GEF-8 PROJECT IDENTIFICATION FORM (PIF)

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General Project Information

Project Title	
Promoting climate-resilience through ecosystem-based adaptation (EbA) solutions in the Northern Lao PDR	
Region Lao PDR	GEF Project ID 11695
Country(ies) Lao PDR	Type of Project FSP
GEF Agency(ies): UNDP	GEF Agency ID 9814
Executing Partner Ministry of Natural Resources and Environment (MoNRE)	Executing Partner Type Government
GEF Focal Area (s) Climate Change	Submission Date 9/17/2024
Project Sector (CCM Only) Climate Change Adaptation Sector	

Taxonomy

Focal Areas, Land Degradation, Sustainable Land Management, Sustainable Agriculture, Sustainable Forest, Biodiversity, Mainstreaming, Agriculture and agrobiodiversity, Financial and Accounting, Conservation Finance, Protected Areas and Landscapes, Productive Landscapes, Community Based Natural Resource Mngt, Climate Change, Paris Agreement, United Nations Framework Convention on Climate Change, Nationally Determined Contribution, Climate Change Adaptation, Private sector, Innovation, Least Developed Countries, Climate information, Livelihoods, Community-based adaptation, Ecosystem-based Adaptation, Climate resilience, Mainstreaming adaptation, Agriculture, Forestry, and Other Land Use, Climate Change Mitigation, Influencing models, Deploy innovative financial instruments, Transform policy and regulatory environments, Strengthen institutional capacity and decision-making, Demonstrate innovative approache, Convene multi-stakeholder alliances, Stakeholders, Type of Engagement, Partnership, Participation, Information Dissemination, Consultation, Civil Society, Non-Governmental Organization, Community Based Organization, Academia, Indigenous Peoples, Communications, Education, Awareness Raising, Behavior change, Public Campaigns, Beneficiaries, Private Sector, SMEs, Local Communities, Gender Equality, Gender results areas, Access and control over natural resources, Access to benefits and services, Capacity Development, Knowledge Generation and Exchange, Participation and leadership, Gender Mainstreaming, Sex-disaggregated indicators, Women groups, Capacity, Knowledge and Research, Knowledge Generation, Learning, Indicators to measure change, Adaptive management, Theory of change

Type of Trust Fund	Project Duration (Months)
LDCF	60
GEF Project Grant: (a) 6,192,694.00	GEF Project Non-Grant: (b) 0.00
Agency Fee(s) Grant: (c)	Agency Fee(s) Non-Grant (d)

588,306.00	0.00
Total GEF Financing: (a+b+c+d) 6,781,000.00	Total Co-financing 26,300,000.00
PPG Amount: (e) 200,000.00	PPG Agency Fee(s): (f) 19,000.00
PPG total amount: (e+f) 219,000.00	Total GEF Resources: (a+b+c+d+e+f) 7,000,000.00
Project Tags CBIT: No NGI: No SGP: No Innovation: Yes	

Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. The explanation and justification of the project should be in section B "project description".(max. 250 words, approximately 1/2 page)

Lao PDR is highly vulnerable to climate change due to frequent climate-induced hazards, coupled with low adaptive capacity attributed to poverty, and the high exposure of marginalized communities to these climate-induced hazards. Floods, droughts and storms are the three most frequent climate-induced hazards, impacting millions of people and resulting in high levels of economic losses. The Public EMDAT data from the past 30 years indicate that floods have impacted a total of 194,000 people, with the highest reported loss reaching USD 61 million. In comparison, according to EMDAT, droughts and storms have affected 1.5 million people, with total losses amounting to USD 302 million. Over the past 30 years, the average annual temperature and precipitation have increased, leading to altered rainfall patterns. The country's vulnerability, ranking 142 out of 181 on the ND-GAIN index, is heightened by its location along the Mekong River, where over 50% of the population lives in flood-prone areas. The agricultural sector, reliant on mainly on rain-fed crops (80-85% according to the FAO Statistics[1][1]), faces threats to food security and livelihoods. Environmental degradation through deforestation and unsustainable land use, and limited capacity for ecosystem-based adaptation (EbA), all further exacerbate risks associated with high temperatures (human health, soil quality), intense rainfall (increased runoff and soil erosion) and drought (poor soil water retention and high runoff). In the future (by 2050), Laos' climate change will exacerbate these risks. According to the country's Third National Communication on Climate Change (2024) report, the average maximum temperature is expected to rise by 0.98°C to 1.35°C under the RCP 4.5 scenario between 2021-2050, with greater increases in the northern regions than in the south. Under the RCP 8.5 scenario, the increase is projected to be between 1.2°C and 1.6°C, with the highest rise occurring in Phongsaly province in the northern part of the country, for the same period. Furthermore, MoNRE's 2016 report[2][2] projects that, under the RCP 4.5 scenario (2021–2050), dry season rainfall (January to May) will be low, under 500 mm, while rainy season rainfall (June to September) will exceed 1,000 mm. However, under the RCP 8.5 scenario, annual rainfall in seven northern provinces, including Phongsaly and Oudomxay, is expected to

drop below 1,500 mm. These climate change projections highlight increased risks of climate-induced hazards, underscoring the urgent need for Laos to invest in resilience-building initiatives and ecosystem-based adaptation as part of nature-based solutions to protect ecosystems and communities.

Considering the climate challenges Laos faces, EbA is needed because it leverages the natural capacity of ecosystems to provide essential services such as flood regulation, water purification, and soil stabilization, all of which directly contribute to reducing climate risks. Without integrating EbA, adaptation strategies risk overlooking the long-term resilience benefits that nature-based solutions offer. Recognizing this, the Government of Laos (GoL) has formulated adaptation strategies as outlined in the country's climate change documents, including the National Strategy on Climate Change of Lao PDR 2024 and enhanced NDC (2020). However, limited resources hinder large-scale adaptation efforts, including EbA implementation at the local level. Public funding is only sufficient to support small-scale resilient infrastructure and good agriculture practices, falling short of what's needed to ensure effective nationwide adaptation actions. This financial gap underscores the necessity for a coordinated, inter-sectoral approach involving all stakeholders, including the private sector and CSOs, with a strong need for the inclusion of the Indigenous People and local communities (IPLCs). Further to the resource gap, implementing local adaptation plans at the sub-national level faces two significant challenges: (1) limited institutional and technical capacity to apply and finance sustainable climate adaptation solutions and (2) lack of integration of EbA at the local level to enhance resilience, due to a lack of awareness, insufficient institutional coordination, and limited technical expertise at the local level.

This project is designed to address these gaps and offer strategies to counter challenges to pursue enhanced adaptation governance and implementation. Its interventions will be implementated at the national level as well as in the three target provinces in the Northern Highlands (Oudomxay, Phongsaly, Xieng Khuang) and three target landscapes (Boun Neua District of Phongsaly Province, Lah District of Oudomxay Province, and Pha Xai District of Xieng Khuang Province). The project will strengthen climate adaptation in Laos through three interconnected components, focusing on climate resilient governance, localized EbA applications, and knowledge management:

- First, the project will strengthen national and provincial governance mechanisms by developing a national EbA tool to improve decision-making and implementation capacities for EbA solutions. This will include adopting new regulations to foster the integration of EbA into provincial development plans, and enhancing the skills of national and sub-national government personnel to apply the tool to desiging EbA solutions. Additionally, the project will facilitate the adoption of EbA plans equipped with financial roadmaps in the three target provinces, ultimately benefiting over 800,000 people.
- Second, the project focuses on advancing EbA solutions in northern Laos, where 5,000 hectares of watershed areas will be brought under restoration (through passive restoration[3][3]) and rehabilitation (through agroforestry-based afforestation), involving 2,500 conservation households. This effort will allow regeneration of the ecosystems in the long term, which in turns, enhance local resilience to climate hazards (particularly floods and drought) and improve financial stability through sustainable market linkages and community enterprise development.

- Lastly, the project emphasizes knowledge management, gender, and social inclusion by increasing public awareness, information sharing and lessons exchanges of EbA solutions. The project will produce knowledge products, hold learning workshops, and establish a project-level monitoring and evaluation (M&E) system to ensure effective project implementation, monitoring of project impacts, and sustainability.

Together, these components aim to drive systemic change, enhance environmental resilience, and improve community livelihoods while fostering gender equality and social inclusion.

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[1] Food and Agriculture Organization of the United Nations. 'Statistics.' *FAO.org*, 2024

[2] MoNRE. 2016. Report on the Historical Climate Change, Climate Vulnerability and Climate Change Projection for Lao PDR. The Department of Disaster Management and Climate Change, MoNRE.

[3] E.g. through designation of areas for *passive or natural restoration,* it will allow ecosystems to recover on their own without direct human intervention. In this case, the project will target areas where disturbances are minimal, allowing natural processes to re-establish biodiversity and ecosystem functions over time.

Indicative Project Overview

Project Objective

Enhancing resilience and sustainable livelihoods in the watershed areas of the Northern Lao PDR (Nam Phark river basin, Nam Ou river basin, Nam Kor Catchment and Ngeum River) through acceleration of the integration of ecosystem-based adaptation (EbA) solutions at the national and subnational levels

Project Components

1. Enhancing climate adaptation governance to integrate NbA/EbA solutions

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing ($)	Co-financing ($)
1,474,451.00	6,246,250.00

Outcome:

Outcome 1. Strengthened national and provincial governance mechanisms, leading to improved coordination, planning and implementation capacities to integrate ecosystem-based solutions for climate adaptation.

Indicators:

(a) One national EbA tool/application in operation, leading to improved decision-making processes, programming and implementation of EbA solutions at the national and local levels.

(b) Adoption of three provincial regulations/policies by the provincial governments promotes integration of EbA solutions into government programs/planning documents.

(c) Adoption of three EbA plans (which include financing roadmaps for the implementation) in the target provinces enhances local resilience, strengthening resilience of at least 800,000 indirect beneficiaries.

(d) Improved capacity of at least 100 government personnel (30% are women) from relevant national and sub-national gov institutions, as measured by increased in capacity score (baseline and target TBD at PPG)[1][4] to enhance government's capacity to operationalize the EbA tool and develop EbA plans/financing roadmaps.

[1] Measured using UNDP CAPACITY ASSESSMENT SCORECARD

Output:

Output 1.1. National level remote-sensing-based tool/application developed for assessing close to real-time climate risks and vulnerabilities to design comprehensive local EbA solutions.
Output 1.2. Provincial regulations / policies directing the integration of EbA approaches in government programs / planning documents.
Output 1.3. Comprehensive GESI-responsive /EbA plans for the target provinces (considering future climate risks and vulnerability[1][5]), with adaptation finance roadmaps and investment plans included.
Output 1.4. Capacity training for key government officials at the national and sub-national levels on the utilization of EbA tool (Output 1.1.) and development of EbA plans (Output 1.3).

[1] Utilizing data generated by the EbA Tool (Output 1.1) and information from other relevant sources.

2. Advancing EbA application and financing at the local level

Component Type	Trust Fund
Investment	LDCF
GEF Project Financing ($)	**Co-financing ($)**
3,243,792.00	13,741,750.00

Outcome:

Outcome 2. More effective, coordinated and integrated implementation and financing of ecosystem-based adaptation solutions in the northern Laos watershed landscapes, strengthening community resilience and livelihoods.

Indicators:

(a) At least 5,000 ha of critical watershed areas brought under restoration (through passive/natural restoration) and rehabilitation (through agroforestry-based afforestation)[1][6] by 2,500 conservation households (at least 50% are of the ethnic minority households), directly benefiting at least 12,500 individuals (of which 50% are women) through application of EbA approaches in the target districts, strengthening local resilience to climate hazards.

(**b)** At least US$ 200,000 sustainable financing is mobilized to support the implementation of EbA for the conservation households.

(c) 20% increase in the income against baseline (to be estimated at PPG) of the conservation households through enhanced market linkages, climate smart agriculture/agroforest practices, and community enterprises, leading to improved financial resilience of the target communities.

[1] The proportion of hectares to be brought under restoration and rehabilitation will be determined at PPG.

Output:

Output 2.1. Support for ‘conservation communities’ to implement GESI-responsive integrated EbA solutions (agroforest-oriented watershed restoration and rehabilitation) in the target districts.

Output 2.2. Sustainable financing schemes (from private CSR fund, blended, REDD+, etc.) leveraged for the target ‘conservation communities’ to implement EbA solutions (in relation to Output 2.1).

Output 2.3. Assessment reports on potential market linkages built upon value chain analysis for community’s sustainable agroforest and/or NTFP products (in relations to Outputs 2.1 and 2.2.).

Output 2.4. GESI-responsive community-based enterprises established to strengthen conservation communities’ livelihoods, including provision of climate-smart agriculture/agroforestry practices training (in relation to Output 2.3).

Output 2.5. GESI- responsive community -based natural resource monitoring.

3. Knowledge Management, gender and social inclusion

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing ($)	Co-financing ($)
943,649.00	3,997,600.00

Outcome:

Outcome 3: Increased public awareness/understanding and knowledge of EbA solutions, financing and implementation through effective lessons documentation and sharing at both national and sub-national levels.

Indicators:
(a) Enhanced public awareness as measured by increased in KAP score (baseline and target TBD at PPG) of EbA design/financing/application among stakeholders through development and dissemination of at least ten GESI-oriented knowledge/communication products and three peer-to-peer learning workshops (community of practice).

Output:

Output 3.1. GESI-responsive stakeholder engagement, communication and outreach strategies, tailored to specific entities.

Output 3.2. GESI-focused knowledge products and communication materials, conferences, and events at national and sub-national levels to disseminate the project’s best practices and lessons learned.

M&E

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing ($)	Co-financing ($)
235,912.00	999,400.00

Outcome:

(b) Project-level monitoring and evaluation procedures established, facilitating systemic and adaptive project management, implementation-monitoring, and sustainability.

(c) Social and Environmental risks are monitored and responded periodically and systematically through project-level Grievance Redress Mechanism and effective implementation of Environmental and Social Management Plan (ESMP), the required environmental and social assessment(s), Indigenous People Plan, Livelihood Assessment Plan, GESI Analysis & Action Plan, and Stakeholder Analysis & Action Plan.

Output:

Output 3.3. Project-level M&E mechanism enables effective project management and monitoring, and delivery of project impacts and sustainability.

Output 3.4. Effective application of the Environmental and Social Management Safeguard procedures to facilitate inclusive and gender-responsive participation of Indigenous Peoples and Local Communities (IPLCs).

Component Balances

Project Components	GEF Project Financing ($)	Co-financing ($)
1. Enhancing climate adaptation governance to integrate NbA/EbA solutions	1,474,451.00	6,246,250.00
2. Advancing EbA application and financing at the local level	3,243,792.00	13,741,750.00
3. Knowledge Management, gender and social inclusion	943,649.00	3,997,600.00
M&E	235,912.00	999,400.00
Subtotal	**5,897,804.00**	**24,985,000.00**
Project Management Cost	294,890.00	1,315,000.00
Total Project Cost ($)	**6,192,694.00**	**26,300,000.00**

Please provide justification

PROJECT OUTLINE

A. PROJECT RATIONALE

Briefly describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

A. Project Rationale

The Lao People's Democratic Republic (Lao PDR) or Laos is a landlocked country in Southeast Asia, situated in Central Indochina between latitudes 13º 54'-22º 30' North and longitudes 100º 05'-107º 59' East. It shares borders with Vietnam to the east, Thailand to the west, Cambodia to the south, and Myanmar and China to the north. Covering a total land area of approximately 236,800 km², Lao PDR's landscape is predominantly mountainous, with elevations ranging from 80 meters above sea level in the south to 2,820 meters at Phou Bia Mountain in Xiengkhuang Province in the far northeast. Around 20% of the country consists of floodplains along the Mekong River, which enters from China in the northwest, flows eastward to Luang Prabang Province, and then southward along the borders with Thailand, Vietnam, and Cambodia.[1][7] The country experiences a tropical to sub-tropical climate, heavily influenced by the monsoon, resulting in distinct wet and dry seasons. The rainy season, dominated by southwest winds, usually lasts from May to September, while the dry season extends from October to April, characterized by northeast winds. Annual rainfall varies significantly, ranging from 1,000 mm in the north to 3,000 mm in the south, with daily temperatures fluctuating from 10º C in January to 38º C in July.[2][8] The northern regions tend to be cooler than the southern lowlands, where the climate is classified as tropical, while higher elevations and mountainous areas are considered sub-tropical.

Laos have been experiencing rapid economic growth, with a pre-COVID-19 GDP of around $18 billion, growing at 6% annually, driven by investments in agriculture, forestry, hydropower, and mining.[3][9]

Despite reducing poverty from 46% (2007-2008) to 18.3% (2018-2019)[4][10], about 75% of the population still depends on the informal sector, with only 16.6% of formally employed people covered by social protection schemes.[5][11] Agriculture is the main livelihood for 70-80% of Laotians, contributing about 30% of GDP, even though only 4% of land is arable.[6][12] Forests provide vital Non-Timber Forest Products (NTFPs) that significantly support rural and ethnic communities, particularly the poorest households, who rely on NTFPs for 90% of their income.[7][13] However, expanding agriculture and resource extraction are increasing pressure on ecosystems, leading to deforestation and degradation. Furthermore, Laos is highly vulnerable to climate change, with its reliance on agriculture and natural resources making it susceptible to extreme weather events like floods and droughts. Environmental degradation from unsustainable practices exacerbates this vulnerability, particularly for rural and ethnic communities who depend on NTFPs and lack economic safety nets.

The climate and environmental challenges are especially prominent in the Northern Highlands of Laos, including the three target provinces of this LDCF project: Oudamxay, Phongsaly, and Xiengkhuang provinces, shown in Figure 1 below: (more detail information about the target geography is provided in "A*nnex C: PROJECT LOCATIONS*")

- **Oudomxay Province: Oudomxay, located in northern Laos, is a mountainous province where agriculture is the dominant**

livelihood. The region's topography and rural nature mean that communities here are particularly vulnerable to the impacts of climate change, such as landslides and soil erosion, which can devastate crops and infrastructure. The province has a mixed demographic composition, with various ethnic groups, including the Khmu and Hmong, each with their own traditional agricultural practices.

- Phongsaly Province: Phongsaly, the northernmost province of Laos, is one of the most remote and underdeveloped areas in the country. The province is characterized by its rugged terrain and dense forests. The economy is primarily based on subsistence agriculture, with tea cultivation being a significant activity in some areas. Due to its isolation, Phongsaly's infrastructure is less developed, making it more difficult for communities to access markets and essential services. The population is ethnically diverse, with significant numbers of ethnic minorities, including the Akha, who are especially vulnerable to the effects of climate change due to their reliance on natural resources and traditional farming practices.
- Xiengkhuang Province: Xiengkhuang, situated in the northeast, is known for its plateau landscape and cooler climate. The province has a history of being heavily impacted by unexploded ordnance (UXO), a remnant of past conflicts, which continues to hinder agricultural expansion and infrastructure development. Despite this, agriculture remains a primary livelihood source, with rice and livestock farming being prevalent. The population is diverse, including the Lao, Hmong, and other ethnic minorities, who face unique socio-economic challenges, exacerbated by climate variability.

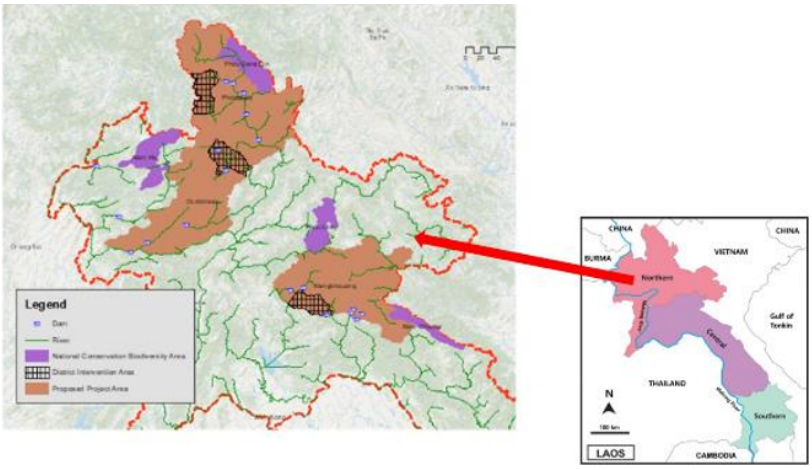

Figure 1. Locality map highlighting the project's target geography in the Northern Laos

The next section will provide a more detailed analysis of the climate change and vulnerability in Laos, including the target provinces of this project.

A.1 Country Climate Change Context

Laos is among countries most vulnerable to projected climate change trends because its population faces significant climate-related hazards exacerbated by poverty, malnutrition, and high exposure of poor and marginalized communities to hazards. Among the highly vulnerable regions in Laos is the Northern Highlands of the country.

The Earthmap (2024)[8][14] recorded that climate in Laos, based on regression analysis, shows significant changes, with the average annual temperature increasing at a rate of approximately 0.076°C/year over the past 30 years, with maximum and minimum temperatures rising by 0.091°C/year and 0.056°C/year respectively from 1994 to 2024. Meanwhile, during the same period, rainfall

increased by around 5.87 mm/year, although the number of rainy days decreased by more than 30% over the last 10 years[9][15]. According to the government report[10][16], the total number of rainy days with over 2.5 cm of rainfall per day were as follows: 139 days between 1976–1985, 101 days between 1985–1995, and 100 days between 1995–2005. Similarly, the total number of rainy days with over 5 cm of rainfall per day were: 15 days between 1976–1985, 16 days between 1985–1995, and only 3 days between 1995–2005.

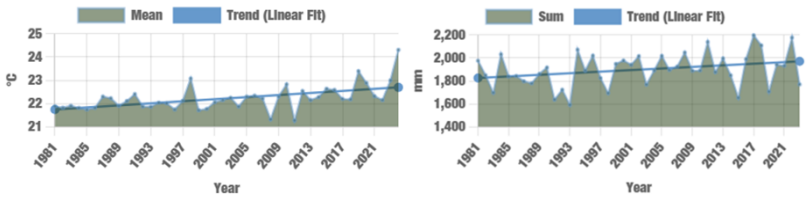

Figure 2. The average annual temperature[11][17] and rainfall[12][18] in Lao PDR from 1981-2023

Specifically, the most noticeable impacts of climate change include shifts in rainfall patterns, seasonal changes, and increased intensity of rainfall affecting surface water flow, causing landslides, and increased intensity of floods, storms, and droughts. Precipitation has shown an increasing trend, rising from 1,825.4mm per year in 1982 to an estimated 1,970.5 mm per year in 2023 (linear estimate), as illustrated in Figure 2. High rainfall occurs in central and southern regions, with annual and seasonal rainfall reaching 2,600 mm and 2,400 mm respectively. Conversely, other areas such as Oudomxay and Phongsaly experience drought or rainfall deficits. These changes

indicate that local communities nationwide face various climate hazards—especially floods and droughts.

Furthermore, according to the government report[13][19], the onset of the rainy season, which normally occurred in early May before the year 2000, has shifted to June after 2000. Over the past 42 years, the delay in the onset of rain has ranged between 0 and 5.67 days per year in the southern and northeastern regions, while other regions have experienced an earlier onset of rain by 5.67 to 11.33 days per year.[14][20] In northern Laos, rainfall typically starts between March 21 and April 5, with progressively later rainfalls observed as one moves southward. Similarly, the end of the rainy season occurs from late August to mid-September in the north and extends to October 30 in the southern regions. The change in pattern is also seen in the length growth period (LGP)[15][21]; during the same period (the last 42 years), changes in LGP are as follows: (i) the central region has seen an increase of 0 to 17 days per year; (ii) in the southwest, the LGP has decreased by 0 to 5.67 days per year; and (iii) in the northern region, it has decreased by 0 to 11.33 days per year, despite having a longer overall LGP.[16][22]

Climate hazards such as storms, floods, and droughts have increasingly occurred in Laos with growing frequency, magnitude, and impact[17][23]. Additionally, heatwaves are expected to become serious future

hazards as temperatures rise. Floods are the most frequent type of disaster. EM-DAT (2024)[18][24] data shows that floods are the most common natural disaster in Lao PDR, occurring almost annually, considering the geographical location downstream of the Mekong River (56.78% - 21 events over 30 years), affecting a total of 194,000 people with the largest total loss reaching USD 61 million. Droughts and storms are also potential major disasters, with 1.5 million people affected by these events, 226,000 people impacted, and total losses reaching USD 302 million.[19][25] In terms of casualties, a total of 56 lives were lost during these events, with more than half caused by floods.[20][26] This large impact is significant as more than 50% of Lao PDR's population lives in lowland and floodplain areas along the Mekong River and its main tributaries. Furthermore, the assessment of 189 villages in 8 districts showed that the climate vulnerability level in Laos, as reported by UN Habitat (2021)[21][27], indicates that drought is the main disaster affecting at least 25% of the population, followed by floods (20%), impacting 2.85 million people in nearly 4,000 villages nationwide. High vulnerability areas are mainly in the North.[22][28] These disasters have severely impacted local livelihoods and environment through droughts and floods that lead to crop failure or damage, reducing harvest yields and resulting in income loss for farmers, as agriculture is the primary livelihood for many communities.[23][29] Additionally, floods pose public health risks, often causing outbreaks of diseases like diarrhea.[24][30] In ecosystems, flash floods result in

biodiversity loss, including forest destruction, especially when accompanied by landslides.[25][31]

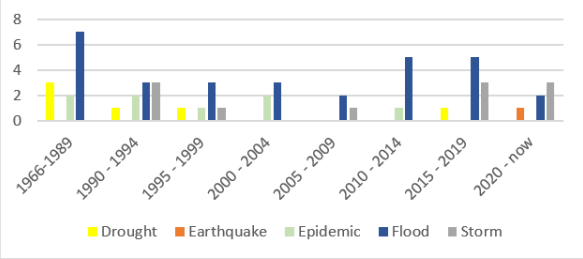

Figure 3. The Disaster Events in Laos PDR, EM-DAT (2024)

In terms of resilience, resilience levels vary across the country, with the central region of Laos predominantly ranked as having the lowest resilience. The northern region – where the project's geography is located – tends to have moderate to low resilience. This situation is due to several factors: (1) its isolation with limited accessibility; (2) the predominance of single-source livelihoods, primarily farming; and (3) low levels of education.[26][32] In terms of crops, rice is the most affected crop by climate change, especially the majority of rice fields in Laos rely on rain-fed agriculture, meaning harvest yields are determined by rainfall.[27][33] According to the TNC 2024 report[28][34], the impact of climate change on temperature and rainfall patterns could reduce local rice yields by approximately 5–20%. These conditions leave the population particularly vulnerable when disasters strike, leading to significant impacts such as the loss of household livelihoods due to the destruction of rice fields, crop failures, loss of farming equipment, and the devastation of roads, buildings, and homes. For example, following

Typhoon Haima in 2011 and the floods of 2018, it was estimated that 14.2% of the population in Laos faced food insecurity related to the disasters, and 70% of households had to take on additional debt to secure their agricultural production.[29][35] Furthermore, according to a report by the World Bank, the 2018 floods caused by heavy rains from two tropical cyclones resulted in damages estimated at USD 371.5 million, which accounted for about 2.1% of the country's GDP that year.[30][36] The floods also displaced over 600,000 people and caused extensive damage to farms, infrastructure, and housing, further resulting in recovery costs of around USD 520 million.[31][37] Similarly, in 2020, tropical storms caused an additional USD 100 million in damages, further underscoring the growing toll of climate-induced disasters on Laos' economy.[32][38]

Furthermore, Laos' low resilience is accompanied by a high level of vulnerability and a limited capacity to implement adaptation solutions. Based on the ND-GAIN index, composed of a vulnerability score and a readiness score, Laos ranks 121 out of 185 countries with vulnerability score of 0.460 and readiness score of 0.336 (117 in terms of 'vulnerability' and 136 in terms of 'readiness' – the country's ability to mobilize investments for adaptation actions)[33][39]. The high vulnerability score and low readiness score signify the country's low adaptative capacity, and is lacking the ability to leverage investments and innovations to implement adaptation actions. Similarly, the 2019's

INFORM Risk Index[34][40] – a composite index measuring hazard and exposure, vulnerability and coping capacity – ranks Laos 69th out of 191 countries. This score reflects the relatively high hazard exposure and vulnerability, alongside a lack of capacity to cope with climate hazards. As previously mentioned, floods are among the most frequent hazards in Laos. The INFORM Risk Index ranks Laos the 6th in terms of flood exposure, which signifies that this country has a high level of exposure to flood disasters, ranking 6th out of 191 countries, based on the total average population affected by floods annually.[35][41] And although drought exposure is low, it must be monitored as hydropower development on the Mekong River significantly alters the region's hydrology. Generally, the highest vulnerabilities occur in the agricultural sector (particularly cereal crops) and the medical sector. At the same time, Laos's readiness to leverage adaptation investments is generally supported by relatively accountable governance, a significantly improving education sector, and innovation (e.g., R&D patents). This indicates that the country has the appropriate enabling conditions to build resilience to climate change.

Climate change context of the project landscape: **The Lower Mekong Basin (LMB) is a vast area where Laos faces severe impacts from climate change. In July 2019, water levels in the Mekong River hit record lows, with flow reduced by 70%-75% compared to 2018, affecting over 68 million people across four countries. This situation was caused by a combination of prolonged drought and dam operations. Reduced rainfall due to climate change exacerbated the situation, while large upstream dams in China (e.g., Xiaowan,**

Nuozhadu) and Laos restricted natural wet-season flow to store water for hydropower, further reducing downstream water levels.[36][42],[37][43] Furthermore, irregular flooding has led to a 60% decline in fish catch, reduced agricultural output in 200,000 hectares of rice fields, and negatively impacted communities, particularly in the service sector which is 10% of Laos PDR's GDP. The Northern Highlands in Lao PDR is crucial for maintaining the Mekong River's water volume. This is also the reason why the GoL prioritizes enhancing resilience in these vulnerable regions, which include investment to protect and improve the management of important conservation areas within these northern regions. Recognizing the importance of the Northern Highlands area for the country's climate adaptation, the project has designated the provinces of Oudomxay, Xiengkhuang, and Phongsaly as its target geography.

The Northern regions are ranked “highly” to “very highly” vulnerable to climate change due to their steep slopes prone to erosion and landslides, reliance on rainfall-dependent agriculture, and environmental degradation from development projects especially dams. Lao PDR has prioritized hydropower development as a key driver of the country’s socio-economic growth, aiming to become the 'battery of Asia.' Consequently, more than 90 dams have been constructed across the country.[38][44] However, these dam constructions have resulted in significant ecological changes, including alteration of river flow and loss of biodiversity,[39][45] as well as displacement of local communities and loss of agricultural land.[40][46] The primary cause of these issues is the lack of proper socio-environmental impact assessments during the planning and implementation of dam infrastructure. This situation highlights the need to incorporate ecosystem-based approaches to help address the adverse impacts of dam construction.

Furthermore, the northern region of Laos is highly susceptible to significant hydrometeorological hazards and serves as a potential pathway for typhoons.[41][47] This vulnerability is largely because the area lies within the downstream section of the Greater Mekong River, which is the largest trans-boundary river in Southeast Asia.[42][48] The Mekong River originates from the Tibetan Plateau and flows through China, Myanmar, Laos, Thailand, Cambodia, and Vietnam.

Consequently, runoff from upstream areas, particularly from China and Vietnam, exacerbates flood risks along the Mekong River floodplains in Laos.[43][49] The northern region's steep physiographic conditions further amplify its vulnerability. During periods of heavy rainfall, the region is prone to secondary disasters such as landslides, which can occur in conjunction with floods.[44][50] These landslides often result from the combination of intense rainfall and the steep slopes of the mountainous terrain, leading to significant impacts on infrastructure and communities.

In terms of land use pattern in the Northen Highlands, approximately 70-80% of the population depends on agriculture as their primary livelihood source,[45][51] which is heavily influenced by climate patterns. Many communities also engage in shifting cultivation, also known as slash-and-burn agriculture, which involves clearing forested areas for crop production.[46][52] This practice, while traditional, can contribute to deforestation and soil degradation if not managed sustainably. Climate change creates uncertainty for rainfed farmers, with extreme weather threatening crops. Further information about the project's target geography is provided in 'ANNEX C: PROJECT LOCATION' of this PIF.

Future climate change projections: **Lao PDR is projected to experience significant temperature increases over the period 2021–2050.**

According to the country's Third National Communication (2024), under the RCP 4.5 scenario, the average maximum temperature is expected to rise by 0.98°C to 1.35°C by 2050, with the northern regions facing greater warming compared to the south. Key provinces like Phongsaly, Luang Namtha, and Bokeo are forecast to see a minimum temperature increase ranging from 1.05°C to 1.4°C during the same period. Meanwhile, under the more extreme RCP 8.5 scenario, temperature increases are even more pronounced. The average maximum temperature is projected to rise by 1.2°C to 1.6°C between 2021 and 2050, with the northern province of Phongsaly expected to experience the largest temperature increases. Minimum temperatures in northern provinces—such as Phongsaly, Luang Namtha, Bokeo, Oudomxay, and Xayabouly—are projected to increase by 2.0°C to 2.5°C; while in the southern regions, including Saravan and Xekong, the rise in minimum temperatures is expected to range from 1.2°C to 1.5°C. This is consistent with the results of climate vulnerability analysis conducted by the Department of Disaster Management and Climate Change, MoNRE in 2016[47][53].

According to MoNRE's 2016 report[48][54], seasonal rainfall projections using historical data from 1975-2005 indicate that, based on RCP4.5 in the short term (2021-2050), rainfall will be very low during the dry season (January to May, with rainfall less than 500 mm), but higher rainfall (more than 1,000 mm) will occur during the rainy season (June to September). However, this report also indicates that an anomaly is observed under the RCP8.5 scenario, where annual rainfall in seven northern provinces of Laos, including Phongsaly and Oudomxay, will be lower (below 1,500 mm per year). This suggests changes in rainfall,

especially during the rainy and dry seasons. The report also estimates that during 2021-2050, rainfall is expected to decrease from February to May under the RCP4.5 scenario, with projections showing a decrease in annual rainfall ranging from 5%–14%. Rainfall will change or slightly increase from June to September but may sharply increase by 11%–46% from July to December. In the long term, no information is currently able to identify the best model. However, the World Bank (WB) and Asian Development Bank (ADB) reported in 2021 that annual rainfall projections for the period 2080–2099 range from -27% to +41%. Although this information does not yet provide statistically certainty in projections, it indicates the persistence of extreme conditions in regions of Laos, particularly in Phongsaly and Oudomxay provinces in the north[49][55]. Furthermore, modelling results for a temperature increase of up to 3°C indicate a 27% change in seasonal temperatures and a 41% increase in seasonal rainfall.[50][56] Additionally, the increase in rainfall begins in early April, peaks from mid-July to mid-August, and returns to the dry season by mid-September.[51][57]

In general, climate change will significantly affect the economic sector, where over 80% of rice production will be disrupted, given that rain-fed planting patterns in Laos depend on climate (rainfall duration and intensity). The impact of climate change on temperature and rainfall patterns could reduce local rice yields by around 5%–20% (approximately 0.62 million tons) by the 2040s, with losses typically greater under higher emission pathways[52][58]. The further impact of climate change on agricultural production extends to its effect on the

health and productivity of the labor force. Dunne et al. (2013) indicated that global labor productivity during peak months has decreased by 10% due to warming, and a decrease of up to 20% is expected by the mid-century under the highest emission pathway (RCP8.5). Combined, these processes are likely to have a significant impact on national food consumption patterns, both through direct effects on internal agricultural operations and through impacts on global supply chains, threatening the livelihoods of the Lao people.

Drivers of vulnerability: **There are three main drivers of vulnerability - 1) the primary livelihood of communities (such as rainfed agriculture) heavily relies on climate (and hence susceptible to climate change); 2) environmental degradation due to limited application of integrated natural resource management, EbA and financing; 3) limited capacity, knowledge & information on EbA solutions.**

In terms of the environmental degradation, human activities – especially deforestation increase the vulnerability of local communities to climate hazards like floods and droughts. Deforestation reduces the land's capacity to retain water, causing rainwater to flow directly into rivers and seas, leading to flooding during heavy rains.[53][59] In the dry season, this results in scarce groundwater resources. Without trees, raindrops hit the soil with greater force, increasing erosion and landslides, which exacerbates flooding and depletes soil fertility by washing away nutrients.[54][60] Consequently, deforestation leads to immediate disasters like

flooding, water scarcity in dry periods, decreased soil fertility affecting productivity[55][61], and increased greenhouse gas emissions from additional fertilization[56][62]. As reported in the First Biennial Update Report (2021)[57][63], forest cover in the country has decreased over time during the last five decades. The national forest inventory from 1982-2010 shows that forest cover dropped from 70% in 1940 to 41.5% in 2002. In 2015, an inventory was conducted again to assess forest and land changes from 2005 to 2015, and the results indicated that forest cover was 60.2%, equivalent to 14.3 million hectares, in 2005. This decreased to 59.3% (14 million hectares) in 2010 and 58% (13.7 million hectares) in 2015. This persistent deforestation coupled with other unsustainable uses have been linked to increased intensity of rainfall due to climate change, which exacerbates soil erosion and landslide risks. The combination of these factors have led to environmental destabilization, disrupting the delivery of ecosystem services and diminishing the natural protection these ecosystems offer against natural hazards.[58][64]

Ecosystem-based Adaptation (EbA) is essential in mitigating these impacts. EbA focuses on using natural systems and processes to manage and reduce vulnerability to climate change.[59][65] By improving forest and landscape management, EbA enhances the land's capacity to retain water, reduces runoff, and stabilizes slopes, thereby mitigating erosion and landslides.[60][66] Integrated watershed

management and natural resource management NRM approaches under EbA help in managing water resources sustainably, improving soil health, and enhancing ecosystem resilience.[61][67] These strategies are crucial for reducing the adverse effects of deforestation and climate change, and for ensuring long-term environmental stability. Unfortunately, Laos is facing insufficient institutional, technical and financial capacity to effectively plan for adaptation. This includes the limited integration of EbA into into government programs and strategies. This situation is worse at the community level, where the vulnerable communities are lacking the capacity, or leadership to take actions to reduce the risks and vulnerabilities to climate change-induced hazards, especially flood and droughts. The main reasons are the insufficient knowledge, awareness and expertise at the local level. Moreover, there is no adequate training and resources for these communities to design and implement effective EbA solutions to cope with climate change. As a result, local communities struggle to implement effective strategies to mitigate climate hazards, leaving them vulnerable to the increasing frequency and intensity of extreme weather events.

To address these drivers of vulnerability, as well as the challenges of escalating climate hazards, environmental degradation, and low adaptive capacity, the GoL has formulated climate strategies that emphasize adaptation (built upon Laos' National Adaptation Programme of Action (NAPA) 2009, as detailed in the Climate Change Strategy 2024, which outlines Laos' vision for climate change management through 2050. These strategies focus on: (1) *Agriculture and Food Security*: promoting climate-resilient agricultural practices

and enhancing food security by improving water management and diversifying crop varieties; (2) *Forestry and Land Use*: strengthening forest conservation efforts and implementing reforestation programs to mitigate climate impacts and enhance biodiversity; (3) *Water Resources:* developing sustainable water management practices to address increasing variability in water availability due to climate change, such as improving irrigation systems and water storage; (4) *Energy and Transport:* Encouraging the use of renewable energy sources and improving energy efficiency, alongside creating climate-resilient infrastructure in the transport sector; and (5) *Public Health:* Preparing for climate-related health risks by improving disease surveillance and response mechanisms, particularly for vector-borne diseases exacerbated by changing temperatures and rainfall patterns. Currently, the GoL is in the process of finalizing the National Adaptation Plan (NAP), which builds on the NAPA 2009. The NAP is expected to be completed by the end of 2024 and published in early 2025.

Although the GoL is committed to climate adaptation, available resources for implementing adaptation actions remain limited. Public funding is currently sufficient only for small-scale resilient infrastructure and sustainable agricultural practices, which are inadequate to support comprehensive, nationwide adaptation efforts, including the application of nature and ecosystem-based solutions at the local level. This resource gap underscores the country's continuous reliance on foreign aid from various development agencies, including the GEF's LDCF to support adaptation efforts. Nevertheless, depending solely on aid is not a sustainable long-term solution. This highlights the urgent need for a coordinated, inter-sectoral approach that actively involves all stakeholders, including the

private sector. Building domestic capacity to secure and manage funding independently is crucial for ensuring the long-term sustainability of NAPA implementation and reducing reliance on external support.

The current adaptation efforts at the sub-national level face two major challenges: (1) limited institutional and technical capacity to apply and finance sustainable climate adaptation solutions, and (2) Lack of integration of EbA at local level to enhance local resilience. These challenges persist due to several issues experienced by the country:

- **First, currently, there are limited available tools and capacity to effectively use the data to help the government assess and utilize real-time climate risks and vulnerabilities, which are crucial for assisting the government in adaptation planning and implementation (Barrier 1) in Laos. Many of the publicly accessible tools primarily provide historical data rather than 'close to real-time' information, which can limit their usefulness for immediate decision-making and rapid response to emerging climate threats. Moreover, the government is also lacking capacity in using the climate risks and vulnerability data to assess various climate scenarios and adaptation strategies. Developing or adapting decision support tools that enable scenario modeling and vulnerability assessments based on multiple factors is critical for understanding adaptive capacity. This challenge complicates the implementation of sustainable adaptation solutions, such as EbA actions. EbA is a relatively new concept in the country, and rigourous assessments on climate risks and vulnerabilities for specific areas, are crucial to design effective EbA solutions. The lack of real-time and localized information on risks**

and vulnerabilities to climate change at the local level hampers the development of tailored adaptation strategies that leverage natural ecosystems to mitigate climate impacts.

- **Second, inadequate regulatory frameworks (Barrier 2). Another significant challenge is the absence of specific regulatory frameworks to integrate EbA into government programs. Although the government has recently introduced a National Climate Change Strategy 2024, it lacks detailed regulations and guidelines that address the integration of EbA into national and sub-national planning. Without a robust regulatory framework, it is difficult to ensure that these approaches are systematically incorporated into government initiatives and policies.**
- **Third, limited technical capacity among authorities to integrate EbA into national and sub-national programs (Barrier 3). This lack of technical capacity stems from insufficient evidence, studies, and legal frameworks related to these approaches. Additionally, many authorities at both national and sub-national levels have not received training on EbA and its potential use and benefits, further exacerbating the challenge. The absence of comprehensive assessments, a clear legal/regulatory framework, and technical training leaves a significant capacity gap that affects the effective integration of these EbA solutions into government programs.**
- **Four, limited capacity and finance among local communities to apply EbA approaches (Barrier 4), particularly concerning sustainable livelihoods and water management. The livelihoods of communities are often influenced by unsustainable practices such as cash crop cultivation and pesticide use. And when facing climate hazards, the local communities are lacking capacity to apply necessary sustainable actions to cope while maintaining their livelihoods. This situation is compounded by a lack of access to, and availability of information on EbA approaches at the community level (Barrier 5). Moreover, public funding to support local**

communities in adopting EbA strategies is insufficient, and the private sector has not yet been actively involved in providing the necessary financial and technical support. To successfully apply EbA strategies and improve sustainability at the local level, it is crucial to enhance the capacity of local communities and allocate more resources to these efforts.

Addressing these barriers requires a concerted effort to build capacity, develop appropriate tools, and establish regulatory frameworks that support the integration of EbA. Increased investment, stakeholder engagement, and public awareness are also essential to overcoming these challenges and fostering resilient and sustainable adaptation practices in Laos. To contribute to this effort, the upcoming project interventions, outlined in 'Part B. PROJECT DESCRIPTION', are specifically designed to address these challenges and barriers. The project will focus on strengthening institutional framework and capacity to integrate and finance sustainable climate adaptation strategies such as Gender Equality and Social Inclusion (GESI) responsive EbA solutions at the national and sub-national levels. Additionally, the project aims to improve the management and access to climate information and solutions. These initiatives align with the GEF-LDCF's goals and strategies for climate adaptation.

A.2 Enabling Condition and Project's Approach

The project and its interventions are designed to support the Government of Laos (GoL) in addressing the climate adaptation challenges and barriers outlined in Section A.1, while enhancing the integration and application of EbA solutions. The project aims to

achieve transformative outcomes at both national and sub-national levels, aligning with the GoL's global and national climate adaptation commitments and priorities. The key contributions of the project include:

- Firstly, the project will tackle the issue of insufficient implementation of sustainable adaptation solutions especially at the sub-national level, which is largely due to limited institutional and technical capacity to apply and finance sustainable climate adaptation solutions. To address this, the project will strengthen national and provincial governance mechanisms to improve coordination, planning, and implementation capacities for integrating ecosystem-based climate adaptation strategies across all levels of government. This approach is particularly suited to Laos, where integrated and sustainable adaptation solutions are urgently needed. Effective governance will facilitate the collaboration of various sectors and stakeholders, including government agencies, civil society organizations, communities, and the private sector, ensuring that adaptation efforts are comprehensive, synergistic, and capable of addressing the complex challenges posed by climate change.
- Secondly, the project will address the lack of EbA adoption at the local level by facilitating pilot implementations and financing for ecosystem-based adaptation solutions in northern Laos's watershed landscapes. The goal is to enhance community resilience and livelihoods. The project will support selected "conservation communities" in implementing GESI-responsive, integrated EbA solutions, such as agroforest-oriented watershed restoration and rehabilitation. This intervention will involve leveraging various financing schemes (including private CSR funds, blended finance, REDD+, etc.), and facilitating market linkages and community enterprises based on value chain analysis for

sustainable agroforest and/or Non-Timber Forest Products (NTFP) production. Through these actions, the project will increase agricultural resilience, strengthen community livelihoods, and enhance ecosystem management to improve ecosystem services, all of which contribute to the overall resilience of the project's sites and their inhabitants.

- Lastly, to foster replication and systemic change, the project will emphasize knowledge management and sharing. By documenting lessons learned and best practices, the project will provide valuable insights and evidence for effective adaptation solutions, informing future policies, strategies, and investments in Laos and beyond. The exchange of best practices and scientific information will also encourage innovation and ongoing improvement in climate adaptation strategies within the country.

Overall, these interventions are expected to deliver multiple benefits in climate adaptation, environmental sustainability, economic development, and social equity, contributing to the GEF's Least Developed Countries Fund (GEF's LDCF) objectives and strategies. To achieve these outcomes, the project will build on existing political commitments and leverage support and investments from both government and non-government entities.

Government Commitments

The GoL has shown a strong commitment to enhancing both national and local adaptation capacities through several notable initiatives:

- Paris Agreement's goal on adaptation: in the NDC, the GoL's adaptation goal focuses on cross-sectoral coordination on data reporting and data sharing, capacity building for adaptation

monitoring and evaluation, and climate finance monitoring for improved tracking of adaptation projects in the country.

- SDGs 1, 5, 13, 15, 17: the country commits to achieve all SDGs, with adaptation specific focus on goals 1, 5, 13, 15 and 17.
- National Strategy on Climate Change 2024: the strategy defines the national vision on climate change to the year 2050. It also outlines the national strategy and programs of action on climate change management to 2030, especially risk prevention and reduction, resilience, adaption, recovery, rebuilding from impacts, and mitigation of greenhouse gas (GHG) emissions, the main cause of climate change.
- The up-coming National Action Plan (NAP): with priority strategies, among others, include: (i) Creating and implementing an integrated water resources management plan to adapt and be resilient to climate change; (ii) Increasing public awareness within the agriculture sector with a particular focus on vulnerable farming communities in rural areas; (iii) Enhancing capacity to implement existing policies, laws and regulations related to forest restoration and restoration, and (iv) Addressing the issue of clearance of forest areas for agriculture land expansion, which is in line with relevant laws and regulations, and with sustainable forest management and land-use planning.
- Lao PDR NAPA 2009: outlines the GoL's focus to enhance the National Disaster Management Committee and Climate Change Office, install an early warning system for floods, improve flood protection, conduct in-depth climate change studies, develop a climate strategy, and increase reforestation to protect watersheds and reduce erosion in vulnerable areas.
- Decree on Climate Change 2019: with main objective to mitigate climate change impacts and safeguard lives, health, property, the environment, biodiversity, and infrastructure. It also emphasizes coordination with regional and international stakeholders to

support sustainable socioeconomic development and green growth

- MoNRE Vision towards 2030: This Decree determines the position, roles, powers and duties, organizational structure, principles and work methodology of the Ministry of Natural Resources and Environment to manage, protect, restore and use the natural resources and environment in sustainable manner, contributing to the sustainable development and continuously growth of the economy and society of the nation
- National Biodiversity Strategy and Action Plan: the GoL commits to increase forest cover to 70% of the total area of the country (from 62% baseline). The NBSAP also indicates that biodiversity, and particularly ecosystems, as an approach to adaptation and disaster risk management.

Further to these initiatives above, the GoL has actively implemented various climate change adaptation and resilience programs, both at the national and sub-national levels. These programs are supported by the LDCF and other multilateral and bilateral agencies. Details of these initiatives will be provided in the following section.

Existing Initiatives

The project will build on existing investments and incorporate lessons learned from both previous and ongoing government programs. It will also draw insights from similar adaptation initiatives supported by the GEF (particularly LDCF) and other organizations. The specific connections between these existing initiatives and the project's

strategies are outlined in Part B's "Coordination and Cooperation" section.

- **Government's programs: (i) MoNRE currently implements a project title 'Building resilience through small scale infrastructure' during the period 2024-2027; (ii) MoNRE's Environment Protection Fund; (iii) Ministry of Agriculture and Forestry implements several programs related to promoting good agriculture practices (focus on maize, rice and vegetable) in Oudomxay (2023-2026).**
- **GEF's projects: (i) UNDP-led LDCF project 'Integrated Water Resource Management and Ecosystem-based Adaptation in the Xe Bang Hieng river basin and Luang Prabang city, Lao PDR' 2022-2026 (ii) WWF-led LDCF project 'Enhancing Integrated Watershed Management and Climate Resilience for Vulnerable Communities in the Nam-Poui, Nam-Poun, Nam-Lay and Nam-Houng Basins in Lao PDR' (at PPG stage); (iii) the Climate Smart Agriculture (CSA) Project is implemented by the World Vision in the northern provinces of Luang Prabang and Houaphanh; (iv) FAO-led LDCF project 'Climate Smart Agriculture alternatives for upland production systems in Lao PDR'; and (v) WWF-US-led LDCF project Enhancing Integrated Watershed Management and Climate Resilience for Vulnerable Communities in the Nam-Poui, Nam-Poun, Nam-Lay and Nam-Houng Basins in Lao PDR.**
- **Other initiatives: (i) GCF's funded 'Strengthening Climate resilience of Lao PDR Health System' project (2023-onwards) implemented Save the Children Australia; (ii) GCF's funded 'Scaling up the implementation of the Lao PDR Emission Reductions Programme' (2023-onward) implemented by GIZ; (iii) GCF's funded 'Building resilience of urban populations with ecosystem-based solutions in Lao PDR' implemented by UNEP during the period of 2020-2025; (iv) IFAD's 'Strategic Support for Food Security and Nutrition Project' (2nd Phase) 2023-2030.**

To ensure the project's resilience against potential changes in climate vulnerability driven by environmental degradation and limited adaptation capacity, a proactive approach will be adopted. The project will continuously monitor shifts in political conditions affecting adaptation, reassess associated risks and opportunities, and implement adaptive management strategies. This approach will focus on securing support from a diverse range of stakeholders. During the Project Preparation Grant (PPG) phase, stakeholders, including indigenous peoples, local communities, and marginalized groups, will be identified. The project will implement costed modalities to execute Stakeholder Engagement Plan and adopt a Gender Action Plan to ensure gender-responsive interventions and promote gender equality. The key stakeholders that will be effectively engaged by the project will include the following. The collaboration with these agencies will provide lessons, support, and potential co-financing opportunities for this project.

- **Indigenous peoples and local communities (IPLCs), particularly vulnerable groups such as women and youth, who will both benefit from and contribute to the project. These ethnic minority groups include, among others: Phou Noi, Hmong, Ew Mian, Akha, Khmou ethnic groups.**
- **The private sector (details of the private sector will be provided at the PPG after completion of company due diligence) for potential co-financing support and community enterprises.**
- **UN/IFIs/CSOs (e.g., UNDP, IFAD, ADB, Save the Children Australia, GIZ, WWF, FAO, World Vision etc) with experience in similar programs in target provinces or elsewhere in Laos.**

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B. PROJECT DESCRIPTION

Project description

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF's policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the PIF guidance document. (Approximately 3-5 pages) see guidance here

B.1 Project's Theory of Change

The project's objective is to "enhance resilience and sustainable livelihoods in the northern Lao PDR through acceleration of the integration of ecosystem-based adaptation solutions at the national and subnational levels." The proposed initiatives will tackle the barriers outlined in Part A.1 that hinder the country's efforts to decrease vulnerability and strengthen the local adaptation capacity. Nevertheless, the project foresees potential external systemic factors that could affect these government efforts, including:

1. Climate change: As detailed in Part A.1, Laos is one of the countries most vulnerable to climate change. It has experienced rising temperatures and shifting precipitation patterns that impact lives, livelihoods, ecosystems and their services. Projections indicate ongoing warming and altered precipitation, threatening local communities and their livelihoods.
2. Unsustainable land conversion and natural resource extraction leading to environmental degradation: Laos continues to struggle with unsustainable land use and land conversion, which affects communities by: (i) reducing available land for livelihoods, (ii) decreasing ecosystem services to provide climate adaptation functions, due to ecosystem degradation and overuse, and (iii) disrupting water sources through infrastructure for retention, irrigation, and storage. These land coversions (predominantly through deforestation) and ecosystem degradation from unsustainable resource use exacerbate community vulnerabilities to extreme climate events, particularly floods and droughts, reducing the natural protective buffers provided by forests and river ecosystems.

Based on the external systemic drivers mentioned above and the challenges and barriers outlined in Part A, the project anticipates three potential scenarios. These scenarios describe the project's intended role and its limitations.

'Business-as-usual (BAU) scenario'

Without the project, the local government's capacity to integrate and finance sustainable climate adaptation solutions will remain inadequate. Of particular concern is the lack of tools/applications that to help government conduct appropriate assessments on climate risks and vulnerability to design sustainable adaptation solutions (e.g., EbA actions) at the local level. This condition would be exacerbated by the likely absence of national and provincial governance mechanisms/frameworks, as well as technical capacity necessary for facilitating coordination, planning, and implementation capacities to incorporate ecosystem-based climate adaptation into local development plans. Moreover, local communities would continue to experience capacity and resource gaps to identify, construct and implement ecosystem-based adaptation efforts. As a result, these limitations would continue to hinder the development of localized adaptation strategies and actions, as well as the integration of GESI-responsive EbA solutions to strengthen local resilience and livelihoods across Laos. Consequently, communities would struggle to reduce their vulnerabilities to climate hazards. The failure to apply EbA solutions in land and natural resource governance, coupled with a lack of focus on climate risks, would result in suboptimal outcomes for sustainable development. Persistent gaps in inter-sectoral and stakeholder coordination would undermine cohesive efforts for climate adaptation and hinder the mobilization of sustainable financing and value chains that link EbA with sustainable livelihoods for conservation communities. The country would therefore face heightened climate insecurity due to the limited implementation of sustainable and GESI-responsive climate-resilient strategies, especially in food and livelihood sectors (e.g., agriculture), alongside insufficient incentive mechanisms to promote the adoption of EbA solutions.

These challenges would impede integrated landscape management efforts aimed at fostering climate adaptation and resilience. Furthermore, Laos would continue to suffer from a lack of accessible information regarding climate risks, cost-effective adaptation strategies, and available financing options. This would exacerbate gaps in the application of adaptation solutions at the local level.

'Project-based' reality

In the envisioned project scenario, transformative changes are expected in the target provinces and districts, aimed at strengthening the integration of EbA into Laos's climate adaptation governance, implementation, and financing. A key aspect of this effort is enhancing the national and subnational institutional framework and capacity to support and fund sustainable climate adaptation solutions. The project will focus on improving stakeholder capacity, particularly within government bodies (at the national, provincial and district levels), to facilitate the adoption and mobilization of resources for GESI-responsive EbA solutions that enhance local resilience. Additionally, pilot programs will foster EbA application at the local level to enhance community resilience and livelihoods in the targeted areas. This approach will achieve GESI-responsive EbA with an emphasis on integrated watershed management and community livelihood resilience strategies. Furthermore, the project will enable sustainable financing and develop value chains

that connect EbA initiatives with sustainable livelihoods. These interventions will not only address immediate climate risks but also establish a foundation for the broader application of integrated, inclusive, and synergistic adaptation solutions across various sectors and among diverse stakeholders, extending beyond the project's target geography. The project will also generate valuable lessons and information for implementing effective adaptation solutions, especially related to EbA, informing future adaptation policies in Laos. This in turns will foster innovation in the country's climate adaptation strategies. Overall, by promoting systemic improvements in climate adaptation governance and strengthening the resilience of local communities nationwide, the project's interventions will pave the way for a more adaptive and resilient future in the face of evolving climate risks in Laos.

'Ideal World' reality

In an ideal world, the project would not just anticipate potential scenarios but would actively facilitate a transformative shift in climate adaptation strategies at both the national and local levels in Laos. The envisioned changes would ensure a seamless integration of EbA into the country's climate policies and practices, creating a model for sustainable development that other nations might aspire to emulate. The project, through its interventions, would foster a robust institutional framework that effectively empowers government bodies and local communities with the capacity and resources to implement and finance sustainable climate adaptation solutions. The enhanced governance structures would lead to the establishment of effective and inclusive national and provincial mechanisms, ensuring comprehensive coordination and planning for the integration of EbA strategies into local development plans. This would result in the widespread adoption of GESI-responsive EbA solutions that significantly strengthen local resilience and improve livelihoods, allowing communities to effectively mitigate and adapt to climate hazards. Through these initiatives, the project would successfully close gaps in inter-sectoral and stakeholder coordination, creating a cohesive environment that promotes the efficient mobilization of sustainable financing and development of value chains linking EbA solutions with community livelihoods. This would lead to a significant reduction in climate vulnerability and heightened climate security across Laos, particularly in sectors crucial for livelihoods. Furthermore, the project's success and lessons-learned, would also trigger the implementation of comprehensive landscape management strategies, fostering resilience and adaptive capacity in the face of climate change nation-wide. Enhanced access to information on climate risks, effective adaptation strategies, and financing options would empower local stakeholders to implement adaptation solutions effectively and sustainably. Overall, this ideal scenario envisions a future where Laos takes the lead in climate adaptation, demonstrating how integrated, inclusive, and innovative strategies can drive systemic change, foster resilience, and secure sustainable development in a rapidly changing climate landscape.

The second scenario, the "Project-based reality," is the most likely outcome due to the GEF's LDCF investments and the project's methodologies. However, the project aspires to achieve the ideal scenario through enhanced planning during the preparation phase and strong, adaptive implementation strategies. As previously noted, the proposed LDCF interventions will address the challenges and barriers that impede effective local adaptation, moving beyond the business-as-usual scenarios. To achieve this, the project will employ integrated approaches along three causal pathways (outlined in Figure 4 – Project's Theory of Change), as described below:

1. Causal pathway 1: strengthening institutional framework and capacity to integrate and finance sustainable climate adaptation solutions.

The project aims to enhance the adoption and mobilize resources for GESI-responsive EbA solutions for enhanced local resilience. Here, this project will develop a national EbA tool and support the adoption of one national and three provincial policies that enable the integration of EbA solutions into government programs/planning documents. These strategies will integrate EbA solutions into government programs and planning documents. Additionally, the project will facilitate the adoption of three EbA plans, including financing roadmaps, in target provinces to enhance local resilience and benefit at least 800,000 people indirectly. The project will also improve the capacity of government personnel to effectively use the EbA tool and develop EbA plans and financing strategies. Key outputs include the development of a remote-sensing-based tool for climate risk assessment, adoption of regulations for integrating EbA approaches, creation of GESI-responsive EbA plans with financial roadmaps, and capacity training for government officials on using the EbA tool and developing plans. Through these interventions, the project aims to tackle challenges and barriers related to the lack of tools for assessing climate risks and vulnerabilities needed to develop effective EbA solutions. It also addresses the shortcomings in regulatory frameworks that hinder the integration of EbA into government programs.

2. Causal pathway 2: advancing adoption of EbA at local level to strengthen community resilience and livelihoods.

The project focuses on improving the implementation and financing of ecosystem-based adaptation solutions in the northern Laos watershed landscapes to enhance community resilience and livelihoods. At lease 5,000 hectares of watershed areas will be brought under restoration and rehabilitation by involving 2,500 conservation households, 50% are from ethnic minority households. It aims to increase household incomes by 20% through sustainable financing, market connections, and training in climate-smart agriculture and agroforestry. To support these efforts, the project will mobilize US$ 200,000 in sustainable financing, connect households to sustainable markets, and provide training in climate-smart agriculture and agroforestry. Through these interventions, the project seeks to overcome challenges related to inadequate understanding and capacity for integrating EbA into national and sub-national programs. It also aims to address the limited capacity and funding for implementing EbA approaches, particularly in the areas of sustainable livelihoods and water management.

3. Causal pathway 3: strengthening knowledge management and access to climate information and solutions.

The project will focus on advancing knowledge dissemination and awareness, and promoting gender equality and social inclusion in climate adaptation. It will also establish robust monitoring and evaluation procedures to ensure effective management and sustainability. This includes addressing social and environmental risks through a Grievance Redress Mechanism and implementing various safeguard plans. Under this parthway, the project aims to address challenges and barriers related to insufficient access to and availability of information on sustainable EbA solutions.

The project's adoption of EbA aims to promote climate resilience by focusing the EbA solutions for improving watershed management and fostering sustainable agriculture and agroforestry practices within the target communities. The conservation efforts of these communities will significantly enhance the health of watershed ecosystems, which serve as critical buffers against climate impacts such as floods and droughts while maintaining essential services like clean water supply, soil fertility, and other critical ecosystem services. The integration of EbA-based sustainable livelihoods will further strengthen community resilience by diversifying income sources. Sustainable practices, including the harvesting of non-timber forest products (NTFPs), enable communities to reduce their dependence on a single income source. This diversification not only enhances economic stability but also improves

resilience to economic shocks and climate impacts. Additionally, EbA strategies promote the conservation and restoration of habitats, which in turn help maintain, if not enhance the ecosystem's ability to deliver critical ecosystem services, such as water regulation through improved infiltration, soil stabilization, and provisioning services like food and water, important for climate resilience. Richer ecosystems are generally more resilient to climate change, possessing a greater ability to withstand and recover from extreme weather events. These services play a vital role in supporting household resilience, ensuring consistent access to resources that are essential for sustaining livelihoods, particularly during climate-related shocks. Finally, the project facilitates climate knowledge-sharing among stakeholders, particularly affected communities. By improving access to climate information, communities can make more informed decisions regarding their adaptation strategies, further enhancing their resilience to the challenges posed by climate change.

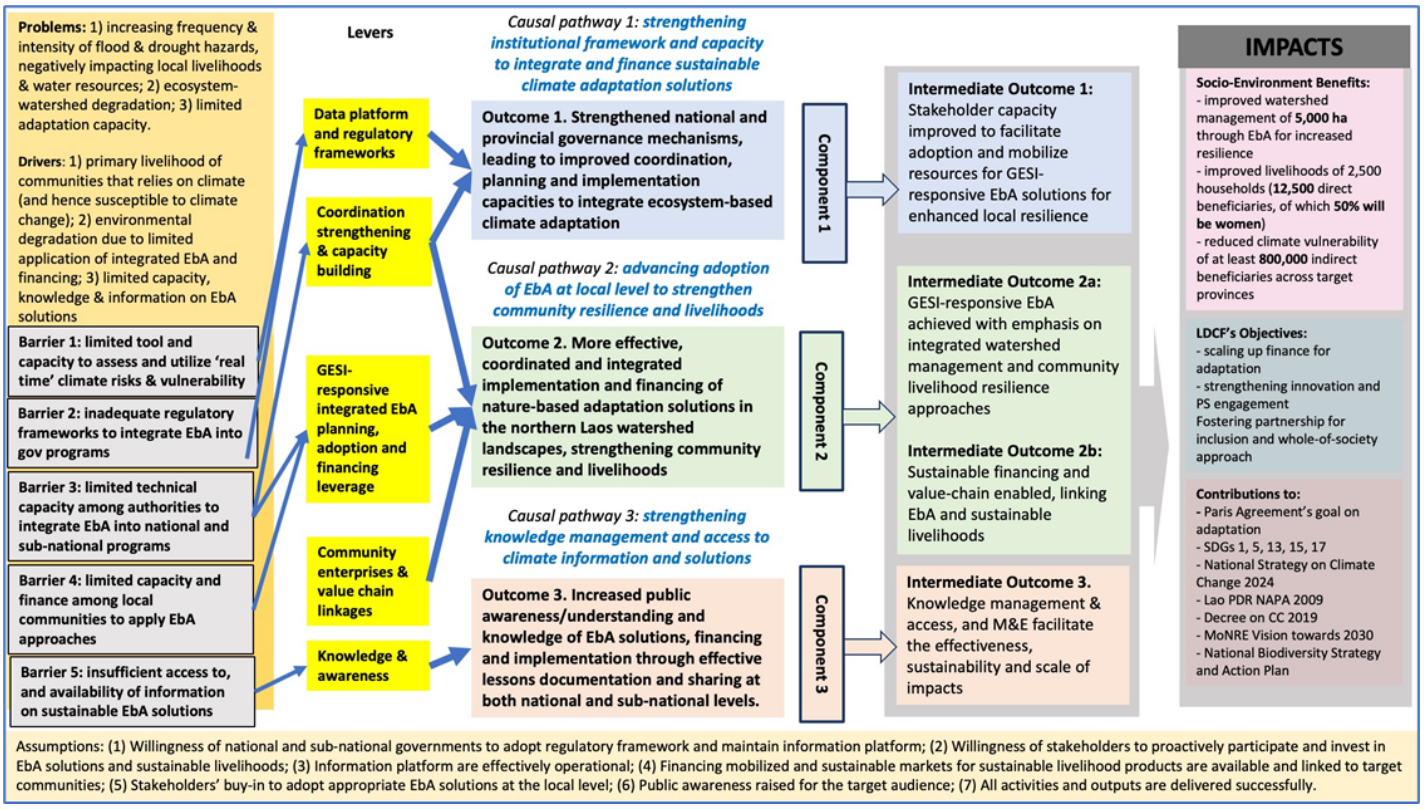

Figure 4. The Project's Project's Theory of Change (ToC)

In **the long run**, the project aims to drive systemic transformation and foster widespread adoption of sustainable climate adaptation solutions, significantly enhancing the impact of the LDCF investment. A key aspect of this effort is to build resilience against future uncertainties in climate change adaptation in Laos. The project is designed to integrate multi-level engagement, emphasizing gender equality and inclusivity, and ensuring the participation of all relevant stakeholders, especially marginalized groups. The project's strategies focus on strengthening systems for effective local adaptation solutions while promoting GESI-responsive livelihood resilience and environment benefits (through improved watershed management, restoration and rehabilitation).

Additionally, the LDCF investment will support strengthening of local social capital through the development of knowledge exchange networks and capacity-building initiatives that support adaptive

learning. This comprehensive approach is intended to produce benefits beyond the project's target areas, potentially driving lasting change in other regions of Laos and even beyond. By employing these strategic measures, the project aims to achieve its immediate goals and create a durable, transformative impact capable of withstanding future uncertainties. It will build on and enhance existing national and sub-national programs and capacities to integrate sustainable climate adaptation approaches, such as EbA effectively. The project will leverage transformative mechanisms to achieve large-scale outcomes while advancing gender equality and social inclusion. It will actively involve Indigenous Peoples (IP) and marginalized groups in adaptation governance and implementation, ensuring the integration of gender and indigenous knowledge into its design and execution. The following section will detail the project's components, outcomes, outputs, and interventions.

B.2 Project Components

The overarching goal outlined in the ToC (Figure 4) will be realized through three complementary and interrelated components. It is crucial to highlight that the descriptions of the outcomes in the subsequent component narrative will be implemented in a dynamic and iterative manner, and as such, should not be construed as a linear process. The project will be actualized through the following components:

Component 1. Enhancing climate adaptation governance to integrate EbA solutions

Outcome 1. Strengthened national and provincial governance mechanisms, leading to improved coordination, planning and implementation capacities to integrate ecosystem-based climate adaptation.

This outcome aims to establish a national EbA tool to enhance decision-making, programming, and implementation of EbA solutions at both national and local levels. It will support the adoption of one national and three provincial regulations or policies to facilitate the integration of EbA solutions into government programs and planning documents. Additionally, the project will facilitate the adoption of three EbA plans, including financing roadmaps, in the target provinces to strengthen local resilience and benefit at least 800,000 indirect beneficiaries. Furthermore, the project will enhance the capacity of at least 100 government personnel, with 30% being women, from relevant national and sub-national government institutions, to enable them to effectively utilize the EbA tool and develop/EbA plans and financing roadmaps. To achieve these targets, the project will deliver the following outputs:

- Output 1.1. National level remote-sensing-based tool/application developed for assessing close to real-time climate risk and vulnerability to design comprehensive local EbA solutions.
- Output 1.2. Provincial regulations/policies directing the integration of EbA approaches in government programs/planning documents.
- Output 1.3. Comprehensive GESI-responsive EbA or NBS for adaptation (please correct this throughout) plans for the target provinces (considering future climate risks and vulnerability[1][68]), with adaptation financial roadmaps and investment plans included.
- Output 1.4. Capacity training for key government officials at the national and sub-national levels on the utilization of EbA tool (Output 1.1.) and development of EbA plans (Output 1.3).

Component 2. Advancing EbA application and financing at the local level

Outcome 2. More effective, coordinated and integrated implementation and financing of ecosystem-based solutions for adaptation (EbA) in the northern Laos watershed landscapes, strengthening community resilience and livelihoods.

Under this outcome, the project will enable the restoration and rehabilitation of at least 5,000 hectares of critical watershed areas will be brought under restoration (through passive/natural restoration) and rehabilitation (through agroforestry-based afforestation[2][69]) by engaging 2,500 'conservation' households (i.e, the households that agree to implement localized EbA solutions, including but not limited to climate resilient agriculture and agroforestry), which will directly benefit at least 12,500 individuals (50% of whom are women). To ensure social inclusion, at least 50% of the 2,500 target households will be of the ethnic minority households. By applying EbA approaches in the target districts, the project aims to strengthen the resilience of these targeted households. In particular, the EbA approaches will focus on integrating agroforestry systems, including conservation agriculture (such as no-till farming and cover cropping), and rice-based systems that incorporate intercropping with trees or nitrogen-fixing plants. For agroforestry interventions, the project will prioritize using local species that improve soil moisture retention and resilience to drought, while also promoting biodiversity. Additionally, EbA interventions will prioritize the incorporation of perennial crops, which are more climate-resilient than annuals, and techniques like contour planting to reduce runoff and soil degradation. More feasible EbA options will be explored at PPG in consultations with the local communities in the target landscapes. Additionally, to support the efforts of these 2,500 households (out of 114,000 households in the 3 target provinces[3][70]), the project will provide technical capacity training on EbA and mobilize at least USD 200,000 in sustainable financing. Furthermore, it will connect these households with markets (e.g., off-taker companies who are willing to purchase community's sustainable products) and training on community enterprise development. These interventions are expected to result in a 20% increase in income for the target community households compared to the baseline[4][71], thereby improving the financial resilience of the target communities. During the PPG phase, a comprehensive feasibility assessment will be conducted to confirm the viability of the financing target. This assessment will evaluate the actual interest from private sector actors and secure potential engagement pathways. The assessment will also ensure that the financing figure of USD 200,000 is realistic and achievable, based on preliminary discussions with relevant private sector stakeholders.

The dominant land use in these provinces primarily consists of subsistence farming, with rice being the most commonly grown crop, followed by tea, coffee, and fruit trees such as mango. Given this context, the introduction of agroforestry will focus on integrating tree species with high market value, such as fruit trees (e.g., mango, jackfruit), timber species, tea and coffee intercropping into existing agricultural systems. This transition will require feasibility assessments during the PPG to identify appropriate agroforestry value chains that align with local socio-economic and ecological conditions and market demands. Additionally, during the project implementation, the project will conduct comprehensive value chain analyses for agroforestry products and assess market demand through consultations with local traders, potential off-takers, and export markets. EbA solutions that are likely to be explored include agroforestry models such as

alley cropping, mixed tree-crop systems, and contour planting, which are suited to the diverse topography of the target provinces. These approaches will be grounded in both ecological and economic feasibility assessments conducted in close collaboration with local stakeholders to ensure that they meet both conservation and livelihood goals. Furthermore, the private sector, especially companies with significant ecological footprints, will be engaged to co-invest in EbA solutions through e.g., corporate social responsibility (CSR) initiatives, ensuring a comprehensive and sustainable approach to financing adaptation efforts. To achieve these targets, the project will deliver the following outputs:

- Output 2.1. Support for 'conservation communities' to implement GESI-responsive integrated EbA solutions (agroforest-oriented watershed restoration and rehabilitation) in the target districts.
- Output 2.2. Sustainable financing schemes (from private CSR fund, blended, REDD+, etc.) leveraged for the target 'conservation communities' to implement EbA solutions (in relation to Output 2.1).
- Output 2.3. Assessment reports on potential market linkages built upon value chain analysis for community's sustainable agroforest and/or NTFP products (in relations to Outputs 2.1 and 2.2.).
- Output 2.4. GESI-responsive community-based enterprises established to strengthen conservation communities' livelihoods, including provision of climate-smart agriculture/agroforestry practices training (in relation to Output 2.3).
- Output 2.5 GESI- responsive community -based natural resource monitoring.

Component 3. Knowledge Management, gender and social inclusion

Outcome 3. Increased public understanding and knowledge of EbA solutions, financing and implementation through effective lessons documentation and sharing at both national and sub-national levels.

Under this outcome, the project will enhance public (governments, private sector, CSOs, local communities and other relevant stakeholders) awareness of EbA design, financing, and application, as measured by an increase in Knowledge, Attitude, and Practice (KAP) scores, with baseline and target figures to be determined during the PPG phase. This will be achieved through the development and dissemination of at least ten GESI-oriented knowledge and communication products, alongside three peer-to-peer learning workshops within a community of practice. In addition to local communities, communications and outreach under this outcome will also target major land users, such as agricultural cooperatives, large-scale farmers, tea and coffee producers, agribusinesses, and hydropower companies. Specifically, companies involved in the cultivation of tea, coffee, cardamom, and other high-value agroforestry crops will be an engagement focus for activities under Component 2. These stakeholders are critical for driving the adoption of EbA solutions and will be actively engaged through knowledge-sharing platforms and capacity-building workshops designed to promote ecosystem stewardship.

Additionally, the project will establish monitoring and evaluation procedures to ensure systemic and adaptive management, effective implementation monitoring, and sustainability. These monitoring systems will also ensure that social and environmental risks are periodically and systematically addressed through the project-level Grievance Redress Mechanism, the effective implementation of the Environmental and Social Management Plan (ESMP), and other required assessments and plans, including the Indigenous Peoples Plan, Livelihood Assessment Plan, GESI Analysis & Action Plan, and Stakeholder Analysis & Action Plan. To achieve these targets, the project will deliver the following outputs:

- Output 3.1. GESI-responsive stakeholder engagement, communication and outreach strategies, tailored to specific entities.
- Output 3.2. GESI-focused knowledge products and communication materials, conferences, and events at national and sub-national levels to disseminate the project's best practices and lessons learned.
- Output 3.3. Project-level M&E mechanism enables effective project management and monitoring, and delivery of project impacts and sustainability.
- Output 3.4. Effective application of the Environmental and Social Management Safeguard procedures to facilitate inclusive and gender-responsive participation of Indigenous Peoples and Local Communities (IPLCs).

Incremental Cost Reasoning

The project aims to build upon existing climate adaptation efforts in Laos, providing both adaptation and mitigation benefits. Component 1 addresses the challenges faced by local governments, primarily due to limited institutional and technical capacity for implementing GESI-responsive sustainable climate adaptation solutions. The lack of accessible and available tools that provide data on near real-time climate risks and vulnerability to design appropriate EbA solutions at the local level has hindered effective adaptation across various administrative levels nationwide. Additionally, although some efforts have been made to promote EbA solutions in certain parts of Laos, particularly in the southern and central regions, the northern region—where this project is focused—has largely been overlooked in terms of targeted EbA assessments and capacity-building initiatives. This has led to an absence of adequate localized EbA implementation with applies context-specific solutions for vulnerable communities in these provinces. This challenge is further compounded by inadequate regulatory frameworks to incorporate EbA into government development plans, especially at the sub-national level.

Furthermore, the current funding sources are insufficient to cover the scale of EbA interventions needed, particularly in the northern region, where resource constraints are more pronounced. Here, the project will support local authories in engaging with with diverse stakeholders to increase their involvement in adaptation efforts. However, even with greater involvement of stakeholders like the private sector, local communities and civil society, public funds will still play a critical role in financing the country's adaptation efforts. The LDCF intervention seeks to overcome these challenges sustainably, by strengthening government's capacity in domestic resource mobilization. By building institutional capacity and integrating climate adaptation into national and sub-national development planning, the government can ensure that adaptation projects are embedded into broader policy frameworks. This will allow for a more coordinated, cross-sectoral approach, enhancing the efficiency of public spending and ensuring that adaptation efforts are sustainable in the long term. Such measures will also help Laos to better leverage international climate finance (e.g., GCF, LDCF) and local resources (e.g., CSR, blended finance, etc).

Component 2 highlights that, without LDCF support, the implementation of EbA solutions in Laos, especially in Northern Laos, would remain disjointed, ineffective, and poorly integrated at the national level, and especially at the sub-national and local levels. The country would continue to face challenges related to the limited capacity to integrate EbA into development plans and insufficient capacity and financing to apply these strategies. Consequently, local communities in Laos would face heightened climate vulnerability due

to the inadequate application of EbAsolutions and sustainable livelihoods. LDCF support will advance the adoption of EbA at the local level, promoting climate-resilient livelihood options within communities, with an emphasis on sustainable market linkages, value chains, and community enterprises. Also as part of this component, the project will mobilize at least USD 200,000 from private sector partners. These funds, secured through sustainable financing sources such as CSR, blended finance, and REDD+ schemes, will support local communities in implementing EbA solutions in project landscapes.

Component 3 emphasizes that, without LDCF investment, the lack of access to and availability of information on sustainable EbA solutions and financing will persist. As a result, without LDCF intervention, a lack of awareness and understanding of EbA continues to prevail at the community level as well as among sub-national government authorities, infrastructure developers, private sector entities, and other land-use actors. The LDCF's intervention will address these gaps by enhancing access to information on sustainable adaptation solutions and disseminating lessons learned. Overall, the incremental cost of this project is justified by its potential to deliver significant climate adaptation and mitigation benefits, aligning with Laos's commitments to international climate agreements and national policies.

Stakeholder Engagement & GESI

The project will engage a broad spectrum of stakeholders throughout its preparation, implementation, and dissemination phases. These stakeholders include national ministries, provincial and district offices, UN and international development agencies, civil society organizations, the private sector, academic institutions, community groups, and Indigenous Peoples and marginalized groups. This inclusive engagement ensures diverse perspectives, equitable participation, and the promotion of gender equality, enriching the project's overall impact. Special attention will be given to ensuring that women, particularly from vulnerable communities, are actively involved in decision-making processes and benefit equitably from the project's outcomes. The roles of these stakeholders are detailed in the **preliminary Stakeholder Analysis & Engagement Plan annex**, while the gender empowerment related aspects are outlined in the **preliminary Gender Action Plan annex**, which will be further developed during the PPG phase.

The Ministry of Natural Resources and Environment (MoNRE) will serve as the Implementing Partner, leading the project at the national and sub-national levels. This includes coordinating consultations, advising on project design and government co-financing, and managing project execution. The project will focus on three provinces and three districts, where vulnerable Indigenous Peoples and marginalized groups are most affected by climate change, ensuring that they are directly involved in and benefit from the project. Furthermore, the project emphasizes the importance of gender-responsive stakeholder empowerment through collaborative decision-making and capacity-building initiatives. By establishing transparent communication channels and feedback mechanisms, the project aims to align with stakeholders' evolving needs and foster shared success. Detailed strategies for stakeholder and gender empowerment will be developed during the PPG phase and included in the Stakeholder Analysis & Engagement Plan, and Gender Action Plan. Initial consultations have commenced and will continue throughout the project. Stakeholders, including those with traditional knowledge and women's groups, will play a crucial role in sustainable practices, especially with regards to EbA application and sustainable livelihood options. Engagement with the private sector, especially through co-financing by companies committed to sustainable non-timber

forest products, is a key component. Universities, academic institutions, and civil society organizations will contribute to scientific research, technical innovation, and Monitoring, Evaluation, and Learning (MEL).

Innovation, Scaling-Up, and Global Environmental Benefits (GEBs)

The project is dedicated to promoting innovation in GESI-responsive ecosystem-based adaptation, with the goal of driving systemic change, enhancing environmental resilience, and improving community livelihoods. This strategy involves the active participation of a diverse range of stakeholders, particularly Indigenous Peoples, local communities (IPLCs), and marginalized groups, to foster transformative local adaptation efforts and generate co-benefits for mitigation. Key innovations include:

- Development of a national climate information platform: This platform will empower local leaders to conduct climate vulnerability assessments, create localized sustainable adaptation plans, and integrate these plans into broader development strategies.
- Implementation of enabling regulatory frameworks: Establishing both national and sub-national regulatory frameworks will facilitate the integration of EbA approaches into development plans, ensuring a more cohesive and strategic approach to climate adaptation.
- Enhancing climate adaptation and mitigation: The project will maximize climate adaptation impacts and achieve mitigation co-benefits by piloting GESI-responsive EbA initiatives in target districts, with a focus on integrated watershed management and strategies to enhance community livelihood resilience.
- Leveraging sustainable financing: By enabling responsible value chains at the landscape level, the project will leverage sustainable financing for EbA solutions, contributing to the resilience of local livelihoods.
- Meaningful stakeholder engagement: The project will foster enhanced stakeholder engagement and collaboration, promoting cross-sectoral coordination across different jurisdictions.

Aligned with the program's transformational levers, the project aims to directly benefit at least 12,500 individuals and indirectly impact at least 800,000 people, with 50% of beneficiaries being women. It will also contribute to carbon mitigation (to be estimated during the PPG phase) from the 5,000-hectare watershed area brought under restoration and rehabilitation by local 'conservation communities' in the target districts. Furthermore, the project is committed to integrating gender equality and social inclusion throughout its interventions, with additional details provided in Section D.

Knowledge Management

The LDCF investment includes provisions for "South-South Cooperation" and "Knowledge Management (K/M)." The project will develop a robust K/M mechanism to facilitate collaboration and learning among diverse stakeholders, including policymakers, practitioners, researchers, community-based organizations, and the private sector. This system will ensure effective dissemination of the knowledge gained during the project, helping stakeholders monitor progress and make informed decisions. The K/M mechanism will promote adaptive learning, enhancing stakeholders' ability to respond to evolving conditions. It will foster collaboration through knowledge-sharing networks and platforms, addressing climate-related challenges collectively. Lessons learned and experiences from knowledge exchanges will refine project interventions and support scaling-up efforts, ensuring that the project's impact extends beyond its immediate scope.

Policy Strengthening and Coherence

The project emphasizes policy strengthening and coherence to bolster climate adaptation governance in Laos. Central to this effort is the establishment of a national EbA tool, designed to enhance decision-making, programming, and implementation of EbA solutions at both the national and local levels. This tool will aid in developing comprehensive, remote-sensing-based assessments of future climate risk and vulnerability, enabling more strategic and informed planning. Additionally, the project will promote the adoption of one national and three provincial regulations or policies that integrate EbA solutions into government programs and planning documents. This regulatory framework will facilitate the development of three EbA plans, complete with financing roadmaps in the target provinces, thereby boosting local resilience and indirectly benefiting at least 800,000 people. By aligning and strengthening national and provincial governance mechanisms for the adoption of EbA, the project seeks to harmonize adaptation efforts across all levels of government, effectively addressing local complexities and needs while fostering a coordinated and integrated approach to climate resilience.

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[1] The assessments on future risks and vulnerability will be conducted for the three target provinces.

[2] Exact details of the agroforestry and areas left alone/under improved protection to allow for natural regeneration will be determined during the PPG-phase

[3] https://www.ceicdata.com/en/laos/household-expenditure-and-consumption-survey-number-of-household-by-province

[4] The project will identify the target villages of these 2,500 households during the PPG. Only then the project can assess the baseline income of these households.

Coordination and Cooperation with Ongoing Initiatives and Project.

Does the GEF Agency expect to play an execution role on this project?

No

If so, please describe that role here. Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing

Overall Implementation Arrangement

The project will follow UNDP's National Implementation Modality (NIM), with the UNDP Laos Country Office providing support services. The Ministry of Natural Resources and Environment (MoNRE) will serve as the Implementing Partner, responsible for the project's execution. The specific organizational structure will be finalized during the PPG phase. The need for UNDP to support executing roles will be assessed during the PPG phase, following a detailed evaluation and the completion of the HACT micro-assessment. During this phase, the project will explore all available options, including the possibility of third-party support, to determine if execution support is required. UNDP, under MoNRE's authorization, may handle procurement, recruitment, and project activities. UNDP will be accountable to the GEF for project implementation, ensuring it meets agreed standards and requirements. This collaborative framework aims to ensure effective management and adherence to international standards.

Planned Cooperation with Other Relevant Projects and Initiatives

The project will build on existing baseline activities and investments from project partners, while also establishing new partnerships and strengthening existing ones to ensure the sustainability of its outcomes. The project will actively seek co-financing opportunities and collaborate with potential implementation partners. It will also draw insights from related initiatives to improve its strategies. Several key initiatives (Table A below) have been identified for partnership development, and additional ones will be explored during the PPG phase. This collaborative approach is designed to enhance impact, facilitate knowledge exchange, and support the long-term sustainability of the project's results.

Table A. Potential Collaboration with Existing Initiatives

Existing initiatives	Main Partners	Intersection with project outputs/interventions
Building resilience through small scale infrastructure, and MoNRE's Environment Protection Fund	MonRE	This program focuses on development of small-scale infrastructure for water retention and water conservation to increase water availability during droughts. This initiative will be relevant for the project's interventions related to watershed management (Outputs 2.1 and 2.2).
Programs related to promoting good agriculture practices (focus on maize, rice and vegetable) in Oudomxay (2023-2026)	Ministry of Agriculture and Forestry	These programs focus on increasing agriculture productivity through the application of good agriculture practices. This initiative will especially connect with this project's interventions under Component 2, especially activities related to the project's Output 2.4 (provision of climate-smart agriculture/agroforestry practices training).
Integrated Water Resource Management and Ecosystem-based Adaptation in the Xe Bang Hieng river basin and Luang Prabang city, Lao PDR (2022-2026)	UNDP (GEF)	This project focuses on (i) developing national and provincial capacities for Integrated Catchment Management (ICM) and integrated urban Ecosystem-based Adaptation (EbA) for climate risk reduction, (ii) implementing EbA interventions with supportive infrastructure and livelihood enhancement, and (iii) focusing on knowledge management and Monitoring and Evaluation (M&E). While it targets the infrastructure and urban planning related sectors, lessons learned from this project are very relevant for Outputs 1.3 and 2.1 of this PIF's project. More detailed collaboration/alignment will be explored at PPG.
Enhancing Integrated Watershed Management and Climate Resilience for Vulnerable Communities in the Nam-Poui, Nam-Poun, Nam-Lay and Nam-Houng Basins in Lao PDR (at PPG stage)	WWF (GEF)	This project has an objective to 'enhance adaptation capacity of agriculture-dependent communities to floods, droughts, seasonal variations, and uneven access to freshwater in key river basins in Sayaboury province.' There is a significant potential for the two projects to collaborate to share lessons learned on watershed management and climate smart agriculture training (Outputs 2.1, 2.2, 2.3, 2.4). More detailed collaboration/alignment will be explored at PPG.
The Climate Smart Agriculture (CSA) Project (the northern provinces of Luang Prabang and Houaphanh)	World Vision (GEF)	This project is aimed at (i) building an enabling environment to promote and incentivize resilient and sustainable rural landscapes in Lao PDR; (ii) adopting resilient and sustainable land-use planning and value-chain networks in both provinces; (iii) deploying climate-smart technologies to improve livelihood practices and support the food security and nutrition of rural households. This project's lessons will be very much relevant for Outputs 2.1, 2.2, 2.3, 2.4. More detailed collaboration/alignment will be explored at PPG.
Climate Smart Agriculture alternatives for upland production systems in Lao PDR	FAO (GEF)	The planning and decision-making tools developed by the FAO-LDCF project for Luang Prabang and Houaphan provinces (Output 2.1.3) offer valuable lessons and guidance for the UNDP-MoNRE's LDCF project in creating the national-level remote sensing EbA tool (Output 1.1). Moreover, the project will build on this FAO-LDCF project in developing regulations / policies for EbA mainstreaming in its target provinces (Output 1.2). It will also identify potential alignment with the national policies developed under FAO-LDCF project. More detailed collaboration/alignment will be explored at PPG.
Enhancing Integrated Watershed Management and Climate Resilience for Vulnerable Communities in the Nam-Poui, Nam-Poun, Nam-Lay and Nam-Houng Basins in Lao PDR	WWF-US (GEF)	This project is aimed at enhancing climate resilience of local communities in key watersheds in Sayaboury province through IWRM (integrated water resource management) and community-driven livelihood support. This UNDP-MonRE's LDCF project will coordinate with this WWF-led project to learn from their lessons especially with regard to project's Outputs 1.3, 2.1, 2.2, 2.3, 2.4. More detailed collaboration/alignment will be explored at PPG.
Strengthening Climate resilience of Lao PDR Health System (2023-onwards)	Save the Children Australia (GCF)	This project aims to enhance the climate resilience of the Lao PDR health system and empower communities to manage health impacts from climate change. The project will strengthen health system leadership and governance at all levels, improve access to climate information and WASH indicators for health facilities, and enhance health system capacity in 25 climate-vulnerable rural districts. Lessons from this project is especially relevant for Output 1.1. where the project will support the development of a national level remote-sensing-based tool/application for assessing future climate risk and vulnerability to design comprehensive local EBA solutions. More detailed collaboration/alignment will be explored at PPG.
Scaling up the implementation of the Lao PDR Emission Reductions Programme (2023-onward)	GIZ (GCF)	This project's interventions center around improving governance and sustainable forest landscape management. The lessons from this project will be highly relevant for Outputs 1.3 (EbA plans) and 2.1 (watershed management) to build upon. More detailed collaboration/alignment will be explored at PPG.
Building resilience of urban populations with ecosystem-based solutions in Lao PDR (2020-2025)	UNEP (GCF)	This project aims to test an alternative approach to flood control in urban Laos, moving away from a traditional focus on grey infrastructure, such as dams and concrete drainage systems. It will implement ecosystem-based adaptation in urban areas. Lessons from this project will be relevant for Output 1.3. More detailed collaboration/alignment will be explored at PPG.
Strategic Support for Food Security and Nutrition (2nd Phase) 2023-2030	IFAD	The project aims to improve food and nutrition security through investments in nutrient-sensitive, climate-adapted agriculture. Key activities include empowering women to enhance family diets, especially during the critical first 1,000 days of an infant's life, forming farmers' organizations to

		connect small-scale farmers to markets, and supporting farmers in creating personalized, profitable agricultural solutions in collaboration with peers and private enterprises. This initiative is a great potential partner to collaborate on Outputs 2.2, 2.3 and 2.4. More detailed collaboration/alignment will be explored at PPG.

Core Indicators Removed

Project Core Indicators		Expected at PIF
3	Area of **land and ecosystems under restoration** (hectare)	5,000 ha
6	**Greenhouse Gas Emissions Mitigated** (metric tons of CO_2e)	To be estimated at PPG
11	People benefiting from GEF-financed investments **disaggregated by sex** (count)	12,500 direct beneficiaries (50% are women) 800,000 indirect beneficiaries across target provinces (50% are women)

- Core Indicator 3: The project will support around 2,500 IPLC households (50% are from ethnic minority households) to bring 5,000 ha of watershed areas across three districts under restoration and rehabilitation.
- Core Indicator 6: Carbon mitigation will be calculated using the FAO Ex-ACT tool and is derived from restoration and rehabilitation of 5,000 ha watershed area. However, due to limited data at PPG, and the potential that the ha target for restoration-rehabilitation might increase, the carbon mitigation will be calculated at the PPG phase.
- Core Indicator 11: Finally, the project is expected to directly benefit a total of 12,500 people of whom 50% are women, and at least 800,000 people[1][72] indirectly through the adoption of the costed EbA plans across the three target provinces.

[1] The total populations of the three target provinces (https://www.citypopulation.de/en/laos/cities/).

[1] The total populations of the three target provinces (https://www.citypopulation.de/en/laos/cities/).

Core Indicators

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

META INFORMATION – LDCF

LDCF **true**	SCCF-B (Window B) on technology transfer **false**	SCCF-A (Window-A) on climate Change adaptation **false**

Is this project LDCF SCCF challenge program?

false

This Project involves at least one small island developing State(SIDS).

false

This Project involves at least one fragile and conflict affected state.

false

This Project will provide direct adaptation benefits to the private sector.

false
This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs).
false
This project will collaborate with activities begin supported by other adaptation funds. If yes, please select below

Green Climate Fund	Adaptation Fund	Pilot Program for Climate Resilience (PPCR)
false	**false**	**false**

This Project has an urban focus.
false
This project will directly engage local communities in project design and implementation
true
This project will support South-South knowledge exchange
true

This Project covers the following sector(s)[the total should be 100%]: *	
Agriculture	20.00%
Nature-based management	20.00%
Climate information services	20.00%
Coastal zone management	0.00%
Water resources management	40.00%
Disaster risk management	0.00%
Other infrastructure	0.00%
Tourism	0.00%
Health	0.00%
Other (Please specify comments)	0.00%
Total	100.00%

This Project targets the following Climate change Exacerbated/introduced challenges:*

Sea level rise	Change in mean temperature	Increased climatic variability	Natural hazards
false	**true**	**true**	**true**

Land degradation	Coastal and/or Coral reef degradation	Groundwater quality/quantity
true	**false**	**false**

CORE INDICATORS – LDCF

	Total	Male	Female	% for Women
CORE INDICATOR 1 Total number of direct beneficiaries	12,500	6,250.00	6,250.00	50.00%
CORE INDICATOR 2 (a) Area of land managed for climate resilience (ha) (b) Coastal and marine area managed for climate resilience (ha)	5,000.00 0.00			
CORE INDICATOR 3 Number of policies/plans/ frameworks/institutions for to strengthen climate adaptation	7.00			
CORE INDICATOR 4 Number of people trained or with awareness raised	100	70.00	30.00	30.00%

CORE INDICATOR 5 Number of private sector enterprises engaged in climate change adaptation and resilience action	6.00			

Key Risks

	Rating	Explanation of risk and mitigation measures
CONTEXT		
Climate	Moderate	Project activities implemented in areas prone to climate hazards. Please see Risk 4 of the project's pre-SESP for details.
Environmental and Social	Moderate	The overall rating of the pre-SESP is 'moderate'. Please see the project's pre-SESP for details
Political and Governance	Low	The project will be executed at the national, provincial, district, and community levels, with robust support from the government and other stakeholders. MoNRE, the executing agency overseeing implementation, brings extensive experience in project management, political navigation, and governance. Although there is a potential risk of delays due to the turnover and rotation of government officials, this risk is minimized by the existing management mechanisms and lifelong assessment system. The project will engage with any new personnel during the PPG phase or implementation period to ensure their alignment with project goals and minimize impact on outcomes. This risk will be addressed in the stakeholder engagement plan, which will outline detailed mitigation strategies.
INNOVATION		
Institutional and Policy	Moderate	The achievement of Outputs 1.2 and 1.3 will depend on the national and provincial government's buy-in. There is potential that the newly appointed (relevant) national entities and governors change their commitments / priorities due to the turnover. There is a risk that this might lead to a lack of buy-in for the adoption of these policies/plans, which could delay the execution of interventions under these outputs. The project PMU will consider recruiting a government liason who will link the project with necessary authorities to ensure their buy-in. The project aims to enhance local resilience by formulating integrated watershed management plans and sustainable livelihoods (promoting NTFPs). However, these strategies may limit access to forest resources, such as timber, particularly for marginalized individuals or groups, potentially leading to economic loss if the planned alternative livelihoods and increased income for Indigenous Peoples and Local Communities (IPLCs) do not materialize as expected. To mitigate this risk, the project will reassess the Social and Environmental Screening Procedure (SESP) and develop an Environmental and Social Management Framework (ESMF) and a Stakeholder Engagement Plan. Additional stakeholder consultations will occur during the Project Preparation Grant (PPG) phase. These measures, along with targeted management plans and a Strategic

		Environmental and Social Assessment (SESA), will address this risk during project implementation. Please refer to Risk 3 of the project's preliminary SESP for further details.
Technological		N/A
Financial and Business Model		N/A
EXECUTION		
Capacity	Moderate	Limited capacity of the government, especially Department of Climate Change in managing the project under National Implementation Modality with Country Office Support Services. To mitigate the risk, UNDP will provide training on fund management to the government.
Fiduciary	Moderate	Financial management and procurement risks relate to the potential mismanagement of funds. To mitigate these risks, the project will adhere to UNDP and GEF financial rules throughout its duration. Regular financial audits will be conducted to ensure the proper use of project funds and prevent any unauthorized changes. Given the current global economic climate, there is a risk of rising inflation during the PPG phase and/or project implementation, which could impact the exchange rate and subsequently increase the project's operational and other costs. To address this, the project will reevaluate this risk during the PPG phase and develop suitable mitigation strategies.
Stakeholder	Moderate	Important stakeholders are not fully engaged, especially vulnerable and marginalized groups including women and IPLC. Please see Risk 2 and Risk 5 of the project's pre-SESP for details.
Other		N/A
Overall Risk Rating	Moderate	Combining all identified risks, the overall project risk rating is assessed as moderate. However, close monitoring will ensure timely risk identification, management, and adaptation. The project will carry out scoped/targeted assessments and SESA, and develop necessary plans during the PPG phase or implementation period to mitigate these risks.

C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Describe how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how. (max. 500 words, approximately 1 page)

The project's objective and interventions are aligned with LDCF programming strategies, as well as Laos's national and global priorities, as outlined below.

GEF LDCF Programing Strategies: (i) Theme 1: Agriculture, Food Security, and Health; (ii) Theme 2: Water; (iii) Theme 3: Nature-Based Solutions; and (iv) Theme 4: Early Warning and Climate Information Systems.

- (a) Lever of Transformation 1: Policy coherence and mainstreaming of climate adaptation; (b) Lever of Transformation 2: Strengthened governance for adaptation; (c) Lever of Transformation 3: Knowledge exchange and collaboration

Project's alignment:

The project aims to strengthen resilience in northern Laos by integrating GESI-responsive ecosystem-based adaptation (EbA) solutions and strategies into local and national frameworks. This aligns directly with the GEF LDCF strategies, particularly by focusing on the restoration of watershed areas and improving local livelihoods. The project contributes to Theme 1 by promoting climate-smart agriculture and sustainable financing, which will help increase food security and enhance local resilience. It also aligns with Theme 2 through the restoration and rehabilitation of 5,000 hectares of watershed areas, improving water conservation, and reducing climate risks. In alignment with Theme 3, the project will also establish and implement EbA strategies at the national and provincial levels. This includes the creation of a remote-sensing-based tool for climate risk assessment and the adoption of regulations that integrate NBS/EbA approaches into government programs. Lastly, Theme 4 is supported through the establishment of robust monitoring and evaluation procedures, which include a Grievance Redress Mechanism and various safeguard plans to manage environmental and social risks. Furthermore, the project aligns with Lever 1 by strengthening institutional frameworks and capacities for climate adaptation. This includes the development of a national EbA tool, supporting the adoption of EbA policies, and integrating these solutions into government programs and planning documents. Lever 2 is addressed by advancing governance structures for adaptation through the adoption of EbA plans with financing roadmaps in target provinces, benefiting at least 800,000 people indirectly. Additionally, the project will improve the capacity of government personnel to effectively use the EbA tool and develop sustainable financing strategies. Finally, Lever 3 is reinforced through the project's focus on knowledge management, dissemination, and the promotion of gender equality and social inclusion (GESI). The project will establish knowledge exchange networks and support adaptive learning to enhance the widespread adoption of climate adaptation solutions.

Laos' global and national priorities: (i) Paris Agreement's goal on adaptation, (ii) SDGs 1, 5, 13, 15, 17, (iii) National Strategy on Climate Change 2024, (iv) Lao PDR NAPA 2009, (v) Decree on CC 2019, (vi) MoNRE Vision towards 2030, and (vii) National Biodiversity Strategy and Action Plan

Project's alignment:
Paris Agreement and Nationally Determined Contributions (NDCs): The project aligns with Laos' commitment to the Paris Agreement by enhancing cross-sectoral coordination for data reporting and capacity building in adaptation monitoring and evaluation. By developing a remote-sensing-based tool for climate risk assessment and supporting the integration of ecosystem-based adaptation solutions into national and provincial policies, the project directly supports Laos' goals of improved climate finance monitoring and effective tracking of adaptation projects. These efforts will not only strengthen the institutional framework but also ensure that adaptation strategies are data-driven and impactful.

Sustainable Development Goals (SDGs): The project's focus on GESI-responsive EbA solutions, watershed restoration, and sustainable livelihoods aligns with Laos' commitment to achieving SDGs 1, 5, 13, 15, and 17. By increasing household incomes through climate-smart agriculture and promoting gender equality and social inclusion, the project contributes to SDG 1 (No Poverty) and SDG 5 (Gender Equality). Moreover, the project's emphasis on resilience and climate action supports SDG 13 (Climate Action), while its efforts to restore and rehabilitate 5,000 hectares of watershed areas align with SDG 15 (Life on Land). Finally, the

project's multi-level engagement and collaboration with various stakeholders promote SDG 17 (Partnerships for the Goals), ensuring a comprehensive approach to climate adaptation.

National Strategy on Climate Change 2024: The project is closely aligned with the Climate Change Strategy 2024, which outlines Laos' vision for climate change management until 2050. By focusing on risk prevention, resilience building, and adaptation through EbA solutions, the project contributes to the strategy's objectives of mitigating the impacts of climate change and enhancing recovery and rebuilding efforts in affected areas. The project's development of EbA policies and financing roadmaps at the national and provincial levels also supports the strategy's emphasis on sustainable development and the reduction of greenhouse gas (GHG) emissions.

The up-coming National Action Plan (NAP): The project is aligned with priority strategies outlined in the upcoming NAP including: (i) integrated water resources management; (ii) sustainable agriculture; (iii) Forest restoration and restoration, and (iv) Sustainable forest management and land-use planning.

Decree on Climate Change 2019: The project's objectives align with the Decree on Climate Change 2019, which aims to mitigate climate change impacts and safeguard lives, health, property, and the environment. By advancing EbA solutions, promoting sustainable financing, and enhancing local resilience, the project supports the decree's emphasis on protecting biodiversity, infrastructure, and socioeconomic development. The project's coordination with regional and international stakeholders also aligns with the decree's call for collaboration in achieving sustainable and green growth.

MoNRE Vision towards 2030: The project's efforts to strengthen institutional frameworks and enhance the capacity of government personnel align with the Ministry of Natural Resources and Environment's (MoNRE) Vision towards 2030. By focusing on the sustainable management, protection, and restoration of natural resources and the environment, the project contributes to the MoNRE's goal of supporting sustainable development and economic growth in Laos. The project's emphasis on integrating EbA solutions into government programs and policies further supports the MoNRE's vision of a resilient and sustainable future for the nation.

National Biodiversity Strategy and Action Plan (NBSAP): The project aligns with the NBSAP by contributing to Laos' goal of increasing forest cover to 70% of the total land area. Through the restoration of watershed areas and the promotion of sustainable livelihoods, the project supports the NBSAP's emphasis on biodiversity and ecosystems as key approaches to adaptation and disaster risk management. By involving local communities in reforestation and conservation efforts, the project also ensures that biodiversity protection is inclusive and benefits those most affected by climate change.

Lao PDR National Adaptation Programme of Action (NAPA) 2009: The project builds on the goals outlined in the NAPA 2009 by enhancing disaster management and resilience in northern Laos. Through the installation of early warning systems, the restoration of watershed areas, and the promotion of sustainable livelihoods, the project aligns with the NAPA's focus on flood protection, reforestation, and climate change studies. By involving local communities, including women and marginalized groups, the project ensures that adaptation measures are inclusive and address the needs of vulnerable populations. It is to be noted that the GoL is in the process of formulating the National Adaptation Plan (NAP). The NAP builds on the foundation established by NAPA 2009. It also aligns with other climate change adaptation plans and strategies outlined in the National Climate Change Strategy 2024. After several years of preparation, it is now 90% complete and is expected to be finalized and endorsed by the government by the end of 2024, with publication scheduled for early 2025.

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment:

We confirm that gender dimensions relevant to the project have been addressed as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during PIF development as required per GEF policy, their relevant roles to project outcomes and plan to develop a Stakeholder Engagement Plan before CEO endorsement has been clearly articulated in the Project Description (Section B).

Yes

Were the following stakeholders consulted during project identification phase:

Indigenous Peoples and Local Communities: Yes

Civil Society Organizations: Yes

Private Sector: Yes

Provide a brief summary and list of names and dates of consultations

The PIF has been consulted to various stakeholder representatives from government agencies, IPLCs, CSOs/NGOs and private sector. The details on these consultations are provided in **ANNEX I – PRELIMINARY STAKEHOLDER ENGAGEMENT ANALYSIS & PLAN** of this PIF. Please refer to this annex in the Roadmap section.

(Please upload to the portal documents tab any stakeholder engagement plan or assessments that have been done during the PIF development phase.)

Private Sector

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in the section B project description?

Yes

Environmental and Social Safeguard (ESS) Risks

We confirm that we have provided indicative information regarding Environmental and Social risks associated with the proposed project or program and any measures to address such risks and impacts (this information should be presented in Annex D).

Yes

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described in the Project Description (Section B)

Yes

ANNEX A: FINANCING TABLES

GEF Financing Table

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

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	GEF Project Grant($)	Agency Fee($)	Total GEF Financing ($)
UNDP	LDCF	Lao PDR	Climate Change	LDCF Country allocation	Grant	6,192,694.00	588,306.00	6,781,000.00
Total GEF Resources ($)						**6,192,694.00**	**588,306.00**	**6,781,000.00**

Project Preparation Grant (PPG)

Is Project Preparation Grant requested?

true

PPG Amount ($)

200000

PPG Agency Fee ($)

19000

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	PPG($)	Agency Fee($)	Total PPG Funding($)
UNDP	LDCF	Lao PDR	Climate Change	LDCF Country allocation	Grant	200,000.00	19,000.00	219,000.00
Total PPG Amount ($)						**200,000.00**	**19,000.00**	**219,000.00**

Please provide justification

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total($)
Total GEF Resources					**0.00**

Indicative Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing($)	Co-financing($)
CCA-1-1	LDCF	2,167,443.00	9205000
CCA-1-2	LDCF	928,904.00	3945000
CCA-1-3	LDCF	1,238,539.00	5260000
CCA-1-4	LDCF	1,857,808.00	7890000
Total Project Cost		**6,192,694.00**	**26,300,000.00**

Indicative Co-financing

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	MoNRE	In-kind	Recurrent expenditures	300000
Recipient Country Government	Provincial Governments of Oudomxay, Xiengkhuang, and Phongsaly	In-kind	Recurrent expenditures	600000
GEF Agency	UNDP	In-kind	Investment mobilized	200000
Civil Society Organization	Save the Children Australia (GCF funded)	In-kind	Recurrent expenditures	10000000
Civil Society Organization	GIZ (GCF funded)	In-kind	Recurrent expenditures	5000000
Donor Agency	UNEP (GCF funded)	In-kind	Recurrent expenditures	5000000
Donor Agency	IFAD	In-kind	Recurrent expenditures	5000000
Private Sector	TBC at PPG upon completion of company due diligence	Grant	Investment mobilized	200000

Total Co-financing				**26,300,000.00**

Describe how any "Investment Mobilized" was identified

The project's indicative co-financing totals to USD 26.3 million, reflecting the potential support/collaboration from various stakeholders, including government bodies, civil society organizations, international agencies, and the private sector. The breakdown is as follows:

- The Recipient Country Government, through MoNRE and the Provincial Governments of Oudomxay, Xiengkhuang, and Phongsaly, are estimated to contribute USD 900,000 in in-kind resources for recurring expenditures, derived from parallel programs related to watershed restoration-rehabilitation and climate smart agriculture.
- UNDP, as the GEF Agency for this project, adds USD 200,000 in in-kind support for the project implementation.
- Civil Society Organizations, including Save the Children Australia, GIZ, and UNEP, will provide an estimated USD 20 million in in-kind contributions, funded by the Green Climate Fund (GCF), to cover recurring expenditures for parallel interventions related to EbA solutions.
- IFAD is also expected to contribute USD 5 million in in-kind recurring expenditure for parallel programs related to sustainable livelihoods/climate-smart agriculture.
- Investment mobilized: UNDP expects to mobilize a total of USD 200,000 in-kind resource from UNDP TRAC. Additionally, as part of the implementation of Output 2.2, the project aims to mobilize at least USD 200,000 in financing from private sector partners (TBD at PPG upon the completion of company due diligence). This funding will be secured during the project implementation through sustainable financing mechanisms such as private CSR funds, blended finance, and REDD+ initiatives. The funds will support 'conservation communities' in implementing Ecosystem-based Adaptation (EbA) solutions within the project's landscapes. Potential private sector companies will be closely engaged during the PPG phase to secure co-financing commitments.

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Name	Date	Project Contact Person	Phone	Email
GEF Agency Coordinator	Nancy Bennet	9/17/2024	Executive Coordinator (Ad Interim)		nancy.bennet@undp.org
Project Coordinator	Aishath Azza	9/17/2024	Regional Technical Advisor		aishath.azza@undp.org

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

Name	Position	Ministry	Date (MM/DD/YYYY)
Ms. Phakkavanh Phissamay	Director General, Department of Planning and Finance	Ministry of Natural Resource and Environment	8/16/2024

ANNEX C: PROJECT LOCATION

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

The Lower Mekong Basin (LMB) is a large geographical area that includes a transboundary watershed region where Laos is the largest landlocked country (202,000 km²). In July 2019, the lowest water levels in history were recorded at all monitoring stations along the main-stream, with water flow decreasing by 70%-75% compared to the same period in 2018, affecting more than 68 million people in four countries dependent on the lower Mekong River[1][73]. Additionally, irregular flooding cycles have led to a 60% loss in fish catch (equivalent to USD 11 million)[2][74], reduced agricultural production (200,000 hectares of rice fields experienced decreased productivity due to climate change and soil degradation of approximately 500,000 tons per year)[3][75], and adversely affected the livelihood of communities, particularly in the service sector which accounts for 10% of Laos PDR's GDP[4][76].

One important site in the LMB region is the Northern Highland in Laos PDR, which functions as a water catchment and regulator to maintain the Mekong River's water volume, particularly in **Oudomxay, Xiengkhuang, and Phongsaly provinces** – the target geography of this project. Specifically, the project's interventions related to integrated watershed management will be implemented in Nam Phark river basin (Oudomxay), Nam Ou river basin (Oudomxay – Phongsaly), Nam Kor Catchment (Oudomxay), and Ngeum River (Xiengkhuang). There are at least three reasons why this region is highly vulnerable to climate change: (1) its mountainous topography with steep slopes makes it prone to erosion and landslides; (2) communities are heavily dependent on subsistence and traditional agriculture (e.g., rainfed paddy), with planting seasons and productivity highly dependent on rainfall patterns; and (3) the region is increasingly experiencing environmental degradation and impacts from development projects, including dam construction that can affect river flow and aquatic life. Conversely, due to its topographical location, this area is expected to maintain river flow and volume for the Mekong River's main stream, especially during the dry season.

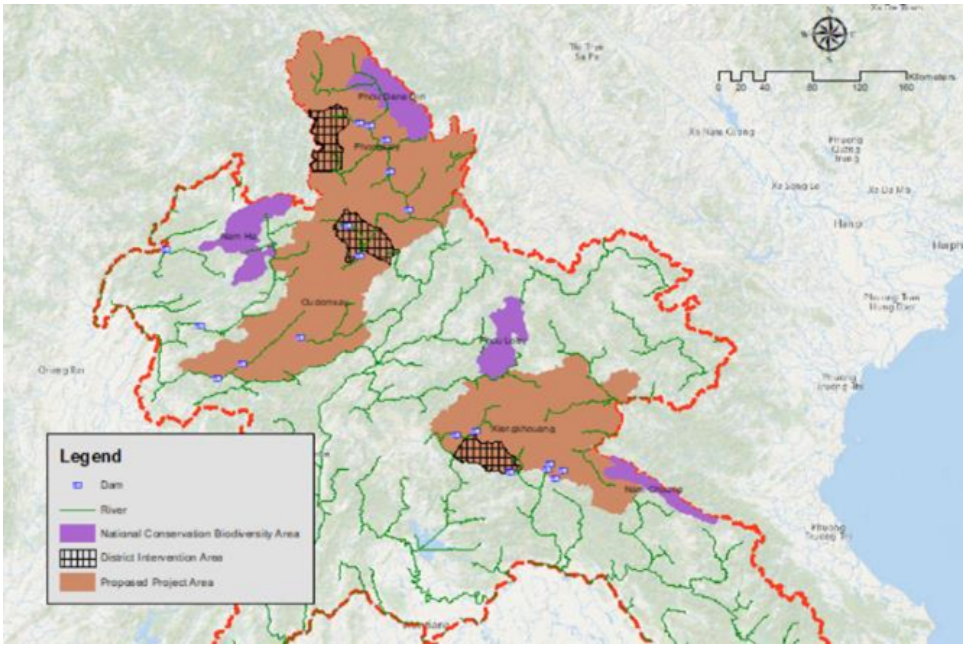

Figure 5. Map of project geography as part of the Northern Highland, Lower Mekong River Basin.

In this region, over 80% of the 731,000 population relies on subsistence agriculture. Because highland farming largely depends on rainfall, climate determines agricultural practices. Climate change puts rainfed farmers in uncertain positions with extreme dry weather events threatening annual harvests. Using the InVEST model (Integrated Valuation of Ecosystem Services and Tradeoffs), Trisurat et al. (2017) found that under the worst-case climate change scenario, Laos PDR will not be able to maintain its food security by 2030, particularly in areas with steep topography, sandy soil, and drought[5][77]. Therefore, the Laos government designates these three regions as highly vulnerable to climate change, prioritizing their resilience enhancement. Several conservation areas are located in or adjacent to these provinces, such as Nam Ha NCBA, part of the UNESCO "Lancang Mekong Basin" World Heritage Landscape in Oudomxay Province, Phou Dene Din NCBA in Phongsaly Province, and Phou Loey NCBA in Xiengkhuang Province[6][78].

1. Boun Neua District, Phongsaly Province

Boun Neua District is located in the western part of Phongsaly Province, approximately 41 km from the provincial capital. The district covers an area of 1,112.16 km² (111,216.79 ha), with 73.4% classified as upland or mountainous terrain. Forests cover 79,572.08 ha, making up 71.55% of the total district area, while agricultural lands comprise 25.03%, residential areas 588.16 ha, and wetlands 2,197 ha. In 2020, Boun Neua District experienced robust economic growth, averaging 11.39% annually. The GDP per capita was recorded at USD 1,580 per person per year. The district has made significant strides in infrastructure development, with 95% of households connected to the national electricity grid and 90% of roads accessible during both wet and dry seasons. The district's economy is primarily driven by agriculture and forestry, accounting for 56.79% of income, followed by services (26.16%) and industry and handicrafts (16.94%). Key agricultural

products include rice, fruits, rubber trees, galangal, coffee, sugarcane, tobacco, maize, and tea. The forestry sector has seen 1,450 ha of forests restored between 2015 and 2019, with tree planting completed on 158.44 ha.

In terms of demographic, Boun Neua District is home to 24,878 people living in 4,773 households across 66 villages. The population is predominantly comprised of ethnic Tibetans (76.59%), with smaller Lao (2.36%) and Khmu (3.03%) communities. Out of the 66 villages, 43 (65%) are above the poverty line, while 23 (34.8%) are considered below it. Agriculture remains a critical sector for socio-economic development, with rice paddy occupying 1,740 ha and yielding an average productivity of 5 tons/ha. Between 2015 and 2019, Boun Neua received a development budget of 665 billion kip (approximately USD 30 million), with only a small portion (1%) coming from Official Development Assistance (ODA). The remaining funds were sourced from public investments and loans.

Climate Change and Natural Resource Management: Climate change poses significant threats to the district, necessitating increased resilience and adaptation measures. Priority actions include establishing disaster response mechanisms, promoting intercropping and crop rotation, setting up early warning systems in vulnerable areas, and enhancing adaptation capacity at district and community levels. Natural resource management requires a participatory approach to involve communities in planning, protection, and restoration activities. This involves establishing protected zones, conservation areas, and water protection zones while preventing chemical use and raising community awareness.

District Government's Priorities for the Next Five Years: (i) Mobilize resources for nature conservation, especially in establishing protected areas and water protection zones in 15 villages; (ii) Develop village-level rules to protect natural resources and conduct regular patrols; (iii) Protect at least two watersheds and demarcate and protect two more within five years; (iv) Engage with the private sector in sustainable resource management; (v) Review land planning and allocate land and forest areas to communities; (vi) Promote sustainable livelihoods in harmony with nature through reforestation and tree plantation in degraded areas. These initiatives aim to foster a resilient and sustainable socio-economic environment in Boun Neua District while preserving its natural resources.

2. Lah District, Oudomxay Province

Lah District, established in 1965, is located in Oudomxay Province and lies 28 km from Xay District, the provincial capital. The district covers an area of 1,917 km², accounting for 0.81% of the country's total area and 12.47% of the province's total area. It is bordered by Boun Tai and Khua Districts (Phongsaly Province) to the north, Xay District to the south, Nam Bark (Luang Prabang Province) to the east, and Namor and Xay (Oudomxay District) to the west. With 95% of its landscape being mountainous or upland areas, Lah District sits at an average elevation of 980 m above sea level, with the highest point at 1,571 m and the lowest at 389 m. The district experiences an average temperature of 20-23 degrees Celsius and receives 1,000 to 1,400 mm of rainfall annually.

In 2019, Lah District had a population of 18,155 across 3,383 households, with an average household size of 5 people and a population density of 9 people per km². The population is diverse, comprising 11 ethnic groups, including Lao (11.65%), Khmu (57%), Akha (28%), Hmong (3%), and other groups such as Taidam, Leu, Phou Noy, Hor, Yang, Iew Mian, and Mu Ser. The district has high literacy rates across various age groups: 99% for ages 6-14, 15-24, and 25-40, and 90% for those aged 41 and above. Lah District has one community hospital with 15 beds and six smaller hospitals with 12 beds each. Approximately 87% of the population has access to clean water, while 84% use household toilets; the remainder practices open defecation. The mortality rate for infants under one year old is 14 per 1,000 births.

In 2018, 26% of the district's population was considered poor. However, following disasters like flash floods in 2019-2020, it is estimated that more than 50% of the population now lives in poverty, though this information is based on consultation without formal references. Livelihoods in Lah District primarily involve rotating slash-and-burn cultivation, livestock rearing, and lowland rice cultivation. The district's forest cover is 41.4%, including 22,075 ha of production forest, 22,604 ha of protection forest, and 34,680 ha of protected areas. Slash-and-burn cultivation remains prevalent, with 62% of villages practicing this method over 1,170 ha of upland cultivation.

Climate Change and Natural Resource Management: Lah District is prone to natural disasters such as flash floods, droughts, and water shortages. These events pose significant threats to the district's agriculture and livelihoods, underscoring the need for integrated watershed management and sustainable land-use practices. Climate threats are exacerbated by significant environmental issues in the district, including biodiversity loss due to expanding cash crops and human-wildlife conflicts, particularly with wild elephants disturbing farmers' lands and habitats. This conflict is exacerbated by the disturbance of wildlife habitats in protected and forest areas. Efforts are needed to address these challenges and promote sustainable development in Lah District, balancing economic growth with environmental conservation and community well-being, to ensure long-term resilience of the district.

District Government's Priorities for the Next Five Years: (i) Raise awareness on the impact of climate change, and building resilience at communities' level, at least once a year; (ii) Increase the prevention, control and recovery of natural disasters by empower Disaster Management Committee at district level to be able to provide emergency support during disasters, flash flood; (iii) Monitore the level of river and continue collecting rainfall at least 1.150 mm/year; (iv) Strengthen legislation in climate change sector and disseminate to all revevant sectors at district level; (v) Promote nursery that be able to produce 4,000 seedlings per year, be able to restore forests up to 36 ha per year; (vi) Maintain forest coverage of the district at 70%; (vii) Continue allocating land and forest for at 20 villages, attracting more sustainable agricultural production; (viii) Demarcate protected areas, watershed areas at least two watersheds within districts, and (ix) Promote green growth and sustainable natural resource management for socio-economic development of the district.

3. Pha Xai District, Xieng Khuang Province

Located 27 km from Paek District, the capital of Xieng Khuang Province, Pha Xai District encompasses an area of 1,332 km², with over 60% of its landscape characterized by mountainous terrain. The district consists of 31 villages with 2,240 households and a total population of 12,555, including 6,155 females. The ethnic composition is predominantly Lao Loum (64%), followed by Hmong (32%) and Khmu (4%). The population density is relatively low at 10 persons/km², with a growth rate of 0.72%. Despite being a small district with a low population, Pha Xai has achieved an average economic growth of 7.1% over the past five years, with a GDP per capita of USD 1,215. Agriculture is the main economic activity, with 2,243 ha dedicated to rice paddies, yielding an average productivity of 3.5 tons/ha. Upland rice covers 342 ha, and maize production amounts to 180 tons annually. Efforts have been made to improve agricultural practices through training 255 farmers via the farm field school approach. Key livestock in the district includes buffalo, horses, fish, cows, goats, chickens, and ducks. The district exports 1,704 tons of rice annually and also cultivates coffee (600 kg from 15 ha), oranges (25 tons from 17 ha), and maize (180 tons from 30 ha).

Climate Change and Natural Resource Management: Pha Xai District faces several challenges, including climate change and natural disasters such as flash floods and soil erosion, which significantly impact villagers' livelihoods. Recurring droughts have adversely affected agricultural production. For instance, the district's unique rice variety, 'small chicken rice,' is highly valued but has suffered from climate change impacts, including droughts and floods. The district also grapples with low agricultural productivity and a low literacy rate compared to other districts.

Climate threats in the district are exacerbated by the degradation of watersheds. Predominant drivers of degradation is the absence of an integrated management plan, deforestation, and inadequate watershed protection, which has led to flash floods and water shortages during the dry season. Additionally, the district faces challenges related to low capacity among district and provincial authorities to implement sustainable practices, such as ecosystem-based solutions and sustainable agriculture. To address these challenges, the district aims to increase forest coverage to 70% of its total area. Investment in environmental protection, biodiversity, and integrated watershed management is being prioritized to combat climate change impacts.

District Government's Priorities for the Next Five Years: (i) Continue land and forest allocation efforts, and halt slash-and-burn cultivation practices in at least 13 villages; (ii) Support nursery operations capable of producing at least 3,000 seedlings per year; (iii) Develop stream/river basin management plans; (iv) Disseminate relevant policies and laws to communities and district authorities; (v) Manage non-timber forest products sustainably and developing regulations for communities; (vi) The district has designated 10,232 ha as protected/conservation areas, 29,336 ha as protection forest, and 9,833 ha as production forest.

Up to date, forest and land allocation have been completed for five villages, with plans to extend to two more villages. Restoration efforts have rehabilitated 648 ha of forest. Furthermore, raising awareness about climate change and its impacts is crucial for both villagers and authorities, as there is currently a lack of understanding of the issue. The district is focused on enhancing resilience and adaptation strategies to mitigate these challenges and promote sustainable development.

[1] Preserving the lifeline of Southeast Asia: the urgent call to protect the Mekong River Basin | Stories | WWF (worldwildlife.org)

[2] Water | Free Full-Text | Fish Community Responses to Human-Induced Stresses in the Lower Mekong Basin (mdpi.com)

[3] Evidence of Water Quality Degradation in Lower Mekong Basin Revealed by Self-Organizing Map | PLOS ONE

[4] Poumin et al. 2020. Sustainable Water Resource Development Scenarios and Water Diplomacy in the Lower Mekong Basin: Policy Implications. ERIA Discussion Paper Series. url: eria.org

[5] Trisurat, Y., Aekakkararungroj, A., Ma, Ho. *et al.* Basin-wide impacts of climate change on ecosystem services in the Lower Mekong Basin. *Ecol Res* **33**, 73–86 (2018). https://doi.org/10.1007/s11284-017-1510-z

[6] https://data.opendevelopmentmekong.net/

ANNEX D: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

(PIF level) Attach agency safeguard screen form including rating of risk types and overall risk rating.

Title
Lao_PIF_preSESP v12Sep2024_Clean

ANNEX E: RIO MARKERS

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
Significant Objective 1	Principal Objective 2	Significant Objective 1	No Contribution 0

ANNEX F: TAXONOMY WORKSHEET

Level 1	***Level 2***	***Level 3***	***Level 4***
X Influencing models			
	X Transform policy and regulatory environments		
	X Strengthen institutional capacity and decision-making		
	X Convene multi-stakeholder alliances		
	X Demonstrate innovative approaches		
	X Deploy innovative financial instruments		
X Stakeholders			
	X Indigenous Peoples		
	X Private Sector		
		Capital providers	
		Financial intermediaries and market facilitators	
		Large corporations	
		X SMEs	
		Individuals/Entrepreneurs	
		Non-Grant Pilot	
		Project Reflow	
	X Beneficiaries		
	X Local Communities		
	X Civil Society		
		X Community Based Organization	

		X Non-Governmental Organization	
		X Academia	
		Trade Unions and Workers Unions	
	X Type of Engagement		
		X Information Dissemination	
		X Partnership	
		X Consultation	
		X Participation	
	X Communications		
		X Awareness Raising	
		X Education	
		X Public Campaigns	
		X Behavior Change	
X Capacity, Knowledge and Research			
	Enabling Activities		
	X Capacity Development		
	X Knowledge Generation and Exchange		
	Targeted Research		
	X Learning		
		X Theory of Change	
		X Adaptive Management	
		X Indicators to Measure Change	
	X Innovation		
	X Knowledge and Learning		
		X Knowledge Management	
		X Innovation	
		X Capacity Development	
		X Learning	
	X Stakeholder Engagement Plan		
X Gender Equality			
	X Gender Mainstreaming		
		X Beneficiaries	
		X Women groups	
		X Sex-disaggregated indicators	
		Gender-sensitive indicators	
	X Gender results areas		
		X Access and control over natural resources	
		X Participation and leadership	
		X Access to benefits and services	
		X Capacity development	
		X Awareness raising	
		X Knowledge generation	
X Focal Areas/Theme			
	Integrated Programs		
		Commodity Supply Chains ([1]79Good Growth Partnership)	
			Sustainable Commodities Production
			Deforestation-free Sourcing
			Financial Screening Tools
			High Conservation Value Forests
			High Carbon Stocks Forests

			Soybean Supply Chain
			Oil Palm Supply Chain
			Beef Supply Chain
			Smallholder Farmers
			Adaptive Management
		Food Security in Sub-Sahara Africa	
			Resilience (climate and shocks)
			Sustainable Production Systems
			Agroecosystems
			Land and Soil Health
			Diversified Farming
			Integrated Land and Water Management
			Smallholder Farming
			Small and Medium Enterprises
			Crop Genetic Diversity
			Food Value Chains
			Gender Dimensions
			Multi-stakeholder Platforms
		Food Systems, Land Use and Restoration	
			Sustainable Food Systems
			X Landscape Restoration
			Sustainable Commodity Production
			Comprehensive Land Use Planning
			X Integrated Landscapes
			Food Value Chains
			Deforestation-free Sourcing
			Smallholder Farmers
		Sustainable Cities	
			Integrated urban planning
			Urban sustainability framework
			Transport and Mobility
			Buildings
			Municipal waste management
			Green space
			Urban Biodiversity
			Urban Food Systems
			Energy efficiency
			Municipal Financing
			Global Platform for Sustainable Cities
			Urban Resilience
	X Biodiversity		
		X Protected Areas and Landscapes	
			Terrestrial Protected Areas
			Coastal and Marine Protected Areas
			X Productive Landscapes
			Productive Seascapes
			X Community Based Natural Resource Management
		X Mainstreaming	
			Extractive Industries (oil, gas, mining)
			Forestry (Including HCVF and REDD+)
			Tourism

			X Agriculture & agrobiodiversity
			Fisheries
			Infrastructure
			Certification (National Standards)
			Certification (International Standards)
		Species	
			Illegal Wildlife Trade
			Threatened Species
			Wildlife for Sustainable Development
			Crop Wild Relatives
			Plant Genetic Resources
			Animal Genetic Resources
			Livestock Wild Relatives
			Invasive Alien Species (IAS)
		Biomes	
			Mangroves
			Coral Reefs
			Sea Grasses
			Wetlands
			Rivers
			Lakes
			Tropical Rain Forests
			Tropical Dry Forests
			Temperate Forests
			Grasslands
			Paramo
			Desert
		X Financial and Accounting	
			Payment for Ecosystem Services
			Natural Capital Assessment and Accounting
			Conservation Trust Funds
			X Conservation Finance
		Supplementary Protocol to the CBD	
			Biosafety
			Access to Genetic Resources Benefit Sharing
	Forests		
		Forest and Landscape Restoration	
			REDD/REDD+
		Forest	
			Amazon
			Congo
			Drylands
	X Land Degradation		
		X Sustainable Land Management	
			Restoration and Rehabilitation of Degraded Lands
			Ecosystem Approach
			Integrated and Cross-sectoral approach
			Community-Based NRM
			Sustainable Livelihoods
			Income Generating Activities
			X Sustainable Agriculture

			Sustainable Pasture Management
			X Sustainable Forest/Woodland Management
			Improved Soil and Water Management Techniques
			Sustainable Fire Management
			Drought Mitigation/Early Warning
		Land Degradation Neutrality	
			Land Productivity
			Land Cover and Land cover change
			Carbon stocks above or below ground
		Food Security	
	International Waters		
		Ship	
		Coastal	
		Freshwater	
			Aquifer
			River Basin
			Lake Basin
		Learning	
		Fisheries	
		Persistent toxic substances	
		SIDS : Small Island Dev States	
		Targeted Research	
		Pollution	
			Persistent toxic substances
			Plastics
			Nutrient pollution from all sectors except wastewater
			Nutrient pollution from Wastewater
		Transboundary Diagnostic Analysis and Strategic Action Plan preparation	
		Strategic Action Plan Implementation	
		Areas Beyond National Jurisdiction	
		Large Marine Ecosystems	
		Private Sector	
		Aquaculture	
		Marine Protected Area	
		Biomes	
			Mangrove
			Coral Reefs
			Seagrasses
			Polar Ecosystems
			Constructed Wetlands
	Chemicals and Waste		
		Mercury	
		Artisanal and Scale Gold Mining	
		Coal Fired Power Plants	
		Coal Fired Industrial Boilers	
		Cement	
		Non-Ferrous Metals Production	
		Ozone	
		Persistent Organic Pollutants	
		Unintentional Persistent Organic Pollutants	
		Sound Management of chemicals and Waste	

		Waste Management	
			Hazardous Waste Management
			Industrial Waste
			e-Waste
		Emissions	
		Disposal	
		New Persistent Organic Pollutants	
		Polychlorinated Biphenyls	
		Plastics	
		Eco-Efficiency	
		Pesticides	
		DDT - Vector Management	
		DDT - Other	
		Industrial Emissions	
		Open Burning	
		Best Available Technology / Best Environmental Practices	
		Green Chemistry	
	X Climate Change		
		X Climate Change Adaptation	
			Climate Finance
			X Least Developed Countries
			Small Island Developing States
			Disaster Risk Management
			Sea-level rise
			X Climate Resilience
			X Climate information
			X Ecosystem-based Adaptation
			Adaptation Tech Transfer
			National Adaptation program of Action
			National Adaptation Plan
			X Mainstreaming Adaptation
			X Private Sector
			X Innovation
			Complementarity
			X Community-based Adaptation
			X Livelihoods
		Climate Change Mitigation	
			X Agriculture, Forestry, and other Land Use
			Energy Efficiency
			Sustainable Urban Systems and Transport
			Technology Transfer
			Renewable Energy
			Financing
			Enabling Activities
		Technology Transfer	
			Poznan Strategic program on Technology Transfer
			Climate Technology Centre & Network (CTCN)
			Endogenous technology
			Technology Needs Assessment
			Adaptation Tech Transfer
		United Nations Framework on Climate Change	

			X Nationally Determined Contribution
			X Paris Agreement
			Sustainable Development Goals
		X Climate Finance (Rio Markers)	*Climate Change Mitigation 0*
			X Climate Change Mitigation 1
			Climate Change Mitigation 2 *Climate Change Adaptation 0*
			Climate Change Adaptation 1
			X Climate Change Adaptation 2

[1]