapes.	All	All
1.1.2. Innovative financial instruments, investment models, and institutional arrangements developed and enabled to mobilize climate finance for resilient and sustainable rural landscapes.	All	All, especially small-holders, collectors, producer groups, and processors
2.1.1. Participatory climate risk and vulnerability assessments conducted for upland livelihoods, incorporating vulnerable ecosystems and agro-ecological suitability at landscape level.	All, especially small-holders, collectors, producer groups, and processors	All, especially small-holders, collectors, producer groups, and processors

2.1.2. Capacities of local institutions and district-level governmental offices to identify, incentivize, promote, and disseminate climate-smart land-use approaches and practices, and nature-based solutions for resilient and sustainable landscapes strengthened.		Primarily small-holders, collectors, and producer groups
2.1.3. Participatory, resilient, and sustainable land-use and investment plans incorporating innovative, evidence-based, locally appropriate, gender-responsive, and climate-smart livelihood options and nature-based solutions developed and demonstrated.	Primarily small-holders, collectors, producer groups, and processors	Primarily small-holders, collectors, producer groups, and processors
2.2.1. Resilient and sustainable agricultural value-chain networks mapped and established in two provinces of the northern uplands.	All	All
2.2.2. Inclusive climate-resilience and market-opportunity assessments for resilient and sustainable agricultural value chains, including options for improvement of periodic quantity- and price-planning activities through multi-sectoral collaboration.	All	All
2.2.3. Investment action plans for resilient and sustainable value chains incorporating periodic pricing guidance, financing options, incentives, models, and tools to encourage adoption and up-scaling of climate-smart practices developed and piloted.	All	All
3.1.1. Climate-smart land-use approaches and practices and nature-based solutions for resilient and sustainable landscapes deployed.	Primarily small-holders, collectors, producer groups, and processors	Primarily small-holders, collectors, producer groups, and processors
3.1.2. Investments for resilient and sustainable value chains to encourage adoption and up-scaling of climate-smart practices deployed.	All, especially lenders, producer groups, processors, and exporters	All, especially lenders, producer groups, and processors
4.1.1. A gender-sensitive monitoring and evaluation system developed, strengthening decision-making for CCA in the agricultural and NRM sectors. <i>[Note especially the installation and integration of three new AWSs.]</i>	Primarily small-holders, collectors, producer groups, processors, and transporters	Primarily small-holders, collectors, producer groups, processors, and transporters
4.1.2. Communication and knowledge-management strategy, including outreach programs and local knowledge-sharing and learning networks on climate adaptation and resilience, developed and implemented.	All	All

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

The following sub-sections describe risks to the project and risks from the project, as well as respective mitigation measures.

5.a. Risks to the project

Description of Risk	Risk w/o Mitigation ^[1]		Mitigation	
	Impact	Probability	Actions	Responsibility
National priorities or contexts might shift.	M	M	<p>Addressing climate change?particularly in the prevalent, crucial, and vulnerable agricultural sector?is a high priority for GoL, such that it is unlikely that changing circumstances will lower the prioritization of CCA. In fact, it is more likely to increase as a priority.</p> <p>However, given that priorities and circumstances might shift (including amongst CCA interventions, within the agricultural sector, among various actors, etc.), the project is well positioned to adapt through the PSC?s discretion. The PSC?s mandate ensures that the project is flexible to evolving circumstances and is able to adjust to challenges and opportunities in order to achieve the project?s goal and targeted impacts.</p>	PSC
Anticipated co-financing that has not commenced prior to operationalization does not materialize during the project?s delivery.	L	L	<p>The project will mitigate this risk in three ways.</p> <p>The primary mitigation measure is to focus on "no-regrets" interventions, such that the project's supported activities will deliver value and contribute toward targets even if co-financing support is less than expected, is out of synch with the project, or does not materialize.</p> <p>The secondary mitigation is to ensure that governmental agencies overseeing co-financing activities are engaged with delivery of this project (e.g., via the TAG and, in some cases, the PSC).</p> <p>The tertiary mitigation measure is to rely on support from PSC members to harmonize across initiatives and address unexpected obstacles.</p>	PMU and PSC

Relevant national, provincial and district sector agencies lack sufficient capacity to support the project's activities	H	L	The project will build relevant technical capacities of governmental agencies at national and local levels. The project's delivery will scale with governmental absorptive capacities, build local capacities to augment governmental capacities for sustained long-term impact, and minimize reliance on on-going governmental support (financial and TA) for durable post-project results and up-scaling. The project's multi-stakeholder and inter-sectoral platforms (Outcome 1.1.) will also help to address delivery challenges and promote commitment.	PMU and PSC, especially DALAM and DTEAP
Resistance (inertia) among land/ natural resource users and advisors to changing their current practices to locally appropriate CCA practices and developing supplementary livelihoods, and motivating many smallholder farmers to adopt CCA production methods at a scale required to comprehensively address ecological challenges may be difficult.	H	L	The site-selection process during the PPG favored locations that expressed strong local interest in such interventions. Additionally, the project will (i) reduce barriers to adoption and continued commitment, (ii) provide training to enable farmers to assess and value benefits that may be less visible than revenue (e.g., reduced costs, increased reliability of yields, reduced risk exposure, ecological resilience), and (iii) provide phased incentives (e.g., TA, local investments such as via CRIPs, and market integration).	DALAM & DTEAP, with support from PMU, LWU, and PSC
Farmers prefer locally homogenous production (i.e., low local diversification), perpetuating locally homogenous risk profiles.	M	M	The project will address this risk in multiple ways: <ul style="list-style-type: none"> - Training on risk profiles and importance of diversification as a resilience strategy - Development of business plans and supportive value chains (market linkages) that buttress technical assistance, especially by reducing barriers to diversification and creating market 'pulls' (i.e., supporting demand and demand efficiency). - Supporting diversification at levels both below and above intra-community diversification (e.g., household diversification and inter-community diversification). - Supporting approaches that strengthen climate resilience even in locally homogenous production systems (e.g., increased adoption of climate-resilient varieties, IPM, investments in climate-proofed agricultural infrastructure, business skills and market linkages to facilitate production contracts, etc.). 	DoSMEP and NAFRI, with support from PMU, LWU, and selected NGO(s)

Limited participation from women	H	M	Gender-related priorities have been integrated throughout the entire project. The project will implement and revisit the effectiveness of its Gender Action Plan, monitor gender-disaggregated metrics to maintain awareness of gender-related short-comings in delivery, partner with LWU to ensure that delivery and benefits remain accessible and relevant to women, ensure inclusion of women in multi-stakeholder platforms, create supported business models that are particularly suitable for adoption by women, offer project-supported interventions with timing and formatting that is suitable for women's participation, deliver some TA via women's only groups, ensure involvement and representation of women in project-related governance at all levels, etc.	PMU, with support from PSC and LWU
Project-funded investments in local CCA infrastructure and equipment are not adequately maintained for long-term impact.	M	M	CRIP investment criteria will consider local plans for funding and conducting O&M, with preference for investments that have negligible O&M costs, straightforward O&M logistics (e.g., parts, TA), locally integrated good governance (e.g., access), and direct returns (such that local investments in O&M generate clear returns to the community).	PMU, with support from DRDC
Current or worsening climatic trends result in unpredictable, acute hazards.	H	L	The project is designed specifically to strengthen national and sub-national CCA, especially by improving the integration of CCA considerations into land-use planning and agricultural value chains. Most of these interventions are "no-regrets" interventions that will yield benefits irrespective of specific climatic changes. The greatest climatic threats to the project would be from acute natural disasters (either wide-spread or localized). These could include massive flooding, extreme droughts, severe damage from pests or diseases, etc. Although the project's interventions are designed to strengthen CCA over the course of the project, such disruption from a severe acute disaster would likely reorient priorities, in which case the PSC would ensure that the project adapts appropriately in technical focus and operational delivery. To reiterate, all of the project's activities will mitigate this risk, particularly by improving foresight, coordination, preparation, and adaptive capacities, as well as reducing local sensitivities.	PMU and PSC

<p>Drought or flooding continues to degrade agricultural landscapes and unpredictably reduce yields, such that households in targeted communities are much more risk averse and less willing to attempt new approaches or invest for medium-term returns.</p>	<p>M</p>	<p>H</p>	<p>This risk is factored into all aspects of the project's interventions. The project mitigates this risk through participatory approaches and empowerment (ensuring local initiatives reflect local priorities), building adaptive capacities, focusing on 'no-regrets' approaches (i.e., yielding benefits no matter what), reducing adoption risks through various arrangements for transitional or partial adoption, focusing on demand-based approaches (i.e., where production responds to market demand rather than asking producers to bear the risk of over-production), linking current climatic risks with the urgent need to shift away from land-use practices that increase climate-related sensitivities, livelihood diversification, approaches that are relatively reversible, etc.</p>	<p>PSC and PMU</p>
<p>Current or worsening climatic trends damage transportation infrastructure necessary for the project's delivery (e.g., washed out roads and bridges).</p>	<p>H</p>	<p>M</p>	<p>The most likely acute climatic hazard relevant to operational delivery is that rural transportation access will be limited (especially from washed-out roads and bridges). The project's design plans for FFS interventions that are relatively focused and intensive, such that the risk of partial delivery in a given location is reduced. Additionally, technical aspects of the project specifically address diversification to practices that are resilient to damaged transportation infrastructure (e.g., crop selection and post-harvest processing, such as dried alliums). Therefore, such events would further accentuate the relevance of the project's interventions, and the benefits to early adopters.</p>	<p>PMU, DRDC, and FFS delivery teams</p>

<p>Climatic hazards outside the project area drastically affect agricultural markets in the project area (e.g., driving up short-term prices for a specific commodity, leading land users to abandon diversified production or other climate-adaptive approaches in favor of homogenous, short-term perennial upland commodity production).</p>	<p>M</p>	<p>M</p> <p>This is the status quo, so the project's interventions are designed to be robust to such vacillations not only during delivery, but after the project's conclusion as well. The project addresses this risk in three main ways: (1) land-use planning, (2) business planning, and (3) sunk costs. First, by strengthening local capacities for land-use planning, the project will help ensure that local land uses abide by deliberate plans that reflect informed strategic and local priorities and are not as susceptible to rash attempts to chase commodity prices. Second, by building local and household capacities for business planning, land users will be better able to assess, appreciate, and manage the risks and opportunities associated with different land-use approaches (including a fuller notion of total costs/ benefits). Third, the project will support communities and land users in moving toward long-term investments in productive landscapes, which not only yield greater and more reliable benefits, but which also inherently disincentivize rash changes in land use. (E.g., a land user is less likely to cut down a grove of trees if they have planted those trees, have enjoyed reliable profits from them, and are aware of the time it takes for those perennial crops to reach full production.) This is not to say that the land users are trapped by their decisions, but that they are in a position to plan and evaluate risks/ benefits over longer time horizons. Given that this risk is already part of the status quo, it is further assumed that all participants will be aware of it as part of the consideration in adopting different practices, and it will be explicitly mapped and discussed in FFSs.</p>	<p>DALAM, DTEAP, FFS delivery teams, and PMU</p>
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<p>Increasing climatic hazards and variability increase the risk premia charged on agricultural capital (i.e., cost of capital).</p>	<p>L</p>	<p>M</p> <p>The impact of this risk has been rated as ?low? because most of its impact is already reflected in the status quo. Most of the potential borrowers in the targeted communities and value chains are unable to obtain capital financing due either to lack of access (lack of lenders or lack of liquid funds available for lending) or excessively high costs of capital. The project will address this risk in four primary ways: (1) strengthened financial literacy of borrowers, (2) increased formalization of agricultural business plans and contracts, (3) strengthened networks for agricultural value chains, and (4) improved understanding among policy makers of climate-related risks to agriculture.</p> <p>Stenghtened financial literacy enables community members to identify a broader range of financial options, reduces default risks, increases ROI (by improving investment decisions), and increases prospective borrowers? attractiveness to lenders.</p> <p>Increased formalization of agricultural business plans and contracts better enables stakeholders to understand and assess and manage risks. For example, currently, production systems that differ from household-based commodity production are somewhat foreign to lenders. When prospective borrowers are better able to formalize and assess dimensions of risk and to present creditors with structured plans, such plans are more amenable to lending. Moreover, all stakeholders benefit from improved standardization of contracts and terms. These mitigation efforts facilitate value-chain development, which provides a networked and diversified buffer against many types of shocks, including those arising from climate change.</p> <p>Strengthened networks within agricultural value chains also open up more financial opportunities and reduce borrowing costs by increasing social capital within those networks. The formation of producer groups and value-chain connections helps build repeated transactions that foster mutually beneficial relationships. At present, the lack of network development results in numerous <i>ad hoc</i> transactions, but few lasting value-chain relationships. Relationships open up opportunities, such as creating associations that act as borrowing entities. Strengthened networks also create opportunities for value-chain actors to extend various sorts of value through the chain (e.g., payment flexibility, in-kind support, technical assistance, infrastructure investment, dedicated production, alignment with buyer specified</p>	<p>PMU, DoPF, DSMEP, TPPD, and FFS delivery teams</p>
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<p>The biophysical hazards of climate change stress social capital.</p>	<p>L</p>	<p>M</p> <p>As with the previous risk, this risk is rated as 'low', because its effects are largely already reflected in the status quo. This project will mitigate this risk in three primary ways: (1) land-use planning, (2) institutional adaptive capacities, and (3) strengthened networks.</p> <p>Boundary conflicts are the most widely cited manifestation of social discord in the northern uplands. They are often the first reason communities cite for wanting land-use planning. Boundary disputes arise for many reasons, including shifting or expanding production associated with climate-related risks. Therefore, the project's support for land-use planning (which entails formalizations of boundaries and locally developed plans for uses within those boundaries) will help reduce and mitigate such conflicts.</p> <p>At national and sub-national levels, strengthened institutional capacities will help decision-makers better understand and predict first- and second-order effects of climate-related risks, such as by considering the ways in which certain climatic shocks reverberate in different social circumstances (e.g., displacement, disputes, domestic abuse, breaches of contract, etc.). Within value chains, institutions (such as producer groups, producer-buyer networks, etc.) help build trust through formalizations (increasing predictability), repeated transactions, enforcement, dispute resolution, and diversified mechanisms for mutual benefit. At the local level, institutional adaptive capacities help build and reinforce social capital by facilitating participatory planning (leading to perceptions of procedural fairness and local relevance) and dispute resolution.</p> <p>Finally, by strengthening networks, the project will help stakeholders build and access a broader range of options for predicting, avoiding, adapting to, and responding to many forms of shocks, including climate-related shocks. Broader networks not only diversify adaptive options, but also increase the number and types of stakeholders over which shocks are spread.</p>	<p>PMU, LWU, DTEAP, DSMEP, and FFS delivery teams</p>
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5.a.1. Risks related to COVID-19

As of 18 November 2020, Lao PDR had reported 25 official cases of COVID-19, including 0 deaths, which is an extremely low prevalence compared to other countries. However, the pandemic's impact on the

national and sub-national economies has been significant. Despite very low levels of recorded cases of COVID-19 in Lao PDR, the pandemic continues to have a worsening effect on tourism, hospitality, and factories due to border closures, travel restrictions, school closures, business shut-downs, etc. Additionally, domestic and international factors associated with COVID-19 are negatively affecting the networks of agricultural supply chains, including input suppliers, producers, collectors, processors, and consumers. Disruptions to food supplies and demand, as well as market and business uncertainties, strain supply chains and threaten food security. Vulnerable groups face increased risks of food insecurity.

The shifting trajectory of the pandemic and its consequences will pose challenges, risks, and constraints that might influence operational delivery over the course of the project. Two recent rapid assessments of COVID-19 in Lao PDR give a sense of the virus's near- and medium-term effects and implications, as well as recommendations. A WFP rapid assessment[2] found, *inter alia*, that (i) there are geographic disparities in effects, (ii) livelihoods associated with commodity crops have been especially affected (due to reliance on international trade systems and sensitivities to international effects on prices), (iii) agricultural markets have been especially affected by limitations on the movements of various value-chain actors and by reduced numbers of foreign traders, particularly Vietnamese traders (who are the primary international traders in many parts of Lao PDR), (iv) most areas are experiencing increased unemployment, reduced sales volumes, and reduced prices, and (v) there is increased reliance on household production and NTFPs for food security and nutrition. The WFP report recommended, *inter alia*: (i) allowing traders and middlemen greater movement to the extent possible, (ii) directly supporting households with insufficient access to food, and (iii) directly supporting local communities with, among other things, assistance particularly via DAFOs to increase the use and production of home/ community gardens as well as the preservation and processing of agricultural products (thereby increasing value-addition and reducing losses from spoilage).

Similarly, a rapid assessment by World Vision International[3] found, *inter alia*, that half of respondents reported loss of income and that households lost an average of 42% in monthly income. The most commonly reported sources of income disruption were (i) movement restrictions, (ii) concerns about leaving the house, and (iii) reduced demands for goods and services. The most commonly reported coping strategies were: (i) borrowing money, (ii) reducing the quantity and quality of meals, and (iii) selling productive assets. Regarding livelihoods and food security, the report recommended (i) directly investing in local communities, (ii) strengthening the productive capacities of vulnerable households, particularly in ways that include and empower vulnerable groups and women, and (iii) strengthening methods of household savings.

Taken together, these assessments indicate that COVID-19 is exacerbating many of the risks and vulnerabilities noted above (see Section 1.a.1. regarding climate-related risks and vulnerabilities), and that many of this project's activities strengthen not only climate adaptability, but also general resilience to other shocks and trends. Many of the recommendations above are directly supported by this project, such as support to smallholders and local communities via assets for production and technical assistance, support for agricultural diversification, strengthening agricultural value-chain networks, reducing sensitivities to fluctuations in commodity prices, technical assistance and investments for local value-addition and processing, reducing risks from spoilage in storage and transport, strengthening adaptive capacities at multiple levels, strengthening local institutions for increased social capital, gender-mainstreaming, increased resilience of working lands, improved financial literacy, etc.

Although the pandemic of COVID-19 is recognized as a global tragedy that will have long-lasting consequences, this project's PMU and PSC will seek opportunities to ensure that reforms and improvements that result from the global pandemic response also reflect the principles of resilience and adaptability championed by this project. That is, the tragedy and challenges of COVID-19 have created a broad sense of urgency for strengthening both strategic and decentralized resilience and adaptability to a range of threats. In many cases, initiatives to buffer against future pandemics will also buffer against the current and impending consequences of climate change. For example, a community with empowered women has twice as many people to assist in an emergency versus a community with disempowered women. A community with strong local institutions and adaptive capacities for planning and resource-management is much more resilient to pandemics, climate change, and other shocks. Well developed value

chains are more adaptive and resilient to evolving threats. More diverse financial networks are better able to foresee and absorb risks. Multi-dimensional and multi-sectoral planning is better able to prepare for and respond to emergencies such as pandemics and climate change. Thus, many of the core aspects of this project will carry forward and make best use of the heightened public prioritization of these issues that has arisen based on the COVID-19 pandemic. The PMU and PSC will continue to ensure that this remains the case throughout the project's implementation.

Furthermore, the project's institutional arrangements, particularly via the PSC, ensure that the project's delivery remains both flexible and results-based. These adaptive arrangements ensure that the project's technical approaches continue to reflect up-to-date priorities and that the project's operational approaches reflect evolving circumstances and requirements (e.g., regarding public-health guidelines).

Category	Risks	Measures
Implications at national level		
Short to medium term	<ul style="list-style-type: none"> ? Reduced financial (co-financing) support from Government, development partners, and private sector, due to limited overall funding availability resulting from the COVID-19-related economic downturn, and/ or the reorientation of available funding to actions directly related to COVID-19. ? Government expenditure and prioritization of different programs and sectors, including agriculture, food security, and natural resources might change. 	<ul style="list-style-type: none"> ? If there are changes in cofinance, then partners will work closely to seek alternative options for co-financing and ensure continuity of resource allocations to ongoing initiatives in the project's targeted areas. ? It is anticipated that the project's scope will help to support the government's response to COVID-19 through its focus on food security and the diversification of livelihoods of vulnerable upland communities, which are already impacted by climate risks and hazards. Via the PSC and other means, the project's activities will be further discussed with the government to ensure that emerging priorities and responses, including those associated with the pandemic, are well reflected in the project's target areas during implementation.
Implications for the project's decentralized activities		
Short to medium term	<ul style="list-style-type: none"> ? Closure of offices, transport etc. could delay launch of project and its implementation. 	<ul style="list-style-type: none"> ? It is possible that periodic closures of transport and offices as well as restrictions on organizing meetings/ trainings with large numbers of people will affect the project's implementation. Therefore, the project will institute local mechanisms, such as by working with local facilitators and partners, to ensure that some work can continue on the ground. The project management team will work with all executing entities to ensure that field offices are effectively mobilized while following international and governmental guidelines for safe conduct in the context of the pandemic. Likewise, the project will ensure that all recommended safe practices are followed by the project team and by participating community members where the project is working.

Short to medium term	<ul style="list-style-type: none"> ? Potential or partial disruption of the food system and associated supply chains, such as logistics ? Increased losses and spoilage in high-value commodities/ perishables ? Disruption of demand for products and markets, due to temporary closure of hotels and restaurants 	<ul style="list-style-type: none"> ? Provide advice to farmers and government to meet immediate food needs. ? Conduct socio-economic impact assessment (as part of baseline assessment) to inform the project's design and implementation. ? Ensure close collaboration with private-sector entities and logistical companies to understand emerging barriers related to the pandemic, identify practicable solutions, and implement them. ? Support producer organizations in linking with markets and encourage use of value-chain networks to improve market efficiencies.
Short to medium term	<ul style="list-style-type: none"> ? Higher dependence on natural ecosystems as people who lose employment and income from other sectors depend more on natural ecosystems for their livelihoods and food security, thereby increasing pressures on these systems. 	<ul style="list-style-type: none"> ? This project's planned activities directly support livelihood diversification and resilience (i.e., lessening the transmission of economic impacts to ecosystems) and community-based natural resource management (i.e., managing impacts on ecosystems), including through the provision of technical assistance and investments to strengthen the sustainability of land-use and land-management practices?e.g., land-use planning, improved sustainability for permanent and rotational agriculture, agroforestry, local NTFP production and management, crop-diversification, livelihood diversification, etc. ? GoL and FAO plan to undertake analyses on the evolving impacts of COVID-19. Based on those findings, the project will prioritize work in more impacted areas of the project's sites to strengthen community management and alternative livelihoods.

5.b. Risks from the project

The following table addresses the risks identified in the Environmental and Social Risk Screening (Annex G).

Risk Identified at PIF Stage	Risk Classification	Mitigation Actions
3.2.1 ? Risks associated with the importation or transfer of seeds and/or planting materials for cultivation	Moderate	Seed procurement is envisioned under the project. The project will use local seed supply systems. In all cases of seed procurement appropriate technical clearances will be sought. Any imported varieties used by the project would be based upon recommendations from the technical team implementing the project to enhance farmer resilience. Should this situation arise, appropriate technical clearances will be sought.

Risk Identified at PIF Stage	Risk Classification	Mitigation Actions
5.1 ? Risks associated with the procurement, supply, and/ or use of pesticides on crops, livestock, aquaculture, or forestry	Moderate	<p>The project does not call for the procurement or supply of pesticides. It also does not call for the use of pesticides, though it will offer farmer field school modules on integrated pest management (IPM). Therefore, the project's activities associated with this issue pertain entirely to capacity development for responsible use, favoring agro-ecological and nature-based solutions when practicable.</p> <p>In that context, it is unlikely but possible that pesticides could be procured as part of FFS curricula or small-scale demonstrations regarding IPM or crop management.</p> <p>If the project at some point considers the procurement or provision of pesticides, clearance procedures will be followed according to the guidance provided under ESS5 in FAO's ESM Guidelines and, as advised via the PSC, FAO's Plant Production and Protection Division will be consulted.</p>
5.2 ? Risks associated with the provision of seeds or other materials treated with pesticides (in the field and/ or in storage)	Moderate	<p>As above, the project's current formulation does not call for or foresee the provision of seeds or other materials that have been treated with pesticides. In fact, the project favors agro-ecological and nature-based solutions that reduce reliance on synthetic chemical inputs.</p> <p>If the project at some point considers the provision of seeds treated with pesticides (e.g., potentially as a small-scale FFS comparison plot), clearance procedures will be followed according to the guidance provided under ESS5 in FAO's ESM Guidelines and, as advised via the PSC, FAO's Plant Production and Protection Division will be consulted.</p>

[1] H: High; M: Moderate; L: Low.

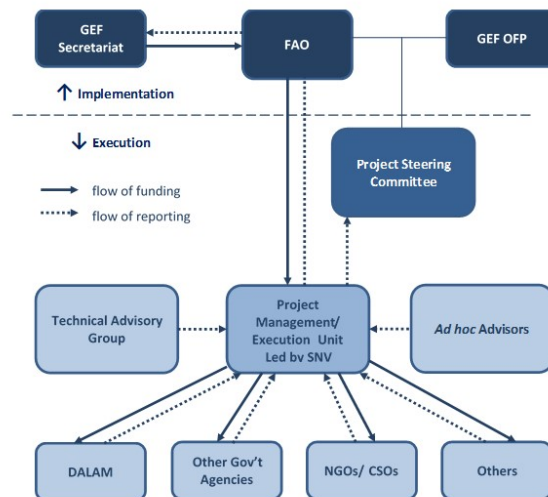
[2] WFP. (May, 2020). *COVID-19 Rapid Assessment of Food Security and Agriculture in Lao PDR*. Vientiane Capital, WFP. Available via: <https://www.wfp.org/publications/covid-19-rapid-assessment-food-security-and-agriculture-lao-pdr>

[3] World Vision International. (July, 2020). *Impact of COVID-19 to Children and Their Families: An early recovery rapid assessment in the Lao PDR*. Vientiane Capital, World Vision. Available via: <https://www.wvi.org/sites/default/files/2020-09/WV%20Laos%20Early%20recovery%20rapid%20assessment%20flyer%201%2004%20Sept%2020.pdf>

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

The project will be executed via OPIM Operational Partners Implementation Modality with SNV (Netherlands Development Organisation) with strong involvement of national focal agency for the project, DALAM and other government agencies, as required. SNV will have the overall executing and technical responsibility for the project, with FAO providing oversight as GEF Agency as described below. SNV will act as the lead executing agency and will be responsible for the day-to-day management of project results entrusted to it in full compliance with all terms and conditions of the Operational Partnership Agreement signed with FAO. As OP of the project SNV is responsible and accountable to FAO for the timely implementation of the agreed project results, operational oversight of implementation activities, timely reporting, and for effective use of GEF resources for the intended purposes and in line with FAO and GEF policy requirements. FAO will closely monitor implementation of OPA and provide substantive technical advice to the Government during the whole project cycle. DALAM DALAM will chair the Project Steering Committee that will provide overall guidance of the project.



6.a. Project Steering Committee

Execution will be guided by a **Project Steering Committee (PSC)**, which will ensure that the project's execution adapts to evolving circumstances in order to achieve the project's outcomes, impacts, and objective effectively and efficiently. Annex M presents the terms of reference and provisional membership of the PSC.

At the inception phase, the PSC will discuss whether or not to delegate any project-administrative oversight functions to provincial or district-level steering committees and, if so, the structures and mandates/ purviews of those committees.

6.b. Project Management Unit

The project's operational delivery and administrative functions will be coordinated and executed by a **Project Management Unit (PMU)** managed by SNV, which will be co-funded by the GEF and established within DALAM. In accordance with on-going guidance from the PSC, the main functions of the PMU will be to ensure overall efficient management, coordination, implementation, and monitoring of the project through the effective implementation of the annual work plans and budgets (AWP/Bs). The PMU will act as the secretariat of the PSC and will be managed on a full-time basis by a **National Project Coordinator (NPC)** and advised by a part-time **Chief Technical Advisor (CTA)**.

GoL will lead and coordinate the project's execution via a designated **National Project Director (NPD)**, located in DALAM. The NPD will be responsible for ensuring full integration of the project into relevant governmental agencies, coordinating the project's activities with designated execution partners, and directing the PMU with respect to governmental policies and priorities.

The NPC will be in charge of daily implementation, management, administration and technical supervision of the project, within the framework delineated by the PSC. The NPC in collaboration with DALAM will be responsible for ensuring achievement of the PMU's obligations, including:

- i. prepare a detailed work plan and consequent reports for the project;
- ii. ensure, and coordinate, day-to-day management of the project activities, and facilitate interactions between the different partners in the different outputs of the project;

iii. coordinate the different consultancies, training packages, and technical support needed for the different outputs;

iv. initiate procurement of planned inputs for implementation of activities;

v. ensuring a high level of collaboration among participating institutions and organizations at the national and local levels;

vi. ensuring compliance with all OPA provisions during the implementation, including on timely reporting and financial management;

vii. tracking the project's progress and ensuring timely delivery of inputs and outputs;

viii. providing technical support and assessing the outputs of the project national consultants hired with GEF funds, as well as the products generated in the implementation of the project,;

ix. approve and manage requests for provision of financial resources using provided format in OPA annexes;

x. monitoring financial resources and accounting to ensure accuracy and reliability of financial reports;

xi. ensuring timely preparation and submission of requests for funds, financial and progress reports to FAO as per OPA reporting requirements;

xii. maintaining documentation and evidence that describes the proper and prudent use of project resources as per OPA provisions, including making available this supporting documentation to FAO and designated auditors when requested;

xiii. implementing and managing the project's monitoring and communications plans;

xiv. organizing project workshops and meetings to monitor progress and preparing the Annual Budget and Work Plan;

xv. submitting the six-monthly Project Progress Reports (PPRs) with the AWP/B to the PSC and FAO;

xvi. preparing the first draft of the Project Implementation Review (PIR);

xvii. supporting the organization of the mid-term and final evaluations in close coordination with the FAO Budget Holder and the FAO Independent Office of Evaluation (OED);

xviii. submitting the OP six-monthly technical and financial reports to FAO and facilitate the information exchange between the OP and FAO, if needed;

xix. inform the PSC and FAO of any delays and difficulties as they arise during the implementation to ensure timely corrective measure and support.

The Food and Agriculture Organization (FAO) will be the GEF Implementing Agency (IA) for the Project, providing project cycle management and support services as established in the GEF Policy. As the GEF IA, FAO holds overall accountability and responsibility to the GEF for delivery of the results. In the IA role, FAO will utilize the GEF fees to deploy three different actors within the organization to support the project (see Annex J for details):

? the Budget Holder, which is usually the most decentralized FAO office, will provide oversight of day to day project execution;

? the Lead Technical Officer(s), drawn from across FAO will provide oversight/support to the projects technical work in coordination with government representatives participating in the Project Steering Committee;

? the Funding Liaison Officer(s) within FAO will monitor and support the project cycle to ensure that the project is being carried out and reporting done in accordance with agreed standards and requirements.

FAO responsibilities, as GEF agency, will include:

? Administrate funds from GEF in accordance with the rules and procedures of FAO;

- ? Oversee project implementation in accordance with the project document, work plans, budgets, agreements with co-financiers, Operational Partners Agreement(s) and other rules and procedures of FAO;
- ? Provide technical guidance to ensure that appropriate technical quality is applied to all activities concerned;
- ? Conduct at least one supervision mission per year; and
- ? Reporting to the GEF Secretariat and Evaluation Office, through the annual Project Implementation Review, the Mid Term Review, the Terminal Evaluation and the Project Closure Report on project progress;
- ? Financial reporting to the GEF Trustee.

Table 13 presents a summarized overview of PMU staff and deliverables.

Table 13: PMU Staff and Deliverables

Project Management Unit (PMU) Staff and Deliverables			
Source	Position & Required Skills	Deliverables	
		Direct	Support/ Back-stop
International	Chief Technical Advisor & Climate Smart Agriculture Specialist ? Blended finance for sustainable agricultural development ? Investment prioritization ? Relevant capacity-development ? Reduced land degradation and increased CCA for upland/sloped production ? Climate-resilient agricultural livelihoods ? Transitioning to CSA ? Integration of CSA into land-use planning, business plans, and value chains ? Coordinated operational delivery of internationally funded projects	1.1.1. 1.1.2. 2.1.3. 2.2.3. 3.1.1. 3.1.2. 4.1.1.	All, especially: 2.2.1. 2.2.2.
	Land-use Planning Policy Specialist ? Participatory, inter-sectoral land-use planning ? Integration of climate risk assessments, agro-ecological zone modelling, similarity and suitability analyses, and other climate-adaptive considerations into LUP ? Investment prioritization	2.1.1. 2.1.2. 2.1.3.	1.1.1. 1.1.2.
	Climate-resilient Agricultural Value-chain Specialist ? Gender ? Value-addition ? Investment prioritization	2.2.3. 3.1.2.	1.1.1. 1.1.2. 2.2.1. 2.2.2.
National	National Project Coordinator ? Agricultural and rural development ? Deep familiarity with governmental processes and structures related to investments for agriculture and rural development	1.1.1. 2.1.3. 3.1.2.	All
	Land-use Planning Policy Specialist ? Participatory, inter-sectoral land-use planning ? Integration of climate risk assessments, agro-ecological zone modelling, similarity and suitability analyses, and other climate-adaptive considerations into LUP ? Investment prioritization	2.1.1. 2.1.2. 2.1.3.	1.1.1.

Project Management Unit (PMU) Staff and Deliverables			
Source	Position & Required Skills	Deliverables	
		Direct	Support/ Back-stop
	Knowledge Management and Communications Specialist ? Knowledge management systems for agricultural and rural development ? Monitoring and evaluation ? Communication approaches for	4.1.1. 4.1.2.	1.1.1.
	Administration and Finance Officer/ Associate ? FAO-compliant administrative and financial procedures, including recruitment, reporting, budgeting, and financial auditing		All
	Procurement Officer/ Associate ? FAO-compliant procurement and contract-management ? Preferred: Familiarity with community-coordinated payments (see CRIPs under Output 3.1.1.) and coordinated disbursements for multi-party, blended finance (see value-chain investment packages under Output 2.2.3.)		All
	Administrative Assistant ? Administrative functions, procedures, and tools (e.g., Word, Excel, etc.) ? Facilitation of event management, document preparation, stakeholder coordination, meeting facilitation, etc.		All

6.c. Technical Advisory Group

The PSC and PMU will be advised on technical matters by a **Technical Advisory Group (TAG)**, contingent on the following considerations. The mandates and memberships of potentially relevant, extant technical advisory bodies and working groups continues to evolve. Therefore, at the first PSC meeting, the PSC will consider and, if relevant, confirm the continued appropriateness of this project-specific TAG or, alternatively, the fulfillment of its functions via an extant advisory body?especially the **Sectoral Working Group for Agriculture and Development**.

Appendix N presents the terms of reference and proposed membership of the TAG.

6.d. Coordination with other relevant GEF-financed projects and other initiatives

The primary mechanism of coordination between this LDCF-funded project and other GEF projects is via the OFP’s position on the PSC. Additional coordination mechanisms include the SWG-ARD and the project’s TAG.

GEF-financed Project	Relevant Aspects of Project[3]	Coordination
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GEF-financed Project	Relevant Aspects of Project[3]	Coordination
<p>Lao PDR Landscapes and Livelihoods Project[4]</p> <ul style="list-style-type: none"> - GEF Project ID: 10499 - GEF funding source(s): BD, LD - GEF project funding: 7,366,976 USD - Executing Agency: MAF - GEF Agency: World Bank - Status: Concept approved 1 Jun 2020 - Provisional operational timeline: 84 months; beginning late-2021 	<p><u>Objective:</u> To improve sustainable forest management and enhance livelihoods opportunities in selected landscapes in Lao PDR</p> <p><u>Component 1:</u> Strengthened investment and capacity in sustainable forest management.</p> <p>Project financing would focus on public sector interventions in (i) National Parks, protected areas and tourism, including protected area management, biodiversity monitoring and protection, outreach and village land use planning; (ii) Participatory sustainable forest management and restoration in production and protection forest areas including PSFM and village forestry in production and protection forests, village land use planning and extension.</p> <p>Parallel private sector investment (environmentally and socially sustainable industrial and smallholder plantations, tourism development) and other public sector investments leveraged by enabling activities by the project. Reduced flood, drought, and landslide risks by maintaining and restoring forest cover and soil and water conservation structures and other natural solutions in targeted sites and community-based green infrastructure.</p> <p>Sub-component 1.1: National Parks, Protected Areas and Tourism \$ 4,214,250 (GEF BD)</p> <p>? Spatial and land-use planning to ensure that land and resource use is appropriately situated to maximize production without undermining or degrading biodiversity.</p> <p>? Conservation and sustainable use of globally important biodiversity in key landscapes and forested areas in production landscapes;</p> <p>? Improved financial sustainability, effective management, and ecosystem coverage of selected protected areas through the enhancement of the effectiveness of PA systems, and management of biodiversity in protected areas (i.e., conservation landscapes);</p> <p>? Adoption of participatory management plans for protected areas, including buffer zone communities.</p> <p>Sub-component 1.2: Participatory Sustainable Forest Management and Restoration in Production and Protection Forests \$2,327,726 (GEF LD)</p> <p>? Maintained or improved flows of ecosystem services, including sustaining livelihoods of forest-dependent people through forest landscape restoration and sustainable landscape management in forest and mixed-use systems at the forest margin, including village forestry, participatory SFM, and sustainable land management practices such as assisted natural regeneration;</p> <p>? Support to smallholders through special lending and through extension systems</p> <p>? Set aside of high conservation value forest (HCVF) areas (i.e., ?natural forests?) inside of commercial managed areas (e.g. concessions, environmentally and socially sustainable plantations, farms, etc.) and within the broader production landscape;</p> <p>? Restoration of degraded production landscapes, treeless areas inside designated production and protection forests.</p> <p>? Targeted investments in soil and water conservation and other natural solutions to sustain and rebuild productive areas, mitigate the effects of drought, flood and landslides, increase resilience;</p>	<p>As MAF is the executing partner for both projects, coordination will be facilitated via the PSCs of both projects. Representatives from the BD/LD project will be invited to participate in project workshops, to join the LDCF Uplands project's TAG and, with approval of the PSC, to observe PSC meetings.</p> <p>If the BD/LD project is approved, the LDCF Uplands project will coordinate to ensure a harmonized approach for land-use planning in relation to forest management and NTFP management, support for sustainable livelihoods, ecosystem-based approaches, and value-chain development.</p> <p>The LDCF Uplands project will also coordinate to ensure synergies in approaches to</p>

GEF-financed Project	Relevant Aspects of Project ^[3]	Coordination
<p>Integrated Water Resource Management and Ecosystem-based Adaptation (EbA) in the Xe Bang Hieng River Basin and Luang Prabang City^[5]</p> <ul style="list-style-type: none"> - GEF Project ID: 10514 - GEF funding source(s): LDCF - GEF project funding: 5,329,452 USD - Executing Agency: MoNRE-Dept. of Water Resources - GEF Agency: UNDP - Status: Concept approved 3 June 2020 - Operational timeline: 48 months; beginning late-2021 	<p><u>Objective:</u> Promote integrated management of sites in the Mekong River Basin for increased climate resilience of Savannakhet Province and Luang Prabang communities vulnerable to floods and droughts, which are expected to worsen under future scenarios.</p> <p><u>Component 1:</u> Developing national and provincial capacities for Integrated Catchment Management (ICM) and integrated urban Ecosystem-based Adaptation (EbA) for climate risk reduction.</p> <p>Outcome 1.1: Enhanced capacity for climate risk modelling and integrated planning in the Xe Bang Hieng river basin and Luang Prabang urban area.</p> <p>\$500,000 (GEF LDCF)</p> <p>Output 1.1.1: Central and provincial training program implemented to enable climate risk-informed water management practices in target urban and rural areas.</p> <p>Output 1.1.3: Economic valuation conducted of urban ecosystem services and protective options in Luang Prabang.</p> <p>Outcome 1.2: Alignment of policy frameworks and plans for land and risk management to support long-term climate resilience.</p> <p>\$700,000 (GEF LDCF)</p> <p>Output 1.2.1: Fine-scale climate-resilient development and land-use plans drafted and validated for Luang Prabang and in the headwater and lowland areas of the Xe Bang Hieng and Xe Champone rivers.</p> <p><u>Component 2:</u> Ecosystem-based Adaptation (EbA) interventions, with supporting protective infrastructure, and livelihood enhancement.</p> <p>Outcome 2.1: Ecosystems restored and protected to improve climate resilience in headwater areas through conservation zone management.</p> <p>\$1,400,000 (GEF LDCF)</p> <p>Output 2.1.1: Xe Bang Hieng headwater conservation zone</p>	<p>If the IWRM project is approved, representatives will be invited to participate in the LDCF Uplands project's workshops and to join the Uplands project's TAG.</p> <p>Although the two projects have several overlapping development objectives, the technical areas are somewhat distinct. Whereas the IWRM project focuses on urban implications of river basin management, the LDCF project focuses on upland rural areas. However, there are important linkages regarding how upland rural land uses affect downstream urban communities.</p> <p>The two projects have minimal geographic overlap. Whereas the IWRM project will work in the Xe Bang Hieng River Basin in southeastern</p>

GEF-financed Project	Relevant Aspects of Project[3]	Coordination
<p>Strengthening Lao PDR's Institutional Capacity to Comply with the Enhanced Transparency Framework under the Paris Agreement[6]</p> <ul style="list-style-type: none"> - GEF Project ID: 10039 - GEF funding source(s): CBIT - GEF project funding: 1,210,000 USD - Executing Agency: MoNRE-DCC - GEF Agency: UNEP - Status: operational - Operational timeline: 36 months; late-2019 to late-2022 	<p><u>Objective:</u> Strengthen Lao PDR's 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</p> <p><u>Component 1:</u> Strengthening of Lao PDR's Transparency Framework for Mitigation</p> <p>Outcome 1: Lao PDR has the institutional and technical capacities to systemize data collection and reporting for transparency</p> <p>\$950,000 (GEF CBIT)</p> <p>Output 1.1: Gap analysis of the institutional arrangements and capacities to comply with the ETF is carried out.</p> <p>Output 1.2: Institutional mechanism for inter-ministerial cooperation on systemizing data collection and processing is established and formalized.</p> <p>Output 1.6: Short courses at the National University of Laos are established and training to relevant staff in line ministries and agencies is provided.</p> <p>Output 1.7: Regional cooperation and knowledge-sharing activities on transparency are carried out.</p>	<p>Coordination with this project has been on-going throughout the PPG phase and will continue during implementation.</p> <p>As above, the primary mechanism of coordination is via the OFP's membership on the PSC, along with direct coordination via DCC.</p> <p>Representatives from the CBIT project will be invited to participate in project workshops, to join the LDCF Uplands project's TAG and, with approval of the PSC, to observe PSC meetings.</p> <p>The LDCF Uplands project will coordinate to ensure harmonization on capacity development initiatives related to strategic planning and policies for CCM and CCA co-benefits. The LDCF Uplands project (under Component 1) will, to the extent possible,</p>

As indicated throughout this document, this project will also build significantly upon the achievements of the SAMIS project (GEF ID: 5462)[7]. That project has not been included in this section because it is expected to have closed by the time this project is operational.

Additionally, Lao PDR was the first country to host a GEF-GCF Coordinated Engagement Pilot (in February, 2019), which ensures alignment between GEF and GCF national strategic planning. That coordinated engagement has fostered on-going efforts to harmonize and align the efforts of Lao PDR's GEF and GCF projects. For example, this LDCF Uplands project and the GIZ-led GCF project 'Implementation of the Lao PDR Emission Reductions Programme through improved governance and sustainable forest landscape management' [8] have been developed in coordination in order to maximize synergies. (See description of alignment between the two projects in the final table of section 1.a.5.) Similarly, Lao PDR's GCF Country Programme refers explicitly to accessing GCF resources in order to leverage LDCF investments, particularly associated with land uses with implications for water resources, as is the case for this LDCF Uplands project.

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

This project has been designed to address and align with GoL's national priorities. For example, agriculture is one of the four key sectors highlighted by Lao's **National Adaptation Programme of Action** (NAPA). Additionally, within Lao PDR's **Nationally Determined Contribution** (NDC), agriculture, forestry, and water resources comprise three of the five key sectors designated as highly vulnerable to climate change and requiring priority adaptation measures. The first adaptation objective of Lao PDR's NDC is the promotion of resilient agriculture, which entails promotion of resilient agricultural farming practices and technologies to address climate change impacts as well as crop and animal diversification and resilience, especially in areas where climate change is likely to exacerbate floods and droughts. Both NDC and NAPA have prioritized increasing climate resilience in the agricultural sector, and the NDC stresses the need for effective management of water resources and forests to both mitigate and adapt to climate change.

This project aligns with Lao PDR's ratification of the **Paris Agreement** via the following CCA priorities as indicated in the NDC and the Second National Communication to the UNFCCC (NC2):

- ? Promote Climate Resilience in Farming Systems and Agriculture Infrastructure
 - o Sector: crops, plant production and livestock management
- ? Strengthening Water Resource Information Systems for Climate Change Adaption
 - o Sector: water, water management
- ? Managing Watersheds and Wetlands for Climate Change Resilience
 - o Sector: water, water management, forestry
- ? Increasing Water Resource Infrastructure Resilience to Climate Change
 - o Sector: water, water management, irrigation

The **National Adaptation Programme of Action (NAPA)**, published in 2009, highlights five main barriers to its implementation that this LDCF project will address: (i) coordination and cooperation amongst the sectors concerned; (ii) lack of accurate information and data; (iii) lack of capacity, awareness, and systematic monitoring; (iv) lack of appropriate tools and equipment, such as guidelines and communication material on how to adapt to climate change; and (v) limited budgets to implement alternatives. Among the NAPA's identified priorities for the agricultural sector, this project will address: (i) crop and livelihood diversification; (ii) promotion of secondary professions; (iii) mobilization of funds; (iv) land-use planning; (v) improved productivity; and (vi) better organization of agricultural production. The project will also address several priority areas listed in the NAPA for the forestry sector, including: (i) eradication of slash and burn; (ii) use of village forests; (iii) seed production, nurseries, and forest-fire control; (iv) public awareness; (v) integrated forest plantation management; and (vi) village forests and NTFPs.

The project aligns with Lao PDR's **National Strategy on Climate Change** (NSCC, 2010). The NSCC highlights integrated solutions, awareness, education, community participation, innovative financial instruments, and the integration of climate- and disease-resilient crops and farming patterns into landscapes. For climate-change adaptation, this translates into the NSCC's following goals: (i) increased resilience of key economic sectors and natural resources to climate change and its impacts; (ii) enhanced cooperation, strong alliances, and partnerships with national stakeholders and international partners to achieve national development goals; and (iii) improved public awareness and understanding of various stakeholders about climate-change vulnerabilities and impacts in order to increase stakeholders' willingness to take actions. This LDCF project also supports the NSCC's agricultural priorities, including: (i) promote climate resilience in farming systems and agricultural infrastructure; (ii) promote appropriate technologies for climate-change adaptation, including conservation agriculture and climate-smart/ -resilient

agricultural practices; (iii) strengthen financial instruments and capacity development for farmers; and (iv) enhance information-dissemination and extension support (to staff and farmers).

The project is also relevant to the **Climate Change Action Plan (CCAP)**, which promotes actions to develop institutional and human resource capacity on climate change, build climate resilience for farming systems and rural economies, improve resilience of forest ecosystem services and goods, improve the management of agricultural lands, mobilize new climate-related finance mechanisms, and strengthen education and public awareness in media.[\[1\]](#)

The project will directly support several priorities from Lao PDR's **Nationally Determined Contribution (NDC)**, particularly regarding adaptation in the agricultural, forestry, and land-use change sectors. These include the following priorities for the agricultural sector: (i) promote climate resilience in farming systems and agricultural infrastructure; (ii) improve appropriate resilient agricultural farming system practices and technologies to address climate change impacts; and (iii) develop and improve crops and animal diversification and resilience, especially in areas at risk for floods and droughts. The NDC's relevant priorities in the forestry and land-use change sectors include: (i) promote climate resilience in forestry production and forest ecosystems and (ii) promote technical capacity in the forestry sector for managing forests for climate change adaptation. GoL has earmarked 12.5 million USD for the implementation of the measures identified in the NDC, but has noted the need for external financing of approximately 1.5 billion USD.

DCC is currently collaborating with UNEP to develop Lao PDR's **National Adaptation Plan (NAP)**. This LDCF project will collaborate closely with that on-going process.

The 2013 **Technology Needs Assessment for Climate Change Adaptation (TNA CCA)** highlights the need to support and expand integrated cropping and agroforestry in order to help farmers adapt to climate change and build climate resilience. This project aligns with those objectives by investing in strategies, community-led plans, physical assets and technologies, institutional capacities, technical assistance, value chains, and local adaptive capacities in support of integrated farming, soil improvement (soil carbon management, conservation agriculture), integrated land use planning, conservation agriculture, crop diversification, livelihood diversification, and development of NTFP markets. These approaches also offer considerable CCM co-benefits. For example, the **Technology Needs Assessment for Climate Change Mitigation (TNA CCM)**, submitted by DCC to UNFCCC, highlights the necessity of developing climate-change-oriented agroforestry systems that maximize carbon capture and storage and can contribute socio-economic and environmental benefits. The TNA CCM emphasizes that sustainable community forest management plays a critical role in climate change mitigation, agroforestry is an important carbon sink

with significant potential, and expanded adoption of conservation agriculture would substantially reduce net emissions.

This project is consistent with the objectives of the **Agricultural Development Strategy 2011-2020** (ADS), which discusses the threats that poor land-management practices pose in terms of land degradation, lower productivity, and desertification. Of particular relevance is the objective to restore degraded forestlands and reduce upland degradation to improve resilience to climate change. The ADS also highlights the importance of ecosystem-friendly agroforestry farming systems, including integration of livestock with crop production, diversified farming systems, conservation agriculture, and supportive market frameworks (e.g., organic, GAP, fair trade). Similarly, the **Agriculture and Forestry Development Strategy to 2025 with Vision to 2030** highlights the importance of adoption of sustainable production practices adapted to local contexts and increased agricultural production.

The **8th National Socio-economic Development Plan 2016-2020** (NSEDP) highlights the need to: (i) halt slash-and-burn cultivation and increase forest cover to 70% by 2020; (ii) protect and sustain the environment and plan for climate change mitigation, especially to preserve and enhance forest cover and conserve water; (iii) identify development zones and land-use areas, especially areas with forest cover, including conservation areas, production forests, protected forests, and watersheds; and (iv) ensure resources to help prevent natural disasters, particularly forest fires, droughts, floods, and erosion of riparian and upland areas. Also relevant to the LDCF project, the NSEDP promotes SMEs, addressing gender equity, rural agricultural value chains (e.g., value-added processing), and enhanced participation at village and village-cluster (*kumban*) levels.

The project supports Lao PDR's commitment to green growth as described in the NSEDP and in the **National Green Growth Strategy for 2030** (NGGS), the objective of which is: "Promoting economic growth, poverty reduction and raising of living standards of the people in a comprehensive, inclusive and equitable manner in conjunction with increasing efficient natural resources utilization, decreasing pollution, wastes, greenhouse gas emissions, risks and vulnerability to climate change and natural disasters." The NGGS prioritizes: (i) a macro-economic environment that facilitates growth and shared prosperity; (ii) forestry reforms with public and private investment in production and conservation; (iii) protected area management and tourism; (iv) the water/energy nexus; (v) environmental management including water, air and chemical pollution, with an increasing emphasis on waste management; (vi) climate risk management to address flooding, drought, and changing uses of landscapes; and (vii) livelihoods, jobs, income and human capital development dependent on natural capital, environmental security, and macro-economic stability. The NGGS supports addressing these priorities with convergent and mutually supportive public and private investments, particularly in conservation, forestry, nature-based tourism, the water/ energy nexus, environmental fiscal instruments, and pollution-management.

The NGGS will be reflected in the agricultural sector by the **Strategic Framework for Green and Sustainable Agriculture**, which MAF is currently developing. Consultations in the development process are on-going, and the framework is expected to be ready for adoption by October 2020. As of July 2020,

the framework's preliminarily identified investment priorities are: (i) green agricultural innovations and technologies, (ii) green extension, and (iii) green marketing and value chains.

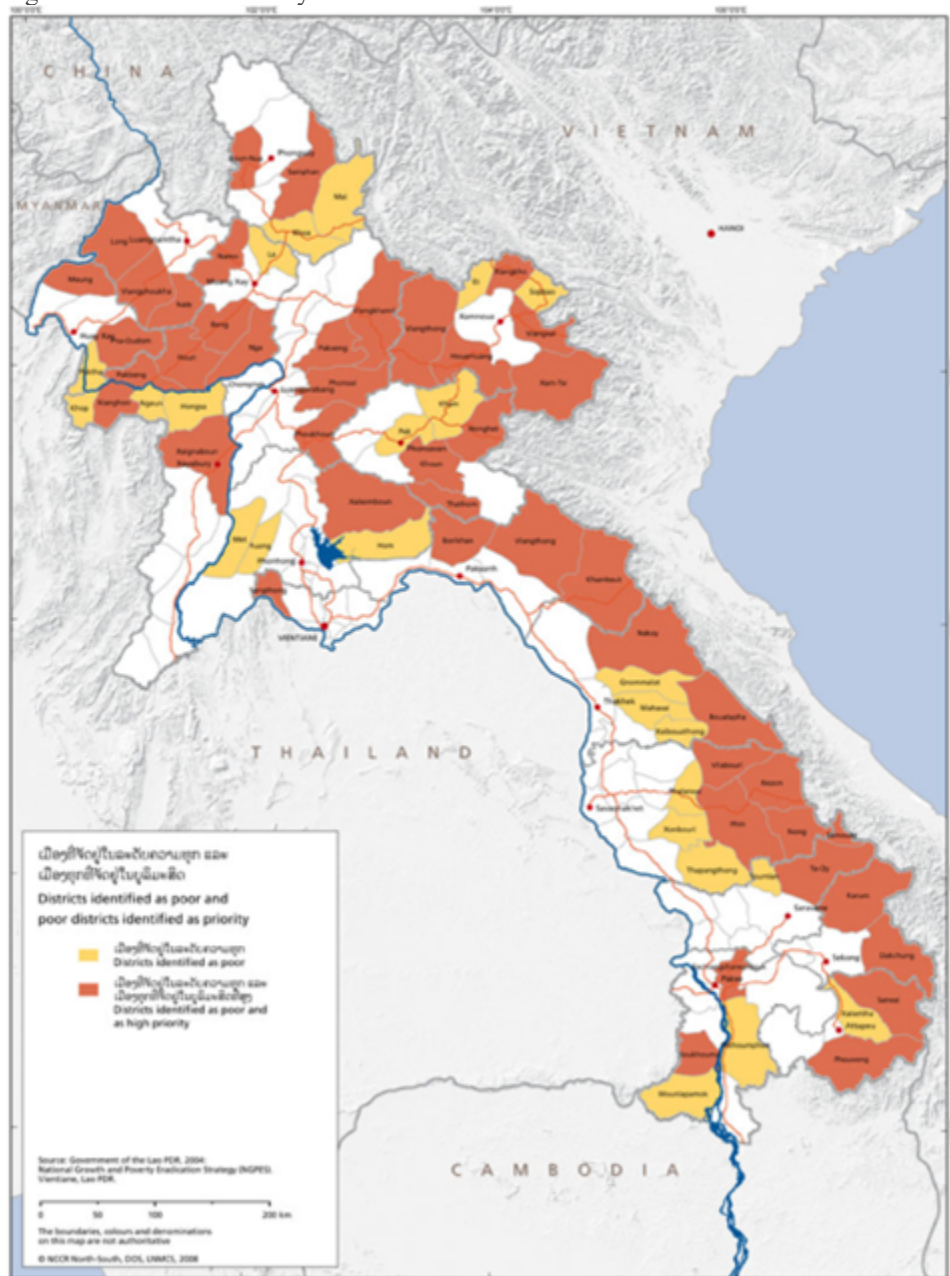
Along with other issues, the **Forestry Sector Strategy for 2020 (FS2020)** addresses the allocation of forests within village boundaries for sustainable management, the classification of village forest use (e.g. for protection, rehabilitation), and agreements on rules for managing each forest type. FS2020 supports poverty-reduction goals through forestry via capacity-building, law enforcement, inclusive participation, domestic processing, NTFP management, and protection of soils and watersheds each of which is directly or indirectly supported by this project.

The project is also aligned with the **National Action Program on Combating Drought and Desertification** (1999), the main objectives of which are food security, stabilization and reduction of slash-and-burn cultivation, conservation of watershed forests, enhancement of farmer livelihoods, and poverty reduction.

This LDCF project is also aligned with the **National Nutrition Policy 2010 (NNP)**, which stresses the importance of dietary diversity as well as ensuring an adequate and balanced intake of fat, protein, and micronutrients (which, in Lao PDR, are obtained especially from NTFPs and fruit).

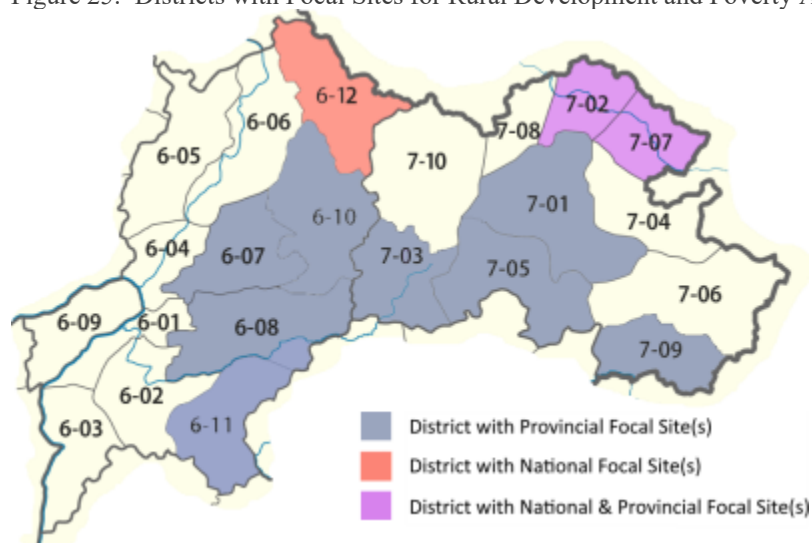
The project is also relevant to the priorities of several other wider development strategies and plans for Lao PDR. These include the **National Growth and Poverty Eradication Strategy (NGPES)**, which highlights the agricultural and forestry sector as one of four main sectors best positioned to support growth and poverty-reduction. Additionally, agroforestry is identified as a key sub-sector to support growth. In order to help target relevant interventions, the NGPES identified poor and priority poor districts throughout the country. (See Figure 24.) They include the eastern districts of Luang Prabang and the outer districts of Houaphan (i.e., excluding Xamneua).

Figure 24: Poor and Priority Poor Districts



Additionally, GoL has designated focal districts and focal villages for rural development and poverty alleviation, as depicted in Figure 25. These geographic prioritizations have been taken into account in the project's site-selection process, which is reported in Annex L.

Figure 25: Districts with Focal Sites for Rural Development and Poverty Alleviation



Luang Prabang		Houaphan	
District	Code	District	Code
Luang Prabang	601	Xamneua	701
Xieng Ngeun	602	Xiengkhor	702
Nan	603	Hiem	703
Pak Ou	604	Viengxay	704
Nambak	605	Huameuang	705
Ngoi (Ngoy)	606	Xiamtay	706
Pak Xeng	607	Sopbao	707
Phonxay	608	Et	708
Chomphet	609	Kouan	709
Viengkham	610	Xon (Sone)	710
Phoukhoun	611		
Phonthong	612		

[1] Relatedly, Lao PDR's *Climate Change and Disaster Law* has been in development for the past few years. However, details have not yet been publicly released for programmatic alignment.

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

This project's knowledge-management (KM) approach is decision-process-oriented. That is, the goal of KM in the context of this project is to improve the quality of decision-making that results from information gathered and generated by this project.

Therefore, this project's KM approach is the coordinating framework for stakeholder engagements (understanding stakeholders' priorities, critical decisions, and associated informational gaps), M&E plan (including indicators and results framework), communication plan, and sharing of best practices. The KM

approach aims to improve decision-making for all stakeholders both during and after the project. Therefore, the project's KM approach bridges between project-oriented metrics and longer-term systems (e.g., national frameworks for measurement, reporting, etc.).

The project's KM is aligned with FAO's Knowledge Strategy Principles, presented in Table 14.

Table 14: FAO's Knowledge Strategy Principles

Principle	Description
Policy and Program	
1. Programmatic Role	The FAO Programme expresses Member States' priorities for FAO services, while the Knowledge Strategy and related activities support the Programme by improving the design and delivery of programme outputs.
2. Scope	Knowledge is part of an FAO Core Function with the purpose of 'stimulating the generation, dissemination and application of information and knowledge, including statistics.' All FAO programmes have a knowledge element at some level.
3. Results-based	The Knowledge Strategy is conceptually rigorous but practical and results-based.
4. Evolution, not revolution	FAO is already an active knowledge manager. It will both build upon successful techniques already being used and encourage innovation.
2. Global perspective	The Knowledge Strategy acknowledges that FAO is not the direct custodian of all of the world's knowledge of agriculture; rather, FAO will play a key facilitation role in ensuring that the world's knowledge resources are available to those who need it, when they need it and in a format they can access and use.
People	
3. Enabling and connecting people	The Knowledge Strategy recognizes the vital role that people 'within FAO, in partner organizations, and in Member States themselves' play in generating, disseminating, sharing and acting on knowledge in pursuit of FAO's corporate objectives.
4. Part of a broader human resources initiative	The Knowledge Strategy is part of a broader strategy to improve the effectiveness and productivity of FAO's staff.
Technology	
5. Supporting role of technology	The Knowledge Strategy recognizes technology as an important enabler but emphasizes that technology should be subordinate to policy, people and process considerations.
6. Technologically neutral	Since specific technologies change over time, the Knowledge Strategy will strive to be 'technology neutral.'
Implementation and Support	
7. On-going and iterative process	To promote continuous improvement, the processes for implementing the Knowledge Strategy are iterative, and every opportunity will be taken to learn from both successes and failures. The scope of support activities associated with the Knowledge Strategy may include coordination, provision of an enabling environment, specific services to technical programmes, and direct services to Member States.

Additionally, FAO's institutional knowledge strategy^[1] identifies two primary change objectives:

1. In FAO's programs, improving the balance and integration between
 - a. Producing information and knowledge
 - b. Facilitating access to and flow of information and knowledge
2. Increasing the adoption of information- and knowledge-sharing concepts, methods, and tools.

The strategy suggests that in most contexts, projects should aim especially to support 1.b., including by:

i. *Promoting and supporting networks and communities*

The project will support multi-stakeholder platforms at national and sub-national levels, local community decision-making and organizations (e.g., producer organizations), and value-chain networks. These platforms and networks play a critical role in facilitating multi-stakeholder knowledge-sharing, including farmer-to-farmer knowledge-sharing.

ii. *Improving the quality and effectiveness of the knowledge-sharing and learning activities in FAO's policy support, capacity-development, and advocacy work*

The project's knowledge-sharing efforts extend to all aspects of the project's interventions.

iii. *Working specifically to reduce impediments to accessing knowledge, such as copyright restrictions and language coverage*

This project will ensure that project-produced data and materials are publicly available and that materials are available in local languages.

iv. *Promoting inter-operability of information systems and repositories through partnerships, agreements, standards, and appropriate tools and infrastructure*

This project is facilitating a standardized approach to LUP that mainstreams CCA (preliminarily identified as P-FALUPAM). The project's M&E also harmonizes with evolving frameworks for governmental CCA tracking.

The project's KM approach will be operationalized via several budgeted outputs, as indicated in the following table. Component 4 of the project contains most of the project's KM activities.

8.b. Knowledge management plan

Table 15: Budgeted Knowledge Management Plan

KM Component	Timing	Responsibility	Budget
KM & Communications Specialist	Years 1 ? 5	PMU	36,000
Stakeholder Engagement	Years 1 ? 5	PMU	20,000
Communication Plan	Years 1 ? 5	PMU	31,000
M&E plan[2]	Years 1 ? 5	PMU	206,600
Inception Workshops	Year 1	PMU	20,000
Mid-term Workshops	Year 3	PMU	20,000
Final Workshops	Year 5	PMU	20,000
Multi-stakeholder plenary consultations for land-use and investment planning (provincial and district; 2.1.3.4.)	Years 2 & 3	PAFOs (LP & HP)	38,000
Meetings of agricultural value-chain networks (2.2.1.2.)	Semi- annual Years 2 ? 5	Designated NGO(s)	60,000
Multi-stakeholder plenary consultations for value-chain investments (provincial and district; 2.2.3.2.)	Year 3	DoSMEP	55,000
Trainings for value-chain network coordination groups	Year 2	DTEAP	54,000

Public announcements for LaCSA (4.1.2.3.)	Years 1 ? 3	DMH	15,000
Total			575,600

As part of the knowledge management approach, the project will coordinate closely with other initiatives to strengthen stakeholders' access to updated information, knowledge-sharing, and learning opportunities. In particular, the project will capture and build on lessons learned from other initiatives while also contributing to knowledge-sharing with wider stakeholder groups. For instance, at the national level, the project will benefit from information and knowledge-sharing through the inter-sectoral platform, while at the community-level, best practices and innovations co-financing and baseline initiatives will inform the project's implementation. FAO will work closely with the executing agencies and relevant partners to prepare necessary documentation, publications, and other materials capturing the project's achievements, best practices, and lessons learned.

8.c. Lessons learned

Source	Relevant Lessons Learned	Implications for This Project
<p>IRAS: Improving the Resilience of the Agricultural Sector (IRAS) to Climate Change Impact in Lao PDR (UNDP, 2016)</p>	<ul style="list-style-type: none"> - Selection of project's geographical areas should be based on systematic screening and consultation with relevant stakeholders. - Sufficient time is needed in order to comply with formalities required by donor and government. - Clear activity plan and time-frame for project implementation, M&E, and impact assessment is needed if project's period is fixed without any extension. - When possible, follow-on projects should be identified to scale-up best-practices carry forward the project's momentum, tools, structures, and procedures. 	<ul style="list-style-type: none"> - District and village selection was based on systematic screening and consultation with broad range of stakeholders. - Inception phase includes time and specified priorities for formalities of operationalization. FAO will offer administrative and operational support to meet timelines and facilitate processing. - The PSC has sufficient authority to ensure flexibility for adaptive and efficient delivery. Additionally, the project's MTE will provide a basis for re-evaluating the glide slope for timely completion of the project. - At mid-term, the PMU and PSC will identify initiatives (projects, programs, etc.) to carry forward relevant activities, procedures, etc.
<p>Mekong River Commission (MRC): Final report for the first batch of local demonstration projects on climate change adaptation Lao PDR (2014)</p>	<ul style="list-style-type: none"> - Local capacities for adaptation planning and reporting were strengthened via (i) visits to sites with analogous climate change impacts (current and forecast), (ii) a rapid vulnerability assessment, and (iii) prioritization of adaptation activities. - Local adaptation activities should be supported by local evidence and consider local villagers' ideas about effective CCA practices. - A holistic approach to climate resilience should consider household- and village-level integration of farm and non-farm income strategies. - More support is needed to form and strengthen local groups that facilitate CCA-related learning, planning, and coping. 	<ul style="list-style-type: none"> - The project will build capacities at all levels particularly in association with CCA and CSA practices. - The project will use highly participatory approaches to ensure local relevance and buy-in. - Project-supported business plans will take a holistic approach to local livelihoods, considering many sources of potential diversification for subsistence and incomes (e.g., subsistence agriculture, cash crops/livestock, value-addition, NTFPs, non-farm manufacturing at the village level). - The project will support coordination and organization mechanisms at several levels, including producer groups, FFS, and value-chain networks. CCA will be mainstreamed into institutions and practices for local-level land-use planning.

<p>EFICAS: Assessing project impacts monitoring resilience and adaptation (2018)</p>	<ul style="list-style-type: none"> - Development of adaptive systems requires local capacity-building to innovate and develop platforms, networks, and skills. - Exploring farmers' priorities for their households? economy is needed prior to engaging farmers into implementing PLUP. - Sustainability is facilitated by the combination of participatory approaches to LUP, integration of local LUP into landscape-level planning and context, and packages of relevant technical assistance for local capacity-development. - LUP and livestock intensification can foster eco-friendly and resilient agriculture, but require long timelines (5 ? 10 years). Crop diversification can be slightly faster, but depends on market opportunities/ development. - Capacity building of PAFOs/ DAFOs is crucial to up-scale local interventions. Aligning PLUPs with Community-based Agricultural Development Plans (CADPs) requires external support to facilitate the process, multi-stakeholder platforms, and convergent value-chain development. 	<ul style="list-style-type: none"> - A significant portion of the project's activities will build local capacities and networks. - The project's participatory operational approaches (e.g., P-FALUPAM) facilitate responsiveness to local priorities and contexts. - Whereas many of the project's interventions will yield somewhat invisible benefits (e.g., averted harms) or will produce most benefits on a longer time scale (beyond the end of the project), the project will enmesh short- and medium-term benefits to supported approaches (e.g., transitional approaches that yield near-term benefits while implementing long-term sustainability). - The project will invest in capacity-development of PAFOs and DAFOs and will rely substantially on them for delivery. - The project will directly facilitates climate-adaptive, convergent approaches to land-use planning, land-use practices, and agricultural value chains.
<p>MRC: Final report on agricultural land-use monitoring (pilot study in selected areas in each member country) (2019)</p>	<ul style="list-style-type: none"> - Data on land uses may differ significantly between land-use plans at local level, aggregated land-use maps at provincial and national levels, observed land uses (via remote-sensing or direct observation), and reported land uses. - These differences may be a function of inconsistencies or ambiguities in measurement/ reporting, errors (e.g., from lack of resources), or external influences on reporting (e.g., uncertainty about how the information will be used, incentives or disincentives for reporting certain kinds of information). - It is therefore important to understand the context in which land-use plans are made and in which land uses are reported. 	<ul style="list-style-type: none"> - The project will seek to verify land-use plans and land uses directly when possible (even if only via spot-checks) and to support efforts for cross-verification, particularly when direct verification is difficult. - The project will also integrate contextual considerations into land-use planning, such as by helping communities consider the incentives/ disincentives, constraints, obstacles, challenges, etc. that might impede implementation of their LUPs. - The project's support of on-going efforts at ISP will help address some of these challenges (e.g., conflicting land-use designations).

<p>GRET: Final evaluation of the bamboo project in Houaphanh province (2015)</p>	<ul style="list-style-type: none"> - Effective resource management, such as by village bamboo committees, depends on effective monitoring, including accurate resource mapping/ accounting as well as monitoring and enforcement of rules. - Good governance and organizational capacity-development are important for NTFP management. Producer groups benefit from strengthened internal organization, collection of fees, fund management and transparency, and empowered negotiating positions (contract terms, price, quality, volume, etc.). - Deepen the exploration of domestic and export markets is an important step to promote the value chains. - Effective NTFP value chains, such as for the bamboo sector and sub-sectors, require producer organizations, such as the Bamboo Service Association (BSA), to organize producers, represent their views, arrange technical, operational, financial, or political assistance, etc. 	<ul style="list-style-type: none"> - The project will build local capacities for good governance of NTFPs, including effective monitoring and enforcement. - The project will support investments in physical assets with investments in corresponding technical and operational capacities. - The project will seek to strengthen agricultural value chains (including for NTFPs) by focusing on network development and ensuring demand-side ?pull?. - The project will support producer organizations, including through capacity development for organizing value-chain networks.
<p>SIDA: Land-use planning and land allocation in the upland of northern Laos: Process evaluation and impacts (2009)</p>	<ul style="list-style-type: none"> - Land-use planning and land-allocation (LUP/LA) methodologies should be reviewed and consolidated to enable a consistent national approach. - LUP/LA requires sufficient financial and human resources, including technical extension services at district level, and LUP/LA should be integrated into village development programs. - Communal land registration is needed in order to sustain the management of village forests. 	<ul style="list-style-type: none"> - During the PPG, existing LUP approaches were compared and discussed with governmental counterparts to identify a preferred approach for consistent national implementation. P-FALUPAM was identified as the primary preferred approach, and might integrate aspects of PALM and ISP. The TAG will review these options to recommend a unified approach for the project and broader governmental LUP. - This project will provide full support for capacity development to enable P-FALUPAM (including materials development, local translations, training of trainers, etc.) for targeted districts, and supported LUPs will integrate with development plans at community, district, and provincial levels, and will inform national development plans. - Communal land is an important part of LUP and the project will apply a comprehensive approach (FALUPaM, ISP, etc.) to register and manage it.

8.d. Communication strategy

In line with FAO's Knowledge Strategy (see above) and the project's knowledge management plan, **the project's communication strategy will ensure that all relevant stakeholders benefit from information gathered and generated by the project.**

An important consideration in this regard is that **the PMU will ensure that all project materials are generated in formats that target the widest possible range of stakeholders**, including (as relevant) illiterate stakeholders, speakers of indigenous languages and dialects, etc. This also means that all communications will avoid unnecessary jargon or unfamiliar terminology. That is, **all communications will be designed, produced, and disseminated from the users' points of view, with a clear sense of the intended uses and outcomes of the communications.**

At the national level, the PMU will produce the full communication activities and set up the appropriate communication tools. These include the project's website, newsletters, factsheets, policy briefs, social media strategy, case studies, technical reports, etc. The PMU will share these communications via various relevant knowledge platforms (domestically and internationally).

Regular meetings and workshops among the targeted provinces will be held to document and share lessons learned, challenges, and best practices. This will bring key representatives (e.g., farmers, farmer/ producer groups, PAFOs, DAFOs, POFs, value-chain actors, etc.) to meet and discuss.

At provincial and local levels, the project will use community-led and gender-differentiated dissemination systems for sharing information and facilitating the learning cycle.

In order to share information publicly about the project's implementation and best practices, the PMU will support integration within existing governmental websites (e.g., MAF-DALAM, DMH, MoE-DCC, SWG-ARD) to ensure sustainability and ownership.

Planned activities at national, regional, provincial, and community levels include:

National level:

- Document and disseminate lessons learned and best practices through different fora and audience-appropriate media (e.g., video, posters, pamphlets/ leaflets/ flyers, case studies, study tours, community exchange visits, social media).
- Host a mid-term workshop to review status and lessons-learned, and gather input for charting the way forward for the remainder of the project.
- Host a final dissemination workshop at the national level to share results, lessons learned, and best practices from the project's implementation with relevant stakeholders.

Inter-provincial level:

- Host value-chain workshops to strengthen value-chain networks and share best-practices.
- Organize multi-stakeholder workshops and consultations to refine priorities, share experiences, and solicit feedback among decentralized stakeholders.

- Organize events with model farmers to share their experiences (e.g., re: integrated cropping, adoption of improved rice varieties, use of certified seeds, contract farming) and present awards and recognitions.

Provincial level:

- Host multi-stakeholder workshop(s) at provincial and district levels to share information and experiences among relevant stakeholders (field practitioners, model farmers, producer groups, value-chain actors, NGOs/ CSOs, governmental staff, research institutions, key experts, etc.).

Community level:

- In the context of FFS, facilitate farmer-to-farmer exchanges that address specific practical challenges and experiences in order to reduce barriers to adoption and continuance of supported practices, and to boost wider field replications. Anticipated opportunities for exchanges include:
 - o Demo plots for crop diversification (e.g., fallow-to-perennial transitions, sachá inchi, perimeter plantings of roselle, etc.)
 - o Demo plots for climate-adaptive agro-ecological practices (e.g., cover-cropping, contour planting, alley-cropping/ erosion strips, rotational planting, ground cover, reduced tillage, etc.)
 - o Demo plots for NTFP enrichment plantings
 - o Exchange visits for producer groups (visits to other producers and other value-chain actors)
 - o Expanded village-level announcements for LaCSA
 - o Water-smart and water-harvesting systems, including local water resource management (e.g., managing water retention, community ponds, rainwater collection, water pipe system, etc.)
 - o Sharing best practices from community-led climate-resilient infrastructural investments (e.g., supported via CRIPs)

The PMU's proposed tools for enhancing the project's visibility include:

- Overall aspects
 - (i) Visual identification for project and partners;
 - (ii) Highlighting the project's partners in media interviews, press releases, etc.;

- (iii) Supporting documents such as photos of logos in the field, photos of activities, copies of press releases, etc. to be included in progress and final reports.
- Field level
 - (i) Signboards, display panels, and banners;
 - (ii) Publications and materials, such as training manuals and posters;
 - (iii) Supplies and equipment.
- Printed publications
 - (i) Brochures, leaflets, flyers, newsletters, and other publications of the project's activities and results.
- Project website
 - (i) Project information (objectives, activities, expected results, etc.);
 - (ii) Partnerships and links;
 - (iii) Donor funding logos.
- Project social media page
 - (i) project identity, funder logos, and photos/ short videos of project's achievements.
- YouTube
 - (i) short video clips documenting field experiences, stakeholder engagement (with consent), best practices, relevant interviews with stakeholders and experts, etc.
- Audiovisuals
 - (i) Films for distribution by the media (mainly for television, campaigns, and Internet);
 - (ii) Operational films (films to provide technical information and practices to local population, project partners, and authorities).
- Public events
 - (i) Many types of events are possible and attracting media interest will always be a key consideration in making the events cost-effective. Such events will be accompanied by press releases.

Channels of communication

Given the diversity of audiences that need to be informed and engaged, the PMU will select communication channels based on types of media that can be appropriately used by priority audiences:

Communication tools	Target Audiences
Policy briefs	Mainly policy makers and associated stakeholders (e.g., government, development partners, NGOs, scientists, etc.)
Websites	All types of audiences (domestic and international)
Workshops, stakeholder forums, consultations, etc.	All types of project stakeholders, especially local communities, producer organizations, value-chain actors, NGOs/ CSOs, and relevant governmental agencies.
Audio-visuals (television, films, etc.)	All types of audiences (domestic and international)
Social media (e.g., Facebook, YouTube)	All types of audiences (domestic and international)
Visualization materials	Mainly line ministries/ agencies, NGOs, and development partners.
Signboards, display panels, and banners	Mainly farmers, producer groups, and local communities
Printed publications such as training manuals, leaflets, posters, brochures, etc.	Mainly farmers, local communities, producer groups, provincial line departments, and NGOs/ CSOs
Printed publications such as newsletters, project reports, flyers etc.	All types of audiences (domestic and international)

[1] FAO. (2011). *FAO Knowledge Strategy*.

http://www.fao.org/fileadmin/user_upload/capacity_building/KM_Strategy.pdf

[2] For break-out, see Budgeted M&E Plan in section II.9.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

9.a. Cross-referencing

The project's Results Framework (Annex A) describes the project's indicators, methods of assessment, and associated responsibilities. The project's budget (Annex B) presents the project's budgeted activities, provisional workplan, and outcome-level indicators.

9.b. M&E Plan

During the project's inception phase, baselines for the results framework will be reviewed in the Inception Workshop and validated by the PSC, to be augmented and updated as necessary.

During the project's delivery, execution partners will maintain operational records in accordance with the Results Framework (e.g., records of training delivery indicating gender-disaggregated attendance, types of climate-resilient infrastructure purchased via CRIPs). Budgets for this record-keeping are integrated into the budgeting for the respective activities. Budgeting for consolidation of M&E reporting is integrated into budget for the PMU staffing (PMC).

It is expected that many of the project's benefits will accrue late in the project, particularly for household adoption of practices and resulting benefits. Therefore, quantifiable progress toward many of the project's

targets will likely not begin appreciably accruing until the project's 3rd or 4th year. This is especially true given that many of the project's benefits lag adoption by months or years (e.g., switching agricultural production practices). Many activities in the first half of the project--particularly at local levels--will focus on establishing the foundation for achievement of targets that require substantial enabling activities (e.g., technical assistance, institutional support, policy signalling, etc.).

Table 16: Budgeted M&E Plan

Activity	Timing	Responsibility	GEF Budget ^[1]
Record-keeping for reporting against results framework	Continuous	Per activity	Integrated into activity budgets
Travel costs for M&E	Continuous	PMU	Integrated into travel budgets
M&E consultant to establish project M&E system and regular reporting	M&E system set up at project start, reporting throughout lifetime of the project	PMU	27000
Inception workshops (1 national and 2 provincial) - PMU	First year at project start	PMU	20000
Mid-term workshops (1 national and 2 provincial) - PMU	Mid way through project	PMU	20000
Final workshops (1 national and 2 provincial) - PMU	Final year	PMU	20000
Mid-term evaluation	Approximately Month 31	PMU	40,000
Final/ Terminal evaluation	Approximately Month 55	PMU	60,000
Final report	Approximately Month 60	PMU	6550
Total			193550

^[1] USD

For stakeholder engagement plans, see Annex I.

9.c. Disclosure

The project will ensure transparency in the preparation, conduct, reporting, and evaluation of its activities. This includes full disclosure of all non-confidential information and consultation with major groups and representatives of local communities. The disclosure of information shall be ensured through posting on websites and dissemination of findings through knowledge products and events. Project reports will be broadly and freely shared, and findings and lessons learned made available.

For more information, see section II.8.: Knowledge Management and Annex I regarding stakeholder engagement and grievance redress mechanisms.

[1] USD

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

For a discussion of the project's various benefits, please see *Part II, Section 1.a.6. Adaptation benefits* and *Annex F: LDCF Core Indicator Worksheet*.

In addition to those benefits, the project will contribute to decent rural employment (DRE). Decent work provides opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.[1] In rural contexts, decent employment is intimately linked to agricultural livelihoods.

To ensure that FAO-supported initiatives contribute to decent rural employment, FAO has identified prioritized groups and four pillars for decent rural employment.[2] The following table presents an overview of the ways in which this LDCF-supported project contributes to decent rural employment within FAO's established framework.

Table 17: Project's Facilitation of Decent Rural Employment

Project's Facilitation of Decent Rural Employment
Relevant Prioritized Groups
<ul style="list-style-type: none">- Small-scale producers, including contributing family workers- Agricultural workers in paid employment- Workers engaged in paid employment in secondary/ tertiary activities directly linked to food production and agriculture, particularly in the informal economy- Women and youth within the previous categories- Specific vulnerable groups (e.g., landless people, migrant workers, disabled people, elderly people, single-adult households, and indigenous people)
Pillar 1: Employment-creation and enterprise-development
<ul style="list-style-type: none">- DRE addressed explicitly in agricultural and rural development policies, strategies, and programs- Small-scale producers (women and men) supported in accessing markets and modern value chains- Agribusiness and marketing micro, small, and medium enterprises supported in accessing markets, training, financial services, and other productive assets- Vocational and educational training programs on technical and business skills for rural people supported- Employment-centered livelihoods diversification mechanisms supported- Capacities of national partners supported to collect and analyze age- and sex-disaggregated data on rural labor markets
Pillar 2: Social protection
<ul style="list-style-type: none">- Mechanisms to extend social protection to small producers and informal workers supported, involving producer organizations and communities/ households- Public employment programs supported in rural areas, which adopt comprehensive approaches to build self-reliance beyond basic survival needs [e.g., project's funding of concessionally cofinanced local labor via CRIPs]- Labor-saving technologies developed for rural poor households and to reduce women's domestic and care tasks- Working conditions improved in rural areas, including living wages in agriculture [e.g., improved income]

Pillar 3: Standards and rights at work
- Socially responsible agricultural production supported, specifically to reduce gender and age-based discrimination [e.g., project's explicit support of gender-sensitive options for livelihood diversification and climate-adaptive production practices]
Pillar 4: Governance and social dialogue
<ul style="list-style-type: none"> - Support for strengthening of democratic organizations and networks of producers and workers, particularly in the informal rural food economy - Representation of the rural poor in social dialogue and policy dialogue through their organizations supported - Participation of rural poor in local decision-making and governance mechanisms supported - Rural women and youth groups empowered to be involved in these processes from the initial steps - Synergies built between organizations, programs, and countries, and producer-to-producer learning opportunities created

[1] <https://www.ilo.org/global/topics/decent-work/lang--en/index.htm>

[2] FAO, 2010. *Rural Employment, Guidance Material #1: Guidance on How to Address Decent Rural Employment in FAO Country Activities* (2nd ed.). <http://www.fao.org/3/i1937e/i1937e.pdf>

11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification *

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

Risks from the project

The following table addresses the risks identified in the Environmental and Social Risk Screening (see also attachments).

Risk Identified at PIF Stage	Risk Classification	Mitigation Actions
3.2.1 ? Risks associated with the importation or transfer of seeds and/or planting materials for cultivation	Moderate	Seed procurement is envisioned under the project. The project will use local seed supply systems. In all cases of seed procurement appropriate technical clearances will be sought. Any imported varieties used by the project would be based upon recommendations from the technical team implementing the project to enhance farmer resilience. Should this situation arise, appropriate technical clearances will be sought.
5.1 ? Risks associated with the procurement, supply, and/ or use of pesticides on crops, livestock, aquaculture, or forestry	Moderate	<p>The project does not call for the procurement or supply of pesticides. It also does not call for the use of pesticides, though it will offer farmer field school modules on integrated pest management (IPM). Therefore, the project's activities associated with this issue pertain entirely to capacity development for responsible use, favoring agro-ecological and nature-based solutions when practicable.</p> <p>In that context, it is unlikely but possible that pesticides could be procured as part of FFS curricula or small-scale demonstrations regarding IPM or crop management.</p> <p>If the project at some point considers the procurement or provision of pesticides, clearance procedures will be followed according to the guidance provided under ESS5 in FAO's ESM Guidelines and, as advised via the PSC, FAO's Plant Production and Protection Division will be consulted.</p>
5.2 ? Risks associated with the provision of seeds or other materials treated with pesticides (in the field and/ or in storage)	Moderate	<p>As above, the project's current formulation does not call for or foresee the provision of seeds or other materials that have been treated with pesticides. In fact, the project favors agro-ecological and nature-based solutions that reduce reliance on synthetic chemical inputs.</p> <p>If the project at some point considers the provision of seeds treated with pesticides (e.g., potentially as a small-scale FFS comparison plot), clearance procedures will be followed according to the guidance provided under ESS5 in FAO's ESM Guidelines and, as advised via the PSC, FAO's Plant Production and Protection Division will be consulted.</p>

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
LA-GEF7-LDCF-prodoc-Updated ESMP-20210521	CEO Endorsement ESS	
ESMP	CEO Endorsement ESS	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Note 1: The following table replicates the results framework integrated into the budget file (Annex A2), where the results framework can be more easily juxtaposed with the activity-based budget, administrative budget, and provisional work plan.

Note 2: The project's M&E will mirror governmental approaches to M&E, which allow indicators to reflect the multi-dimensionality of benefits. That is, the project will gather M&E information that reflects compounding benefits, such that multiple benefits can be recorded for a single household. However, given that LDCF indicators require attribution to single indicators in order to simplify aggregation and avoid "double-counting", a limited number of project indicators will feed into the LDCF indicators, such that, for example, a single household can only be shown to have experienced a single benefit.

Note 3: Many of the project's benefits will be based on extensive preparatory and foundational work in the early part of the project (e.g., studies, policy changes, technical capacity development, development of local interventions, trainings of trainers, delivery of local engagements, etc.), such that many measurable benefits will accrue primarily in the latter half of the project. This is especially true for benefits that rely on farmers' sales of agricultural crops (such that benefits lag adoption by at least several months).

Results chain	Indicators[1]	Baseline	Mid-term target	Final target	Means of verification	Responsible for data collection
Objective: To enhance resilience of vulnerable upland communities to climate change impacts through climate-smart agricultural practices in upland production systems.						
Component 1: Enabling environment to promote and incentivize resilient and sustainable rural landscapes in Lao PDR						
Outcome 1.1.: Strengthened capacity to mainstream and access climate finance for resilient and sustainable rural landscapes in Lao PDR.	a. Published guidelines on participatory, gender-sensitive inter-sectoral planning and investment processes at national and sub-national levels.*	--	1 national	1 national and 2 provincial	Project website	DOPF
	b. Number of institutional personnel trained in facilitation of the planning and investment processes in the published guidelines. (% women)*	--	40 (f: 30%)	100 (f: 30%)	Training records	DOPF

Results chain	Indicators[1]	Baseline	Mid-term target	Final target	Means of verification	Responsible for data collection
	c. Number of inter-sectoral coordination plans published for four districts of Luang Prabang and Houaphan provinces.*	--	2	4	Project website	DOPF
	d. Number of inter-sectoral coordination mechanisms established.*	--	1 national	1 national and 2 provincial	Pilot reports from 1.1.1. and 2.2.1.	PMU
	e. A memorandum of understanding between relevant ministries?including MAF, MoIC, MoNRE, MPI, and LWU?detailing endorsement of the guidelines, including a cascade-based approach to blended financing.*	--	--	1	MOU	DOPF
	f. Number of endorsed landscape investment packages.*	--	2	4	Project website	PMU
	g. Number of institutions with increased capacities to access or manage climate finance.*	--	1	3	Training records	PMU
<i>Output.1.1.1.:</i> Strengthened inter-sectoral planning and investment-prioritization processes at national and sub-national levels for resilient and sustainable rural landscapes.						
<i>Output 1.1.2.:</i> Innovative financial instruments, investment models, and institutional arrangements developed and enabled to mobilize climate finance for resilient and sustainable rural landscapes.						
Component 2: Resilient and sustainable land-use planning and value-chain networks in two provinces of the northern uplands.						
<u>Outcome 2.1.:</u> Integrated, landscape-level planning strengthened using climate-smart practices	a. Number of extension officers (or other pertinent personnel) trained to conduct climate vulnerability assessments.*	--	50 (f: 20%)	80 (f: 20%)	Training records	PMU

Results chain	Indicators[1]	Baseline	Mid-term target	Final target	Means of verification	Responsible for data collection
for resilient and sustainable landscapes in the northern uplands.	b. Number of districts in which participatory climate vulnerability and risk assessments conducted.*	--	3	4	Reports via project website	DTEAP and PMU
	c. Number of agricultural products for which similarity and suitability analyses conducted in targeted provinces.	--	3	5	Project website	DALAM
	d. Number of governmental staff trained in the integration of CCA approaches into local land uses and governance--increase from baseline.*	--	76 (f: 25%)	150 (f: 25%)	Training records	NAFRI
	e. Number of climate-adaptive provincial land-use frameworks generated	--	2	2	Reports	DALAM and PMU
	f. Number of climate-adaptive district land-use frameworks generated	--	4	4	Reports	DALAM and PMU
	g. Number of villages in which P-FALUPAM conducted using suitability analyses and climate forecasts--increase from baseline.	--	50	150	Village-level plans	DALAM
	h. Number of LUP beneficiaries.*	--	21,000 (f: 50%)	63,000 (f: 50%)	PFALUPAM records	DALAM
	<i>Output 2.1.1.:</i> Participatory climate risk and vulnerability assessments conducted for upland livelihoods, incorporating vulnerable ecosystems and agro-ecological suitability at landscape level.					
	<i>Output 2.1.2.:</i> Capacities of local institutions and district-level governmental offices to identify, incentivize, promote, and disseminate climate-smart land-use approaches and practices, and nature-based solutions for resilient and sustainable landscapes strengthened.					

[illegible]

Results chain	Indicators[1]	Baseline	Mid-term target	Final target	Means of verification	Responsible for data collection
Outcome 3.1.: Climate-smart livelihood practices scaled up at landscape level to support resilient and sustainable rural landscapes that improve food security and nutrition.	a. Number of extension staff trained to deliver FFS.*	--	30 (f: 20%)	40 (f: 20%)	Training records	PMU
	b. Number of community members trained in climate-adaptive land uses--increase from baseline.*	--	2,000 (f: 30%)	4,000 (f: 30%)	FFS records	DTEAP & DALAM
	c. Number of people benefitting from more climate-resilient land-use practices?increase from baseline.*	--	2,200 (f: 50%)	22,300 (f: 50%)	Survey of representative sample of targeted villages	DTEAP & DALAM
	d. Number of people benefitting from diversified livelihoods?increase from baseline.*	--	--	14,900 (f: 50%)	Survey of representative sample of targeted villages	DTEAP
	e. Area (ha) agricultural land under climate-smart land-use practices--increase from baseline.[2] *	--	3,200	32,300	Survey of representative sample of targeted villages	DTEAP (coord. w/ FFS)
	f. Area (ha) degraded forest converted to secondary or open forest--increase from baseline.[3] *	--	2,000	40,300	Registered PFALUPAM plans	DALAM
	g. Increase in net income of participating households (average LAK/ year).	--	60,000	600,000	Survey of representative sample of targeted villages	DTEAP
	h. Number of communities with local adaptation plans--increase from baseline.	--	24	240	Adaptation plans and FFS records	DTEAP
	i. Number of local infrastructures improved or installed to increase local climate adaptability.	--	11	44	CRIP records	PMU

[illegible]

[1] * denotes LDCF CCA indicator or component thereof; see Annex B for expanded linkages in the results matrix alongside the budgeted work plan.

[2] See Annex B ?Input Estimates? for calculation.

[3] See Annex B ?Input Estimates? for calculation. Includes (a) land converted from shifting agriculture to production, conservation, or preservation forest and (b) shifting agricultural land transitioned from fallow periods <5 years to fallow periods ?5 years. In the latter case, there is a presumed increase of 20% of such land to secondary or open forest (i.e., in any given year, 20% of such land would have had sufficient time to regenerate to secondary forest, or at least to open forest). Land is considered converted based on LUP designation or practice, though not necessarily yet reflected in forest condition, given the comparatively short duration of the project.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Review Feedback			Agency Response
Reviewer	Comment Location	Comment	
GEF Sec	Additional recommendations to be considered by Agency at the time of CEO endorsement/ approval	The agency is requested to ensure during the PPG phase that there is no duplication of the proposed project with existing or planned initiatives, and also to coordinate with these to create maximum synergistic impact.	The project's preparation has entailed extensive discussions with numerous stakeholders (bilaterally and via workshops) to identify opportunities for synergies and additionality while minimizing redundancy. Please see Stakeholder Engagement Matrix in Annex I2. Please also see prodoc section 1.a.2. regarding the baseline scenario and LDCF additionality.

		<p>Please discuss how the private sector capacity building and investment activities are expected to be sustainable.</p>	<p>'The project's direct investments in the private sector are intended to "prime the pump" rather than to be replicated with steady-state support after the project. Although not all of the project's activities will be sustained, the project's investments will facilitate sustained post-project engagement of the private sector based on market incentives within a conducive policy framework. Under Components 1 and 2, the project will institutionalize vertical and horizontal value-chain coordination, as well as the skills to support those networks. Minimal post-project funding would be needed to maintain such networks, and there will be ample private-sector incentives to do so via private-sector funding.</p> <p>To that end, the project will identify and prioritize demand-driven rather than supply-driven solutions. Therefore, project will focus on removing obstacles to durable private-sector involvement rather than relying on continued long-term public-sector support (supply side). For example, climate-smart land-use practices (Component 3) will be linked to farm-level and local business plans as well as broader value chains (Component 2). The project will conduct value-chain analyses, support commercial development of NTFPs, create model small-scale enterprise business plans for livelihood diversification, etc., thereby creating value-chain opportunities for finance, insurance, equipment suppliers, services, seed provision, value-addition, etc.</p>
		<p>Please discuss KM activities that will enable knowledge exchange with and among the upland communities.</p>	<p>Please see section II.8.</p>
		<p>Please discuss the stakeholder engagement plan, including engagement with communities and indigenous groups (if relevant) as well as women's groups.</p>	<p>Please see Annex I.</p>
		<p>Please provide detailed information on proposed engagement of the private sector, and the sustainability of its engagement.</p>	<p>Please see section II.4.</p>

STAP	Part II	No proper theory of change presented. STAP recommends that one is developed.	Please see ?Theory of Change? at the end of prodoc section 1.a.3.: Alternative Scenario.
	Part II.1. Project Description - 2	Baseline is a feasible basis but no data is provided for quantifying benefits.	Please refer to the project's results framework, which has been integrated into the budget matrices (Annex B). Please see also the LDCF Core Indicator Worksheet in Annex F.
	Part II.1. Project Description ? 3 or 4	<p><i>Is there a recognition of what adaptations may be required during project implementation to respond to changing conditions in pursuit of the targeted outcomes?</i></p> <p>No such concerns are presented. They should be considered and proper fallbacks developed. Tying the specified sequence of actions and events together in a theory of change would also enable this kind of contingency planning.</p>	<p>Please see ProDoc Section 5: Risks. Also, please see the Theory of Change at the end of ProDoc Section 1.a.3: Alternative Scenario.</p> <p>Additionally, please note the TORs and provisional membership for the Project?s Steering Committee (PSC). The PSC is the primary mechanism by which the project?s design ensures appropriate flexibility to achieve the project?s stated impacts. The logframe and Theory of Change help to ensure that the specified activities and budget allocations are viewed as means to ends. The project?s results framework and M&E plan also help ensure that focus is maintained on targeted impacts rather than the daily process of delivery.</p>
	Part II.1. Project Description ? 6: GEBs	Not really; GEB are mostly just indicated. Outputs are supported by mostly regional indicators, but not a single core indicator is specified, let alone quantified.	GEBs are N/A for LDCF. However, please see ProDoc Annex E: GEF CCA Tracking Tool for the LDCF core indicator and metadata worksheet.

	Part II.1. Project Description ? 7: Innov., Sust., & Scaling Up	The project design combines various aspects and levels of climate change adaptation. The introduction of climate smart agricultural techniques and processes counts as innovation in this region but is not in itself innovative. The project team is encouraged to further reflect on ways in improve innovations.	<p>The project incorporates innovative approaches via:</p> <ol style="list-style-type: none"> 1. Direct responsiveness to an existing nationally conducted technological needs assessment (TNA)--an approach to innovation that is mentioned explicitly in STAP's guidance doc on incorporation of innovation: <p>Toth, F., 2019. <i>Innovation and the GEF</i>. Scientific and Technical Advisory Panel to the Global Environment Facility, Washington, DC.</p> <ol style="list-style-type: none"> 2. Information and Communication Technology (ICT), which is also specifically endorsed in STAP's guidance as a means of incorporating innovation--e.g., via expansion of dissemination of and access to products and advances from SAMIS. 3. Community investment funds (Component 3: CRIPs and value-chain investments) that allow targeted villages to decide the most locally appropriate ways to invest for climate resilience (within funding parameters set by the project). 4. Facilitation of inter-community sharing of innovations and lessons learned. 5. Provision of the crop similarity and suitability maps, which are novel in the project's context and potentially transformative for stakeholders (e.g. land users, policy-makers, disaster-risk planners, land-use planners, <i>et al.</i>
	Part II.3. Gender	Improving gender equality is mentioned several times as an objective of the project. Gender risks and opportunities are identified, possible response measures mentioned, but not much information is provided about them.	Please see section II.3.: Gender Equality and Women's Empowerment.

Part II.5. Risks	<p><i>Has the sensitivity to climate change, and its impacts, been assessed?</i></p> <p>Yes, a sensible initial impact assessment is presented, but more would be desirable in the next project development step.</p>	Please see Part II.5. Risks and Annex G: Environmental and Social Risk Certification.
Part II.6. Coordination	<p>STAP invites the project team to further elaborate lessons learnt and how this project fills a gap in other work. Some of the partners (e.g. GIZ) could be included in list of stakeholders and should certainly be invited to participate in project steering group.</p>	<p>Please see ?Lessons Learned? under section II.8.: Knowledge Management.</p> <p>Please see Annex H: Stakeholder Mapping.</p> <p>Please see Annex M regarding the provisional membership of the PSC.</p>
Part II.8. Knowledge Management	<p>One of the deficiencies identified in the diagnosis is missing pathways and instruments for preserving and spreading knowledge. Yet, this PIF does not provide an overall KM plan either. The ideas presented under Point 8 are useful but they are rather poor and need substantial improvement to allow all results and benefits of the project to spread and scale up.</p>	Please see section II.8.: Knowledge Management.

Country Comments: Germany	1.	<p>Request to update co-financing, given that the portfolio of potential co-financing is likely to shift between PIF and operationalization.</p> <p>Request to describe mitigation of risk that anticipated co-financing does not materialize (if not mobilized prior to the project's inception).</p>	<p>Co-financing has been updated.</p> <p>See also section II.5.: Risks.</p>
	2.	Request to specify synergies between baseline/ cofinancing projects and the proposed project.	Please see sections 1.a.2. and 1.a.5.
	3.	Request to expand analysis of the climate vulnerabilities of the targeted areas and strengthen the additionality reasoning.	<p>For climate vulnerabilities, please see section 1.a.1. and Annex L: Site-selection Process.</p> <p>For additionality, please see section 1.a.5.</p>
	4.	Request to increase the specificity of indicators in order to strengthen M&E and enable accountability.	Please see Annex A: Project Results Framework and Annex E: GEF CCA Tracking Tool.

5.	<p>Request to offer greater specificity about "CCA approaches" and supported investments.</p> <p>Request to orient LDCF resources as much as possible toward investments (versus technical assistance), particularly for Components 2 and 3.</p>		<p>Re: "CCA approaches": Please see section 1.a.3. for expanded explanations of the project's various activities and supported practices and technologies to build CCA.</p> <p>Re: budget apportionment: Please see the budgeted activity plan in Annex B for an overview of the apportionment of the project's budget to physical assets versus capacity development.</p> <p>The project takes the view that technical assistance (i.e., capacity development) <i>is</i> a form of investment. The country request is understood as differentiating between investments in "hardware" (e.g., procurement or improvement of physical assets) versus "software" (e.g., development of human and institutional capacities).</p> <p>The project's budget has been apportioned to maximize investments in the acquisition or improvement of physical assets while also ensuring that human and institutional capacities are sufficiently developed to ensure returns from physical assets and broad resilience in the form of adaptive capacities. The full CCA utility of physical assets relies on their effective and adaptive deployment, maintenance, and utility. Moreover, equitable access to physical assets and their benefits depends on effective governance, including the integration of physical investments into strategic plans.</p> <p>During the project's design phase, consultations with governmental, non-governmental, and community stakeholders repeatedly reiterated the need for capacity development/ TA <i>per se</i> and in support of physical investments. These admonitions were underscored by visits to physical investments from prior initiatives that were now defunct, dilapidated, or privately captured due to a lack of commensurate capacity development. This issue was also reflected in the interviews and desk review for "lessons learned".</p> <p>Therefore, particularly in Components 2 and 3, the project's investments in physical assets have been prioritized, with funding as needed for supportive enabling environment (e.g., planning), capacity development, and governance. Further reductions in these forms of TA/ CD are likely to lead to stranded, captured, or under-utilized assets. Moreover, the project places substantial value on the adaptive capacities of local communities, independent of their physical assets.</p>
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ANNEX C: Status of Utilization of Project Preparation Grant (PPG).
(Provide detailed funding amount of the PPG activities financing status
in the table below:

PPG Grant Approved at PIF: USD 150,000			
<i>Project Preparation Activities Implemented</i>	<i>GETF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent Todate</i>	<i>Amount Committed</i>
Salaries 5011	7,500.00	0	0
Consultants 5013	78,500.00	62,229.22	18,878.61
Contracts 5014	23,000.00	0	0
Travel 5021	27,500.00	15,751.79	294.99
Trainings 5023	11,000.00	11,021.15	0
GOE 5028	2,500.00	1,379.00	0
Total	150,000.00	90,381.16	19,173.60

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

Figure 21: Districts of Luang Prabang and Houaphan



Table 10: Districts and District Codes

Luang Prabang		Houaphan	
District	Code	District	Code
Luang Prabang	601	Xamneua	701
Xieng Ngeun	602	Xiengkhor	702
Nan	603	Hiem	703
Park Ou	604	Viengxay	704

Nambak	605	Huameuang	705
Ngoi (Ngoy)	606	Xiamtay	706
Pak Xeng	607	Sopbao	707
Phonxay	608	Et	708
Chomphet	609	Kouan	709
Viengkham	610	Xon (Sone)	710
Phoukhoun	611		
Phonthong	612		

Table 11: Provisionally Selected Target Districts

Provisionally Selected Target Districts			
Luang Prabang		Houaphan	
District	Code	District	Code
Viengkham	610	Xiengkhor	702
Phonthong	612	Kouan	709

ANNEX E: Project Budget Table

Please attach a project budget table.

Budget for GCPLAO027/LDF "Climate Smart Agriculture Alternatives for Upland Production Systems in Lao PDR"	BUDGET (USD)										
	Unit	Qty	Unit Cost	Outcome 1.1	Outcome 2.1	Outcome 2.2	Outcome 3.1	Outcome 4.1	PMC	M&E	Total OEF
5300 & 5500 Salaries											
5570 Consultants											
International Consultants											
1 Chief Technical Advisor (CSA Specialist) part time	day	200	600	18000	26000	27600	27600	20800	0		120000
1 Land-use Planning Policy Specialist	day	92	450		41400						41400
1 Agricultural Value-chain Specialist	day	92	450			24800	16600				41400
Sub-total - International Consultants				0	0	0	0	0	0	0	0
National Consultants											
1 National Project Coordinator	day	1200	140	28000	28000	26000	28840	26202	30958	0	168000
1 Land-use Planning Policy Specialist	day	600	100		60000						60000
1 Agrometeorologist	day	93	100	500	500	500	900	6900			9300
1 Gender and socioeconomic expert	day	600	75	7000	15000	9000	7000	7000			45000
1 M&E Expert	day	450	60							27000	27000
1 Knowledge Management and Communications Specialist	day	600	60					36000			36000
Administration and Finance Officer Associate	Day	400	60						24000		24000
Sub-total - National Consultants				0	0	0	0	0		0	0
5570 Sub-total - Consultants				53500	170900	87900	80940	96902	54958	27000	572100
5650 LOAs and Contracts											
National execution (5573) - DALAM	sum	1	60000	24000	36000	0	0	0	0		60000
National execution (5573) - LP-PAFO	sum	1	30000	0	30000	0	0	0	0		30000
National execution (5573) - LP-PALAM	sum	1	20000	0	20000	0	0	0	0		20000
National execution (5573) - LP-DAFO1	sum	1	104000	0	104000	0	0	0	0		104000
National execution (5573) - LP-DAFO2	sum	1	104000	0	104000	0	0	0	0		104000
National execution (5573) - HP-PAFO	sum	1	30000	0	30000	0	0	0	0		30000
National execution (5573) - HP-PALAM	sum	1	20000	0	20000	0	0	0	0		20000
National execution (5573) - HP-DAFO1	sum	1	104000	0	104000	0	0	0	0		104000
National execution (5573) - HP-DAFO2	sum	1	104000	0	104000	0	0	0	0		104000
National execution (5573) - DTEAP	sum	1	414000	0	65000	54000	295000	0	0		414000
National execution (5573) - NAFRI	sum	1	200000	0	126000	0	74000	0	0		200000
National execution (5573) - DMH	sum	1	27000	0	0	0	0	27000	0		27000
National execution (5573) - DoPF	sum	1	25000	25000	0	0	0	0	0		25000
National execution (5573) - DSMEP	sum	1	5000	0	0	5000	0	0	0		5000
National execution (5573) - TPPD	sum	1	55000	0	0	55000	0	0	0		55000
Audits	sum	5	7000	0	0	0	0	0	35000		35000
Spot checks	sum	10	2925	0	0	0	0	0	29250		29250
LOAs - NGO(s)	sum	1	384267	95737	84530	204000	0	0	0		384267
Piloting of value-chain investment packages (2.2.3) - PMU	sum	1	178000			178000			0		178000
GRIPs (incl. concessional local wage labor) (3.1.1) - PMU	sum	1	330000				330000		0		330000
Funding of value-chain investment packages (excl. staffing costs) (3.1.2) - PMU	sum	1	150000				150000		0		150000
Land preparation, fencing, etc. for AWS (4.1.1) - PMU	#	3	2500					7500	0		7500
Upgrade agrometeorological database to integrate new AWSs (4.1.1) - PMU	sum	1	10000					10000	0		10000
Inception workshops (1 national and 2 provincial) - PMU	sum	1	20000					0	20000		20000
Mid-term workshops (1 national and 2 provincial) - PMU	sum	1	20000					0	20000		20000
Final workshops (1 national and 2 provincial) - PMU	sum	1	20000					0	20000		20000
Mid-term evaluation (5116)	sum	1	40000					0	40000		40000
Final evaluation (5116)	sum	1	60000					0	60000		60000
Processing of final report	sum	1	6550					0	6550		6550

5650 Sub-total - LOAs and Contracts				144737	827530	496000	849000	44500	64250	166550	2592567
5900 Travel											0
International travel	sum	1	37600	5640	8272	8648	8648	6392	0		37600
Domestic travel	sum	1	67200	10080	14784	15456	15456	11424	0		67200
5900 Sub-total - Travel				15720	23056	24104	24104	17816	0	0	104800
5920 Training											0
									0		0
5920 Sub-total - Training				0	0	0	0	0	0	0	0
6000 Expendable Procurement											0
Tools and materials for piloting value-chain investment packages (2.2.3.)	sum	1	55000			55000			0		55000
Procurement for communication plan (4.1.2.2.)	sum	1	15000	3000	3000	3000	3000	3000	0		15000
6000 Sub-total - Expendable Procurement				3000	3000	58000	3000	3000	0	0	70000
6100 Non-expendable Procurement											0
Agrometeorological weather stations, including at least 2 missions for installation support (4.1.1.)	#	3	18500					55500	0		55500
Communication networks to connect AWS local stations (broadband/high-speed data) (4.1.1.)	#	3	2000					6000	0		6000
Mowers to maintain AWS sites (4.1.1.)	#	6	135					810	0		810
Furniture and common equipment for project offices (PMU, 2 PAFOs, 4 DAFOs)	sum	1	7000	0	0	0	0	0	7000	0	7000
Electronic equipment (e.g., laptops, power, surge protection, IT security, etc.)	sum	1	16000						16000		16000
Motorbikes + accessories: equip. racks/boxes/saddle bags, & safety equip. (e.g., helmets)	#	4	6500	3900	5720	5980	5980	4420	0		26000
6100 Sub-total - Non-expendable Procurement				3900	5720	5980	5980	66730	23000	0	111310
6150 Technical Support Services											0
				0	0	0	0	0	0	0	0
6150 Sub-total, Technical Support Services				0	0	0	0	0	0	0	0
6300 General Operating Expenses (GOE: ≤ 5%)											0
Maintenance and operating costs for motorbikes	#	4	2000	1600	1600	1600	1600	1600			8000
Communication	mo.	60	150	1800	1800	1800	1800	1800			9000
Utilities	mo.	60	400	0	0	0	0	0	24000		24000
Stationery and Consumables	sum	1	3191	638	573	780	600	600	0		3191
Vehicle rental (incl. cars, boats, drivers, fuel, related operating costs, etc.)	day	80	100	1600	1600	1600	1600	1600			8000
6300 Sub-total - GOE				5638	5573	5780	5600	5600	24000	0	52191
TOTAL				226495	1035778	677764	968624	234548	166208	193550	3502968

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencys is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).

