



CAPACITY NEEDS ASSESSMENT REPORT

Support for Mainstreaming Climate Change
Adaptation into Sectoral Planning in Lao PDR

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Contents

LIST OF ACRONYMS	v
GLOSSARY	vii
EXECUTIVE SUMMARY	ix
1. INTRODUCTION	14
1.1. Country Context and Project Background	14
1.2. Objectives	17
1.3. Approach and Methodology	17
1.3.1. Desk-based and Literature Review	18
1.3.2. Data Collection	19
1.3.3. Data Analysis	21
1.4. Principles for Stakeholder Engagement, Gender Equality and Social Inclusion	22
2. CAPACITY NEEDS ASSESSMENT	24
2.1 Enabling Environment	24
2.1.1 Climate Change Policy and Legal Framework Review	24
2.1.2 Sectoral Legislation and Policy Framework Review	28
2.1.3 Enabling Environment Capacity Assessment	32
2.2 Institutional Level Capacity	46
2.2.1 Institutional Framework Review on Climate Change	47
2.2.2 Institutional Level Capacity Assessment	56
2.3 Individual Level Capacity	78
2.3.1 Individual Level Capacity Assessment	78
3. RECOMMENDATIONS AND CONCLUSION	92
3.1 Recommendations	92
3.2 Conclusion	97
REFERENCE LIST	99
Appendix 1: List of Interviewees and Data Collection Workshop Participants	101
Appendix 2: List of Survey Respondents	103
Appendix 3: Survey Questionnaire Data Analysis	105
Appendix 4: A review of sectoral policies and plans, climate change consideration and indicators	121
Appendix 5: Recent and on-going climate change adaptation projects and activities	134
Appendix 6: Interview questions	140

Appendix 7: Survey questionnaire 142

List of Tables

Table 1: Project overview	17
Table 2: List of project related documents and sectoral strategies/plans	18
Table 3: Key stakeholders for the data collection.....	20
Table 4: Capacity assessment levels and key areas.....	22
Table 5: List of CCA and DRM policies, plans and legal documents	24
Table 6: Roles and responsibilities of the key stakeholders involved in the climate change adaptation	51
Table 7: List of recommendations.....	92

List of Figures

Figure 1: Assessment Process	18
Figure 2: Gender.....	32
Figure 3: Highest educational attainment.....	32
Figure 4: Primary role and responsibility.....	32
Figure 5: Climate change experience.....	33
Figure 6: Climate change adaptation planning experience	33
Figure 7: Existing policies, plans and strategies related to climate change	33
Figure 8: Legislation instruments including laws and decrees	33
Figure 9: Climate change mainstreaming in the sectoral policies and plans.....	33
Figure 10: Clear policies and guidelines for climate change mainstreaming	34
Figure 11: Overall effectiveness of sectoral offices in implementing climate change related policies and plans	34
Figure 12: Climate change related policies and plans clearly communicated and disseminated	34
Figure 13: Budget allocation for climate change related activities.....	34
Figure 14: Types of budget allocation	34
Figure 15: Budget allocation sufficiency for climate change activities	34
Figure 16: Budget allocation for capacity building program on climate change.....	35
Figure 17: Overall effectiveness in managing budget to the capacity building program	35
Figure 18: Organizational structure of natural resources and environment offices at different levels.....	49
Figure 19: Environment Committee structure at different levels.....	49
Figure 20: Climate change adaptation related programs, projects or activities being implemented ...	56
Figure 21: Overall effectiveness of sectoral department in managing projects related to climate change	56
Figure 22: Staff capability in implementation of climate change related projects	56
Figure 23: Existing database systems related to sectors or climate change	57
Figure 24: Accessibility to information or database on climate change to support decision-making..	57
Figure 25: Overall effectiveness of sectoral departments in managing knowledge and information..	57
Figure 26: Existing institutional mechanisms for the involvement of multiple stakeholders.....	57
Figure 27: Overall effectiveness of sectoral departments in coordination with other stakeholders...	57
Figure 28: Staff competence in sectoral departments in coordination and partnering with other stakeholders.....	57

Figure 29: Social inclusion in the consultation process or activities	58
Figure 30: Female staff encouragement in the consultation or capacity development programs	58
Figure 31: Gender inclusion mainstreaming in sector plans and policies	58
Figure 32: Existing M&E system/mechanism in place for climate change activities.....	58
Figure 33: Guideline providing for M&E of climate change activities.....	58
Figure 34: Overall effectiveness of sectoral offices on performing M&E	59
Figure 35: Training opportunity provisions on M&E	59
Figure 36: Staff competency in analysis of climate modelling, CRVA, and provision of information on hazards.....	78
Figure 37: Existing capacity development program/plan for staff on climate change areas	78
Figure 38: Overall effectiveness of sectoral offices in implementing capacity development programs	78
Figure 39: Capacity need assessment/analysis conducting for staff	79
Figure 40: Staff competency in climate related tools using	79
Figure 41: Training provisions to the staff on climate change adaptation	79
Figure 42: Needed activities to improve staff capacity	79
Figure 43: Existing training manual/toolkit on climate change	79
Figure 44: Preferred number of training days	80
Figure 45: Preferred training delivery modes.....	80
Figure 46: Level of staff knowledge on climate change topics	81
Figure 47: Preferred training areas and topics on climate change	81

LIST OF ACRONYMS

AE	Accredited Entity
CA	Concession Agreement
CCA	Climate Change Adaptation
CRVA	Climate Risk and Vulnerability Assessment
CSO	Civil Society Organization
DCC	Department of Climate Change
DDW	Department of Development in Women
DOE	Department of Environment
DOE	Department of Ethnicity
DPC	Department of Planning and Cooperation
DPF	Department of Planning and Finance
DMH	Department of Meteorology and Hydrology
DWR	Department of Water Resources
DOL	Department of Land
DPC	Department of Planning and Cooperation
DOA	Department of Agriculture/Department of Activity
DALAM	Department of Agriculture Land Management
DEPP	Department of Energy Policy and Planning
DLF	Department of Livestock and Forestry
DOI	Department of Irrigation
DOF	Department of Forestry
DHUP	Department of Housing and Urban Planning
DOR	Department of Roads
DOT	Department of Transport
DOW	Department of Waterways
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DWS	Department of Water Supply
DOP	Department of Planning
DIC	Department of International Cooperation
DHHP	Department of Hygiene and Health Promotion
DSB	Department of State Budget
DMC	Disaster Management Committee
DONRE	District Office of Natural Resources and Environment
EPF	Environment Protection Fund
EIA	Environment Impact Assessment
GGGI	Global Green Growth Institute
GCF	Green Climate Fund
GoL	Government of Lao PDR
GEF	Global Environment Facility
GESI	Gender Equality and Social Inclusion
GHG	Greenhouse Gas
IWRM	Integrated Water Resources Management
IEE	Initial Environment Examination
Lao PDR	Lao People's Democratic Republic
LNMCs	Lao National Mekong Committee Secretariate
LWU	Lao Women Union
LYU	Lao Youth Union
LFND	Lao Front for National Development
NAP	National Adaptation Plan
NAPA	National Adaptation Programme of Action
NSCC	National Strategy on Climate Change
NSEDP	National Socio-Economic Development Plan
NDC	Nationally Determined Contribution
NDA	National Designated Authorities

NEC	National Environment Committee
NSCCC	National Steering Committee on Climate Change
NAFRI	National Agriculture and Forestry Research Institute
NWMS	National Water Management Strategy
MONRE	Ministry of Natural Resources and Environment
MAF	Ministry of Agriculture and Forestry
MEM	Ministry of Energy and Mines
MPWT	Ministry of Public Works and Transport
MPI	Ministry of Planning and Investment
MOF	Ministry of Finance
PIU	Project Implementation Unit
PWTI	Public Works and Transport Institute
PONRE	Provincial Office of Natural Resources and Environment
SEP	Stakeholder Engagement Plan
TOR	Terms of Reference
TOT	Training of Trainer
UNEP	United Nations Environment Programme
UN-Habitat	United Nations Human Settlements Programme
UNDP	United Nations Development Programme

GLOSSARY

- 1) **Climate** – is usually defined as the ‘average weather’, or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period of time is 30 years, as defined by the World Meteorological Organization (WMO). These quantities are most often surface variables such as temperature, precipitation, and wind.
- 2) **Climate Change** – means an increase in the average temperatures on Earth’s surface, exceeding the normal temperature ranges in the long term, caused by direct or indirect human actions or by nature, and resulting in changes to atmospheric composition.
- 3) **Climate Change Adaptation** – refers to the process of adjustment by humans, animals, vegetation, ecosystems, infrastructure, and urban developments to build resilience to climate change and minimize climate impacts by implementing appropriate measures to reduce potential vulnerability, risk, and damage.
- 4) **Vulnerability** – refers to sensitivity and inability to cope with the impacts of climate change.
- 5) **Climate Risk** – are additional (exacerbated) risks that people and their livelihoods and assets face due to climate change. These risks can be direct, such as in exposure to more frequent heat waves or floods; or indirect, such as when a drought negatively impacts food supplies (and prices) and in effect livelihoods and nutrition.
- 6) **Climate Extreme** – refers to the occurrence of a value of a weather or climate variable above (or below) a threshold value near the upper (or lower) ends of the range of observed values of the variable. For simplicity, both extreme weather events and extreme climate events are referred to collectively as ‘climate extremes.
- 7) **Resilience** – means an ability to respond to impacts and restore to a normal situation by/of communities, societies, infrastructure, and ecosystems.
- 8) **Climate Modelling** – means using statistical analysis of physical, chemical, and biological datasets to research and study climate change, including periodic assessment and prediction of climate impacts.
- 9) **Climate Projection** – refers to the calculated response of the climate system to emissions or concentration scenarios of greenhouse gases and aerosols, or radiative forcing scenarios, often based on simulations by climate models.
- 10) **Climate Scenario** – means a plausible and often simplified representation of the future climate, based on an internally consistent set of climatological relationships and assumptions of radiative forcing, typically constructed for explicit use as input to climate change impact models.
- 11) **Greenhouse Gas (GHG)** – mean gases, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆), that are emitted into the atmosphere from the natural environment or human actions and which result in global warming and climate change. Greenhouse gases are particularly emitted from fuel consumption, forest and land use changes, and waste production and disposition.
- 12) **Mitigation** – means the process of reducing greenhouse gas emissions and enhancing carbon sinks.
- 13) **Climate Finance** – refers to climate specific supports and financial mechanisms for climate change mitigation and adaptation activities to enable the transitions towards low-carbon, climate-resilient growth and sustainable development through capacity building, technology transfer, and economic development.
- 14) **Impact** – refer to effects on natural and human systems of physical events, of disasters, and of climate change.
- 15) **Hazard** – refers to a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
- 16) **Disaster** – is a man-made or natural catastrophe that causes severe danger and extensive damage to health, life, assets, the economy and livelihoods of the people in society, both in short-term and long-term horizons.

- 17) **Drought** – refers to a phenomenon that exists when precipitation is significantly below normal recorded levels, causing serious hydrological imbalances that often adversely affect land resources and production systems.
- 18) **Flood** – refers to the overflowing of the normal confines of a stream or other body of water, or the accumulation of water over areas that are not normally submerged.

EXECUTIVE SUMMARY

This assessment report is part of a project financed by the Green Climate Fund (GCF) titled "Support for Mainstreaming Climate Change Adaptation into Sectoral Planning in Lao PDR." The report aims to provide concise information on capacity needs assessment, focusing specifically on the context of mainstreaming climate change adaptation within sectoral government entities of Lao PDR. Building on prior scoping work, the report reviews and assesses relevant policies, legal frameworks, stakeholder roles, mandates, and the existing capacity of key stakeholders concerning agriculture and forestry, urban development, water resources, as well as other cross cutting agencies involved in climate change adaptation including Lao Women's Union, Lao Youth Union and Lao Front for National Development. Additionally, it identifies key capacity deficiencies, gaps, challenges, as well as priority capacity needs for the sectoral stakeholders. This report has employed an in-depth desk review as well as a preliminary set of surveys and interviews to arrive at certain key findings, which are summarized below:

Enabling environment: The review and assessment indicate significant progress in various sectors regarding the development of policy and legal frameworks for climate change adaptation. This progress includes the creation of laws and strategies such as the Law on Forestry, Law on Water and Water Resources, Law on Disaster Management, Law on Waterway, Law on Irrigation, Law on Environment Protection, Decree on Climate Change, National Strategies on Forestry, Agriculture, Climate Change, Water and Water Resources, River Basin Management Plans, and Policy on Sustainable Hydropower Development, among others. Some sectoral offices have successfully mainstreamed climate change into their policy framework, including DOA, DOF, DHUP, DWR, and DMH. However, some offices still face financial resource constraints for developing and implementing climate change-related policies and plans, and others lack technical staff and adequate technical knowledge among existing staff, posing challenges for mainstreaming climate change adaptation into the sectoral plans. Additionally, most offices have not established financial mechanisms. Consequently, funding for capacity development activities on climate change is still significantly required for sectoral offices. Nevertheless, capacity development, including training activities on various topics on climate change adaptation mainstreaming and planning for the relevant staff, is needed.

Institutional level capacity: Lao PDR has a comprehensive and progressive institutional framework, with national agencies established to support cross-sectoral collaboration for climate change work. Key departments related to climate change within the Ministry of Natural Resources and Environment (MONRE) include the Department of Climate Change (DCC), the Department of Meteorology and Hydrology (DMH), the Department of Water Resources (DWR), and others. Additionally, sectoral offices/departments, such as Department of Planning and Cooperation (DPC, MONRE), Department of Agriculture (DOA), Department of Forestry (DOF), Department of Irrigation (DOI), National Agriculture and Forestry Research Institute (NAFRI), Department of Housing and Urban Planning (DHUP), and Public Works and Transport Institute (PWTI), have institutional mandates and roles regarding climate change adaptation and DRM for their departments. Some specific staff have also been assigned for climate change-related work in certain departments. Most sectoral offices have clear roles and mandates for their sector work and have developed cross-sectoral coordination mechanisms, such as the National Disaster Management Committee, National Environment Committee, Sectoral Working Group on Agriculture, Forestry, and Rural Development, and Technical Working Groups on Climate Change, among others. Many offices, such as DWR, DMH, NAFRI, and EPF, are making progress in developing database management systems and platforms (websites) for sharing and consolidating information within their departments. However, insufficiency in financial capacity, as well as a lack of human capacity (both technical knowledge and understanding of climate change), pose challenges for institutional arrangements (coordination and M&E) in most departments. Therefore, developing the capacity of relevant staff with in-depth knowledge and understanding of climate change, improving data management and sharing systems, providing tools and equipment for monitoring climate change and DRM work, and ensuring sufficient funding for activity implementation are the most needed improvements for the sectoral offices.

Individual level capacity: The assessment revealed that staff in most sectors have participated in relevant climate change training activities. While many of them have their own capacity programs and plans developed for their offices supported by various projects, some have not established a capacity development program, relevant guidelines, or manuals for climate change planning and mainstreaming, such as DPC, DOA, DOR, DOE, and EPF. Insufficient financial resources for capacity development remain a challenge, as most financial support comes from external projects with limited durations. Challenges such as lack of regular capacity development trainings, staff turnover, scarcity of training opportunities, insufficient staff with in-depth knowledge and expertise in climate change adaptation and planning, as well as equipment deficiencies, continue to pose challenges. The agriculture and forestry sectoral offices require more in-depth training provisions, particularly long-term or intensive courses covering various climate change topics such as CRVA, disaster response, and climate modeling development. Similarly, offices in the urban development sector require technical capacity development for their staff, including regular and frequent training on climate change basic knowledge, adaptation approaches, and adaptation planning, as well as providing best practices on climate change adaptation applicable for Lao PDR. The water resource sector and other key departments have indicated the need for intensive and in-depth training covering various climate change adaptation areas such as CRVA, focusing on the community level, enhancing staff to pursue higher degrees both in-country and overseas, as well as promoting research and study capacity of staff on climate change adaptation within the water sector.

Gender equality and social inclusion (GESI): several policies and legal instruments are in place related to climate change, such as the Decree on Climate Change, National Strategy on Climate Change, and Nationally Determined Contribution (NDC), addressing both mitigation and adaptation. However, these documents do not explicitly mention gender roles or equality principles, focusing primarily on technical aspects rather than human impacts. The NDC 2021 lacks references to equality and non-discrimination principles, with limited integration of gender indicators. With regard to institutional level analysis, relevant organizations like Lao Women Union, Lao Youth Union, and Lao Front for National Development are actively engaged in promoting gender equality and social inclusion, but face challenges including limited financial capacity and lack of specialized staff. These organizations emphasize the need for staff training, ownership of climate-related projects, and securing adequate budgets for successful project implementation. Staff from these organizations stress the importance of intensive climate change training workshops and the development of communication tools for effective awareness-raising and campaign promotion activities within local communities.

Recommendation: To improve the enabling environment, institutional and individual-level capacity for developing and implementing relevant policies and plans, as well as enhancing climate change adaptation mainstreaming into the sectoral plans, essential action needs are summarized in the table below:

Enabling Environment	• Enhance climate change mainstreaming into the relevant policies and plans of sectors. • Develop plans related to climate change adaptation, including the development of medium- and long-term Emergency and Response Plans for Droughts and Floods for all sectors, aligning with the development plans of relevant ministries. • Improve coordination of departments within line ministries on climate change by developing relevant coordination mechanisms at both policy and technical levels. This could involve establishing platforms for information exchange, joint training programs, and coordinated efforts in mainstreaming climate change adaptation across different sectors. • Allocate sufficient budget to enhance the climate change mainstreaming into the relevant policies and plans within sectors. This could involve budgetary adjustments or seeking external funding through grants or partnerships with relevant organizations. • Ensure providing sufficient budget for the relevant activities, including climate-related policy development.
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	• Provide more funding for capacity development activities of the relevant sectors on policy development, including Training of Trainer (ToT) provisions for the relevant staff. • Enhance cooperation with international partners and organizations for research work to adopt applicable technology and best practices, such as climate-resilient varieties and climate-smart agriculture techniques, in Lao PDR. • Develop the capacity of staff, including training provisions on climate change adaptation for staff at both policy-making and technical levels. • Define clear roles and mandates on climate change among divisions, including clear roles and responsibilities on project implementation regarding climate change. • Ensure the continuation of training provisions, including training on writing proposals to access relevant funds for climate change. • Enhance mandates development with regard to climate change in divisions and offices within sectors. • Develop guidelines and manuals on climate change mainstreaming into the sectoral and local plans, as well as provide training on climate change mainstreaming for the relevant staff in different sectors. • Disseminate the developed policies and plans on climate change, such as the climate change strategy and NDC, to various government entities.
Institutional Level	• Build the capacity of the staff to have in-depth knowledge and understanding of climate change adaptation, including research and studies on adaptation measures. • Ensure provisions of tools and equipment for monitoring climate change-related work to provide timely alerts in case of emergency events. • Provide training for the relevant staff on climate change adaptation and project management to enhance effective project implementation. • Develop an insurance mechanism for the agriculture sector to ensure reparation cost for farmers after disaster events. • Ensure sufficient budget from different sources for offices in climate change-related projects and activity implementation, especially research work on climate resilience for agriculture, forestry, rural development, and water resources. • Develop a coordination mechanism for climate-related projects to ensure regular exchange of progress updates on project implementation and seek synergies among project partners. • Develop internal staff to become specific experts such as climate change researchers for the agriculture and water resource sector. • Enhance ownership of offices in relevant project and activity implementation, such as capacity building activities. • Enhance coordination and partnership among sectors, government entities, and development partners involved in climate change initiatives. • Develop a database or information management system on climate change adaptation within the offices responsible for climate change. • Develop the capacity of the relevant staff in developing database systems and improving data sharing platforms. • Develop the capacity of the relevant staff in various topics covering climate resilience, meteorology, and hydrology areas, including tool utilization in data collection, managing the database system, and monitoring tools for meteorological and hydrological work. • Improve staff turnover issues by ensuring the continuation of staff participation in activities within offices.

	• Improve internal processes and procedures for project approval within departments, which cause delays in project and activity implementation. • Encourage other sectors involved in climate change activities, especially the private sector and external civil society organizations. • Encourage female staff within the relevant offices to participate in capacity development and consultation activities on climate change adaptation. Encourage increased participation of female staff, aiming for representation of at least 50% or more within the relevant offices, in capacity development and consultation activities focused on climate change adaptation. • Increase the female staff ratio in particular roles and positions on climate change within the relevant offices, aiming at least 50 %. • Increase female representation in climate change-related committees from the relevant sectors, aiming at least 50 %.
Individual Level	• Provide more in-depth training, particularly long-term or intensive courses, covering topics such as climate change adaptation, mainstreaming, CRVA, climate modeling, database management, M&E, climate change, and disaster response – such as early warning systems – before and after disaster events. • Provide particular climate change adaptation approaches training, including Ecosystem-based Adaptation (EbA) and Nature-based Adaptation (NbA) approaches, and Climate Smart Agriculture (CSA), and best practices of these approaches from other countries with similar country contexts to Lao PDR. • Provide more opportunities for staff on climate finance training as well as capacity in accessing climate funds. • Build the technical capacity of staff by providing on-the-job training on various tools and software utilization, including particular programs and software on climate change risk assessment, technical approach on climate change adaptation determinants, and climate change adaptation planning. • Develop capacity development plans and programs as well as technical training manuals on climate change risk management and planning for different sectors. • Appoint particular staff for climate change projects and capacity development activities, as well as participating in the training workshops, to ensure the continuation of staff training participation. • Provide experience exchange activities for high-level officials, such as study visits in the country or overseas. • Develop guidelines on climate change adaptation measures and M&E for sectors. • Ensure capacity-building activities are provided regularly and frequently to the relevant staff. • Provide sufficient budget for capacity development activities, including toolkit and training manuals development for staff. • Improve climate change information sharing and dissemination channels for staff within offices. • Disseminate best practices on climate change adaptation for staff as case studies. • Promote staff to further study in higher degrees, such as Master's or Doctoral degrees, as well as develop the capacity of the relevant staff in accessing scholarships from both internal and external funding providers. • Improve language skills and project management capacity of staff, including financial management and planning of the project, report, and email writing for those who work directly with projects and development partners.

	• Develop the capacity of staff in the short and long term for collecting and reporting hydrological data in both quantity and quality aspects. • Ensure the continuation of training provisions to ensure the uptake of climate change knowledge. Trainers should be national experts from its organization or the third party specializing in the relevant field. • Seek financial support from development partners and the government for capacity-building and awareness-raising initiatives activities, fostering sector ownership.
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1. INTRODUCTION

1.1. Country Context and Project Background

Lao People's Democratic Republic (PDR) is a landlocked country stretching along the Mekong River in the mainland Southeast Asia with an area of 236,800 square kilometers and a population of about 6.5 million in 2015. Approximately 80% of the population is rural agrarian and heavily rely on the nature and environment for their livelihoods.¹ Climate change presents Lao PDR with significant challenges as current natural disasters are being exacerbated by increased climate variability. According to the Government report, Lao PDR remains highly vulnerable to climate change.² Given the vulnerability of the population and its geographical location, the country ranks 42nd among those most vulnerable to climate-change induced floods.³ It is projected that Lao PDR will face temperature increases of 3.6°C by the 2090s against the baseline conditions over 1986–2005, under the highest emissions pathway (RCP8.5), with similar projected rates of warming for all seasons. The rise in annual maximum and minimum temperatures are expected to be more rapid than the rise in average temperature and will likely amplify pressure on human health, livelihoods, and ecosystems.⁴ Some studies indicate that similar warming is likely to occur across all regions, while others suggest that the country's southern climatic zone will experience smaller warming than the northern and north central zones.⁵

Climate change has exposed the Lao PDR to a wide range of climate-related hazards over the past few decades, including severe and frequent floods and droughts.⁶ The occurrence of extreme weather events in Lao PDR has seen a significant rise, shifting from once every two years prior to 1992 to annually or even biannually post-1992. Interestingly, nearly 75% of all disasters in Lao PDR are climate-related causes. Alongside heavy rainfall, the country also grapples with tropical storms, which are anticipated to escalate in intensity. From 1966 to 2009, flooding emerged as the most frequent climate change hazard, followed by epidemics like dengue, cholera, diarrhea, and avian influenza (H5N1), then storms and drought. The Ministry of Health recently reports that there has been an increase in phenomena related to PM2.5 that have resulted in respiratory diseases in Lao PDR. In addition, there is an outbreak of COVID-19 from 2020-2022. In addition, there are effects from heat waves and mental health problems from climate-related disasters.⁷

According to the recent report, with reference to the extreme events that have occurred over the past three decades, both the frequency and intensity of floods and drought have been observed to have increased often associated with typhoons and tropical storms.⁸ Specifically, flooding in the Mekong River basin is a frequent occurring process that brings the negative impacts of loss and damage to infrastructure, human lives and properties. The complex hydrological system of the basin means that rainfall in different parts of the catchment can result in varying downstream effects, and local floodplains play a key role in mitigating flood waters. From 1970 to 2010, for example, there were 33 extreme events occurred, mostly floods, affecting almost 9 million people and causing economic loss and damages of over USD 400 million.⁹ In 2008, floods affected more than 200,000 people and 75,000 hectares of agricultural land. Another severe flood occurred in 2011, causing a loss of US\$200 million, and were followed by a series of flood events in 2013, which were caused by different weather systems occurred in different locations of the country. It was estimated that 395,000 people affected and over 20 lives were lost in 12 affected provinces.¹⁰ Later in 2018, the tropical Storm Son-Tinh caused heavy rains and flooding in 55 districts of 13 provinces across the country, and torrential rain overwhelmed a dam in

¹ UNFPA (2015). Result of Population and Housing Census 2015. https://lao.unfpa.org/sites/default/files/pub-pdf/PHC-ENG-FNAL-WEB_0.pdf

² GoL (2009). NATIONAL ADAPTATION PROGRAMME OF ACTION TO CLIMATE CHANGE: LAO PDR.

³ Vientiane Times (2018). Lao ranked 42nd the most vulnerable country to climate change. <https://laotiantimes.com/2018/07/10/laos-ranked-42nd-vulnerable-country-climate-change/#:~:text=Laos%20has%20been%20ranked%20as,with%20flooding%20in%20Phongsaly%20province.>

⁴ World Bank (2021). Climate Risk Country Profile: Lao PDR. Retrieved from <https://climateknowledgeportal.worldbank.org/sites/default/files/2021-06/15505-Lao%20PDR%20Country%20Profile-WEB.pdf>

⁵ ADB (2023). Climate Risk and Vulnerability Assessment: Climate-friendly Agribusiness Value Chains Sector Project

⁶ ADB. (2019). Disaster Risk Assessment: Lao PDR Sustainable Rural Infrastructure and Watershed Management Sector Project

⁷ MONRE (2023). Lao PDR National Adaptation Plan (NAP): Third Draft

⁸ GoL (2018). Post Disaster Needs Assessment (PDNA) 2018 Floods. <https://laopdr.un.org/en/12913-2018-floods-post-disaster-needs-assessment>

⁹ World Bank (2011). Climate Risk and Adaptation Country Profile: Lao PDR Vulnerability, Risk Reduction, and Adaptation to Climate Change.

¹⁰ <https://www.reuters.com/article/us-Lao-PDR-floods/floods-in-Lao-PDR-kill-20-damage-rice-crops-idUSBRE97R0BB20130828>

Attapeu Province, causing flash floods.¹¹ Some of those provinces, in central and southern Lao PDR, were also affected by Tropical Storm Podul and Tropical Depression Kajiki in 2019, resulting in damage estimated at US\$164 million.¹² The damages associated with floods are expected to rise by a factor of 5-10 annually given the rate of proposed and existing development in the Mekong River basin, often in the floodplain areas.¹³

In addition to floods, Lao PDR is also very susceptible to droughts. Especially the urban communities of Lao PDR in the Mekong basin face seasonal droughts. There were five major drought events (1998; 2003; 2005; 2010; and 2019) in the last 40 years, affecting over three million people. In 1998, Lao PDR experienced a severe drought, and the temperature was significantly higher during the dry season. In total, 750,000 people were affected. Another severe drought occurred in 2003 as a result of climate change in the region.¹⁴ According to the World Bank report, drought events from 2005 were accompanied by an irregular increase in temperature. Localized droughts are likely to affect both household crop production and food security.¹⁵ In 2010, extreme droughts during the normal rainy months between May and October severely affected the year's harvest and created life-threatening food shortages in southern Lao PDR, affecting around 85,000 people.¹⁶ This drought took place after Typhoon Ketsana, which damaged agricultural land, housing and infrastructure especially in the southern provinces and was responsible for economic loss of US\$58 million.¹⁷ Nationwide, it is anticipated that the dry seasons will extend, leading to droughts that are more severe and occur more frequently.¹⁸ Although there is a forecasted increase in the frequency of droughts, more detailed projections require further research. Lao PDR experienced drought in the years 2015, 2016, and 2019.¹⁹ More particularly in 2019, a shortened monsoon season has led to severe drought conditions and brought the water levels of the Mekong to their lowest point in 60 years, threatening agricultural productivity across the lower Mekong River basin.²⁰ Recent studies have also revealed a strong correlation between drought and El Niño–Southern Oscillation (ENSO) events.²¹ Remarkably, 71 percent of both flood or drought events in Lao PDR have coincided with ENSO events.²²

In short, increases in temperature and the prolonged dry season are expected to accelerate the intensity of droughts and increase water stress, particularly in cultivated areas. The severity and frequency of floods and droughts triggered by climate change, are thus likely to affect both household crop production and food security in the Lao PDR.²³

To address this, the Government of Lao PDR (GoL) has committed to tackle climate change in a comprehensive manner, aiming at reducing the effects of natural shocks for a more sustainable natural resources management. The GoL developed the first Nationally Determined Contribution (NDC) in 2015 and updated it in 2021, which includes strong defined adaptation and mitigation activities to be implemented towards 2030, including the implementation of climate change action plans in order to develop and implement effective, efficient and economically viable climate change mitigation and adaptation measures.²⁴ However, the report on the progress of the climate change adaptation component remains challenges due to the absence of clear adaptation plan, targets and indicators in many key sectors. The public health is only the sector that is progressive in defining the quantitative indicators for measurement, reporting and verification of the progress on increasing the resilience

¹¹ GoL (2018). Post Disaster Needs Assessment (PDNA) 2018 Floods. <https://laopdr.un.org/en/12913-2018-floods-post-disaster-needs-assessment>

¹² AHA Centre (14 October 2019) Situation Update: Tropical Storm Podul and Tropical Depression Kajiki. <https://ahacentre.org/situation-update/situation-update-no-5-tropical-storm-podul-and-tropical-depression-kajiki-13-sep-2019/>

¹³ http://www.fao.org/nr/water/aquastat/basins/mekong/mekong-CP_eng.pdf

¹⁴ GoL (2009). NATIONAL ADAPTATION PROGRAMME OF ACTION TO CLIMATE CHANGE: LAO PDR.

¹⁵ World Bank. (2011). Climate Risk and Adaptation Country Profile: Lao PDR Vulnerability, Risk Reduction, and Adaptation to Climate Change.

¹⁶ GoL (2018). Post Disaster Needs Assessment (PDNA) 2018 Floods. <https://laopdr.un.org/en/12913-2018-floods-post-disaster-needs-assessment>

¹⁷ [http://www.un-spider.org/sites/default/files/41.%20UN-SPIDER_Lao PDR%20rev1-ilovepdf-compressed.pdf](http://www.un-spider.org/sites/default/files/41.%20UN-SPIDER_Lao%20PDR%20rev1-ilovepdf-compressed.pdf)

¹⁸ Lao Statistics Bureau, 'Lao Country Report: 2019 KOICA-ESCAP Fellowship Programme, Capacity Building on Drought Monitoring and Early Warning'

¹⁹ Sutton, William R., Jitendra P. Srivastava, Mark Rosegrant, and Jawoo Koo, and Ricky Robertson, 'Striking a Balance: [Managing El Niño and La Niña in Lao PDR's Agriculture](#)', 2019

²⁰ <http://www.mrcmekong.org/news-and-events/news/drought-continues-to-hit-mekong-countries-risking-stress-on-crop-production-water-shortage/>

²¹ Sutton, William R., Jitendra P. Srivastava, Mark Rosegrant, and Jawoo Koo, and Ricky Robertson.

²² ADB (2023). Climate Risk and Vulnerability Assessment: Climate-friendly Agribusiness Value Chains Sector Project

²³ EcoLao. (2012). Scoping Assessment of Climate Change Adaptation Priorities in the Lao PDR: Regional Climate Change Adaptation Knowledge Platform for Asia. Stockholm Environment Institute. <https://doi.org/www.asiapacificadapt.net>

²⁴ MONRE (2021). Lao PDR Nationally Determined Contribution (NDC)

of public health infrastructure and water supply system to climate change as they are defined in the Strategy on Climate Change and Health Adaptation 2018-2025. Therefore, one of the targets set forth in the revised NDC is to enhance climate change adaptation mainstreaming in sectoral strategies and plans with a results-based management framework developed for various sectors including the agriculture, forestry and land use planning, energy, water resources, transport and urban development.²⁵

Led by GoL, with the support from the Global Green Growth Institute (GGGI), the project for Support for Mainstreaming Climate Change Adaptation into Sectoral Planning in Lao PDR is being executed since 2023, with an objective is to enhance climate resilience in Lao PDR by mainstreaming climate change adaptation at the sector level by developing sectoral adaptation plans for key vulnerable sectors and concept notes featuring gender analyzes for priority adaptation project to access GCF funding moving forward. The project was funded by the Green Climate Fund (GCF) and will run until 28 November 2025. It is currently being implemented by the GGGI Lao Country Office as the Delivery Partner in close cooperation and partnering with the Ministry of Natural Resources and Environment (MONRE). Under the Ministry, the Department of Climate Change (DCC) is the key office acting as the implementing entity for coordination and the implementation of the project.²⁶ There are three main outcomes and outputs under this project with corresponding sectoral-level activities, as follows:

1. Outcome 3.1: Adaptation planning governance and institutional coordination strengthened
 - Output 3.1.1: Gender-balanced teams operationalized to coordinate the adaptation planning at the sector level
 - Activity 3.1.1.1: Organize an inception workshop
 - Activity 3.1.1.2: Review the mandate of government ministries and agencies
 - Activity 3.1.1.3: Organize bi-annual meetings of sectoral adaptation teams
 - Activity 3.1.1.4: Undertake capacity needs assessment of sectoral adaptation teams
 - Activity 3.1.1.5: Design training modules on adaptation planning based on 3.1.1.4
 - Activity 3.1.1.6: Map stakeholders including those representing women and develop engagement plan for a gender and socially inclusive approach to sectoral adaptation planning.
2. Outcome 3.2: Evidence produced to design adaptation solutions for maximum impact
 - Output 3.2.1: Agriculture, forestry, urban development, and water sectoral adaptation action plans developed and disseminated
 - Activity 3.2.1.1: Review relevant available climate information including past and planned studies and assessments
 - Activity 3.2.1.2: Conduct sectoral climate change vulnerability and risk assessment,
 - Activity 3.2.1.3: Prepare guidelines on identifying and prioritizing adaptation options based on 3.2.1.1
 - Activity 3.2.1.4: Organize workshop with sectoral adaptation teams to initiate the formulation of the adaptation action plans
 - Activity 3.2.1.5: Formulate sectoral adaptation action plans
 - Activity 3.2.1.6: Provide recommendations for the effective integration of priority sectoral adaptation actions
 - Activity 3.2.1.7: Organize workshop to communicate sectoral adaptation action plans
 - Activity 3.2.1.8: Consolidate sectoral monitoring and reporting systems developed under 3.2.1.5
3. Outcome 3.4: Adaptation finance increased
 - Output 3.4.1: Two quality concept notes on adaptation project developed, with pre-feasibility studies conducted
 - Activity 3.4.1.1: Investment prioritization stemming from 3.2.1, in collaboration with UN Habitat's Activity
 - Activity 3.4.1.2: Conduct technical, environmental, gender and social economic and financial analyzes

²⁵ GGGI (2023). Terms of Reference: Lao PDR National Climate Adaptation Capacity Building Specialist

²⁶ GGGI (2022). Project Document: Support for Mainstreaming Climate Change Adaptation into Sectoral Planning in Lao PDR

- Activity 3.4.1.3: Develop two quality concept notes for adaptation project in collaboration with UN-Habitat.²⁷

Table 1: Project overview

Location	Lao PDR
Delivery Entity	GGGI – Lao PDR Country Office
Implementing Entity	Department of Climate Change (DCC), MONRE
Funding Source	Green Climate Fund (GCF)
Grant	USD 1,000,000
Duration	28 November 2022 – 28 November 2025
Objective	To enhance climate resilience in Lao PDR by mainstreaming climate change adaptation at the sector level by developing sectoral adaptation plans for key vulnerable sectors and concept notes featuring gender analyzes for priority adaptation project to access GCF funding.

Source: Author, based on project document

1.2. Objectives

Overall, the objective of the capacity development activity is to build institutional capacity of the relevant government entities at the sectoral levels in mainstreaming climate change adaptation into prioritized sectors strategies and plans through establishing sectoral teams and strengthening their capacity on climate change adaptation planning which include climate risk and vulnerability assessment (CRVA).

Specifically, the capacity needs assessment aims to:

- Highlight the existing capacity of sectoral government agencies in developing, integrating, and implementing climate change adaptation planning and activities.
- Identify capacity deficiencies, gaps, and challenges in terms of knowledge and understanding of climate change, with a focus on integrating climate change adaptation into their sectoral policies and strategies.
- Review sectoral policies, strategies, and plans to identify whether they contain clear climate change adaptation/resilience parameters or indicators.
- Identify the capacity development recommendations, priorities, and training areas where personnel capacities are needed to perform key functions related to climate change adaptation planning.

1.3. Approach and Methodology

This assignment is part of the implementation of the project output 3.1.1 – under activity 3.1.1.4-3.1.1.6 is the undertaking capacity needs assessment of sectoral adaptation teams, including review of sectoral policy for existing adaptation parameters to identify gaps and provide recommendations to address them; mapping stakeholders which include those representing women and vulnerable groups and developing engagement plan for a gender and socially inclusive approach to sectoral adaptation planning; and developing training modules on adaptation planning, covering vulnerability and risk assessments, integrating inclusion considerations as well as conducting training of trainers (ToT) capacity building program for key sectors to fill in knowledge gaps and strengthen capacity on sectoral adaptation planning. These activities will be conducted in consideration of activities of UN Habitat under Activity 3.1.1b and 3.1.1c and Activity 1.2.1 of UNEP GEF NAP regarding a roadmap for engaging multi-stakeholders to advance the NAP process to ensure complementarity.²⁸

Specifically, the capacity needs assessment and capacity building activities are conducted and developed via desk review and consultation with sectoral stakeholders, considering the capacity gaps, barriers and needs of the country to drive and achieve climate change adaptation planning, which focused on three main areas, including (i) institutional capacity and coordination include weak institutional and technical capacity to mainstream climate

²⁷ GGGI (2022). Project Document: Support for Mainstreaming Climate Change Adaptation into Sectoral Planning in Lao PDR

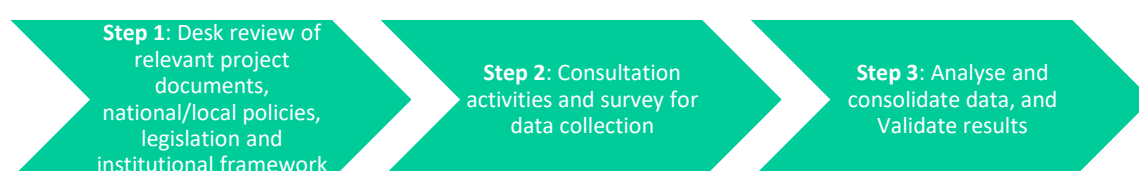
²⁸ GGGI (2022). Project Document: Support for Mainstreaming Climate Change Adaptation into Sectoral Planning in Lao PDR

change into strategies and plans or translate them into actionable measures; (ii) information includes absence of sectoral action plans and indicators in most key sectors; and (iii) adaptation financing includes lack of diversified sources of long-term financing for adaptation.

This capacity needs assessment report is structured into three main sections as follows:

1. Section 1 provides an introduction that includes information on the country context, project background, objectives, as well as approaches and methodologies applied.
2. Section 2 discusses the capacity needs assessment results, including the review of the relevant legal, policy, and institutional frameworks of key government entities related to climate change adaptation, as well as the assessment of their existing capacity, gaps/challenges, and needs based on three levels of enabling environment, institutional, and individual capacity.
3. Section 3 presents conclusions and recommendations for the way forward. This includes recommendations for key priority actions to fill the identified gaps and challenges.

A three-step process is applied for this assignment, where each step is intended at deepening engagement with project stakeholders and promoting dialogue among them (see Figure 1).



Source: Author

Figure 1: Assessment Process

The assignment is informed by a conceptual and interactive research design that included document analysis of project documents and reports as well as key sectoral documents, focusing on climate change adaptation/resilience in Lao PDR. The method comprises 1) a review of secondary information; 2) key informant survey for primary data collection; and 3) information analysis and validation. Triangulation approach helps increase the credibility and validity of the assessment results. The methodologies are described in details below:

1.3.1. Desk-based and Literature Review

The first step involves an extensive literature and secondary data review. The project documents are thoroughly reviewed, especially the project baseline data, which provides a starting point for the analysis at the inception phase. This ensures that the methodology considers previous work to avoid duplication, builds on existing work, and identifies gaps in the project baseline data and reports.

Furthermore, a wide range of other documents is reviewed and analyzed to support the development of the capacity needs assessment and the Sectoral Engagement Plan (SEP), including sectoral policies, plans, and initiatives related to climate change in Lao PDR. The document analysis focuses on how the national government manages, governs, and plans for climate change adaptation in Lao PDR, which is included in the legal, policy, and governance analysis section. Various reports and documents from relevant projects are also reviewed where available, and stakeholders who generated those reports are engaged where feasible to identify existing capacity and knowledge gaps, as well as capacity development programs, and to seek synergies from different development partners and projects where feasible. Table 2 below provides a list of the main documents received and analyzed through desk review, including but not limited to:

Table 2: List of project related documents and sectoral strategies/plans

Document	Received
Approved GCF Readiness Project Document of GGGI	✓
Approved GCF Readiness Project Document of UN-Habitat	✓
Project annual work plan, or monitoring and evaluation framework of this project	✓
UNEP GEF NAP Roadmap on stakeholder engagement enhancement	✓
Project baseline assessment/reports, conducted by previous projects of GGGI or relevant organizations – such as capacity assessment report, training needs assessment report, etc. (if available)	✓
UNEP GEF NAP Training Need Assessment Report	✓
Project Inception Workshop/Kick-off Meeting Report (including list of participants)	✓
Lao PDR laws and legislations related climate change	✓
National policies, strategies and plans related to climate change adaptation/resilience, including: - National Climate Change Strategy (2023) - Nationally Determined Contribution (NDC) (2021) - National Adaptation Plan (NAP) (Final draft) - NDC Implementation Plan 2024	✓
National policies, strategies and plans of key sectors of agriculture and forestry, urban development and water resources, including: - 9th National Socio-Economic Development Plan (2021-2025) (2021) - National Forestry Strategy to 2035 and Vision to 2050 (2024 Final Draft) - National Agriculture Strategy to 2025 and Vision to 2030 (2015) - National Housing and Urban Development Strategy toward 2030 and Vision to 2035 (2023) - National Water and Water Resources Management Strategy towards 2030 and Vision to 2040 (2023)	✓
Mandates of different institutes at the national/sectoral level to climate resilience	✓

Source: Author

1.3.2. Data Collection

The data collection for this assessment involved a mixed approach, including sectoral stakeholder consultation workshops and bilateral meetings, as detailed below:

- 1. In-person Sectoral Stakeholder Consultation** This activity/approach was conducted as a separate consultation workshop or in conjunction with other consultation activities of the project. Its aim was to present an overview of the capacity development activity, emphasize the importance of capacities for climate change adaptation planning, identify capacity gaps, assess existing capacity, and determine areas requiring development to enhance adaptation planning and mainstreaming (see Appendix 1: a tentative agenda for the workshop). A variety of tools were employed for qualitative and quantitative data collection purposes, including:
 - Question Discussion:** A set of questions was developed and used to collect qualitative data from key stakeholders. Group discussions/exercises were conducted with key stakeholders involved in climate change adaptation during the workshop. Open-ended questions were asked among participating officials to assess their existing capacities, gaps, deficiencies, and needs. Each group had a facilitator to guide and facilitate the group discussions by asking the given questions and recording the answers on the prepared data collection sheets.

- **Survey Questionnaire:** At the end of the workshop, a survey tool was utilized through a prepared questionnaire form to gather quantitative information regarding capacity development and needs, as well as gaps and challenges of key stakeholders. These were assessed against key areas including policy and plan development, financial mechanisms, project and information management, coordination and partnerships, participation and inclusiveness, monitoring and evaluation, knowledge and technical capacity, human resources development, and training provisions.

2. Bilateral Meetings/Interviews with Key Stakeholders These meetings were organized since data collected from the stakeholder consultation workshop were insufficient. The meetings provided an opportunity to gather additional necessary information from key stakeholders. Individual meetings were conducted with stakeholders who had not been involved in previous capacity needs assessment activities, such as departments of the Ministry of Energy and Mines, Lao Youth Union, Lao Front for National Development and Lao Women Union.

The selection of stakeholders is based on the review of the project documents, the project inception workshop report, and in consultation with the project team, ensuring that all stakeholders with key roles in the implementation and engagement of the project, as well as climate change adaptation, are represented. The data collection tools (discussion questions/survey form) were developed in English. However, the majority of the interviews were conducted in the local language (Lao). The consultant translated interview transcripts into English, necessitating a degree of interpretation of responses. As mentioned, the interviews with gender-related and social group offices such as the Lao Women Union and Lao Youth Union were held to ensure that the voices of these groups are heard and that the analysis considered gender inclusiveness. A summary of key stakeholders and data collection methods is provided in Table 3.

Table 3: Key stakeholders for the data collection

Stakeholder	Engagement Level	Data collection method
Ministry of Natural Resources and Environment (MONRE): Department of Climate Change (DCC)	Implementing Entity	Semi-structured Interviews (Key Informant interview - (KII) + Survey questionnaire
MONRE: - Department of Planning and Finance (DPF) - Department of Meteorology and Hydrology (DMH) - Department of Water Resources (DWR) - Department of Environment (DOE) - Lao National Mekong Committee (LNMC) - Environment Protection Fund (EPF) Ministry of Agriculture and Forestry (MAF): - Department of Planning and Cooperation (DPC) - Department of Agriculture (DOA) - Department of Agriculture Land Management (DALAM) - Department of Livestock and Fisheries (DLF) - Department of Irrigation (DOI) - Department of Forestry (DOF) - National Agriculture and Forestry Research Institute (NAFRI)	Sectoral government stakeholders	Semi-structured Interviews (KII) + Survey questionnaire

Ministry of Public Works and Transport (MPWT): • Department of Planning and Cooperation (DPC) • Department of Housing and Urban Planning (DHUP) • Department of Roads (DOR) • Department of Waterways (DOW) • Public Works and Transport Institute (PWTI) Ministry of Energy and Mines (MEM): • Department of Energy Policy and Planning (DEPP) • Department of Energy Business (DEM) • Department of Energy Management Lao Women Union: • Department of Lao Women's Development Lao Youth Union: • Department of Activity Lao Front for National Development: • Department of Ethnicity		
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Source: Author

1.3.3. Data Analysis

The data analysis used mixed methods (qualitative and quantitative) in order to best reflect the results and provide necessary information to assess the existing capacity and gaps, and develop the capacity building and training materials. The information received from the meetings/interviews and in-depth survey forms (questionnaire) were used to facilitate quantitative and qualitative assessment of the results. The data collection and analysis primarily considered the principles of the capacity assessment developed by the United Nations.

Capacity is defined as *“the ability of people, organizations and society as a whole to manage their affairs successfully”*. It can be grouped in three levels, including individual, institutional and enabling environment, which altogether are interdependent and mutually reinforcing.²⁹ The capacities at these three levels relate to, inter alia, as described below:

- 1) **Individual level** – on individual awareness, knowledge, skills and competences through training, experience, motivation and incentives;
- 2) **Institutional level** – on organizational performance, current roles and responsibilities for adaptation planning; mandate for adaptation in the development sectors; and coordination among ministries and other stakeholders; and
- 3) **Enabling environment level** – on alignment among sectoral policies with regard to adaptation; integration of adaptation into key sector strategies and plans; institutional political economy; and political commitment to address climate-related challenges.³⁰

The capacity gaps, deficiencies as well as capacity needs were also assessed against key assessment areas over three capacity levels, including 1) policy and legal framework development and implementation; 2) financial

²⁹ UN (2020). Capacity Development: UNDAF Companion Guideline: <https://unsdg.un.org/sites/default/files/UNDG-UNDAF-Companion-Pieces-8-Capacity-Development.pdf>

³⁰ FAO (2018). Institutional Capacity Assessment Approach for National Adaptation Plan in the Agriculture Sectors: https://www.adaptation-undp.org/sites/default/files/resources/institutional_capacity_assessment_-_nap-ag.pdf

mechanism; 3) projects and information management; 4) coordination and partnering; 5) participation and inclusion; 6) monitoring and evaluation; 7) knowledge and technical capacity; 8) human resource development; and 9) training participations. See further details of capacity assessment levels and areas in Table 4 below.

Table 4: Capacity assessment levels and key areas

Assessment Level	Capacity Assessment Areas	Description
Enabling Environment	Policy and legal framework Development and Implementation	Presence of policy and strategy support for climate change adaptation as well as the capacity of the key sectors on developing and implementing the developed policies and plans
	Financial mechanism and policy	Financial mechanisms developed and resources allocated for planning and implementing climate change plans and activities
Institutional	Project and Information Management	Existing or on-going programs and project, and database related to climate data/information management
	Coordination and Partnerships	Coordination and partnering mechanism with other agencies/organizations
	Participation and Inclusiveness	Existing policies, instruments and capacity on promoting CSOs, vulnerable group and women participation and inclusiveness
	Monitoring and Evaluation	Monitoring and evaluation systems, mechanisms and instruments that are existed and in place
Individual	Knowledge and Technical Capacity	Level of knowledge and understanding of staff required to perform and support climate change adaptation activities and initiatives
	Human Resources Development	Existing capacity development programs for staff (e.g., training modules, guides, manuals) related to climate change adaptation within the sectoral offices
	Training Participation/Provision	Staff participations in the training programs or capacity building activities on climate change adaptation by different projects

Source: Author

1.4.Principles for Stakeholder Engagement, Gender Equality and Social Inclusion

GCF recognizes the importance of gender considerations in terms of impact and access to climate funding. Thus, the GCF Gender Equality and Social Inclusion Policy (the GESI Policy) and the Action Plan developed in 2018 express the commitment of the GCF to promote the interrelated goals of gender equality and social inclusion within and across its investment criteria and as an integrated measure of the social dividends of the overall portfolio.

The GCF GESI Policy and Action Plan recognizes that gender relations, roles and responsibilities exercise important influences on women and men's access to and control over decisions, assets and resources, information and knowledge. It also recognizes that the impacts of climate change can exacerbate existing gender inequalities, as well as inequalities from other forms of social exclusion. It further acknowledges that climate change initiatives are more sustainable, equitable and effective when gender equality, women's empowerment and social inclusion considerations are integrated into the design and implementation of projects and programs. Moreover, effective social inclusion strategies increase the leadership and engagements of all people, regardless of their socioeconomic background, ethnicity, minority status, or sexual orientation, in implementing the transformative agendas required to respond to climate change.

The guiding principles underpin the core values and premises of the GCF GESI Policy and are aligned with the objectives and guiding principles of the Governing Instrument.³¹ These principles include the following:

³¹ GCF (2018). Gender Equality and Social Inclusion Policy (the GESI Policy) and the Action Plan. <https://www.greenclimate.fund/sites/default/files/document/gcf-b19-25.pdf>

- 1) **Human rights-based approach:** GCF recognizes the centrality of human rights to sustainable development, poverty alleviation and ensuring fair distribution of development opportunities and benefits and supports “universal respect for, and observance of, human rights and fundamental freedoms for all”.
- 2) **Country ownership:** The proposed country programs, readiness, national adaptation plans, nationally appropriate mitigation actions and other projects and proposals submitted to GCF by NDAs/focal points/DPs or AEs shall be aligned with national policies and priorities on gender and with the GESI Policy and Action Plan.
- 3) **Stakeholder engagement and consultation:** GCF requires that women and men, and members of marginalized and vulnerable groups and communities, shall be provided with an equal and equitable opportunity to be fully and effectively engaged in meaningful consultations and decision-making during project and program preparation, implementation and evaluation.
- 4) **Disclosure of information:** GCF recognizes the importance of transparency, access and accountability in all aspects of its operations. Thus, it endeavors to provide accurate, gender-responsive and timely information to its stakeholders, including marginalized individuals and communities, and the public at large, about its policy guidelines, standards, procedures and project and program operations.

In line with the GGGI Strategy 2030 and Roadmap 2021-2025, GGGI has committed to promoting stakeholder engagement and gender equality in development has gained reinforcement and added momentum by being included in the Strategy 2030 as one of GGGI’s Global Operational Priorities (GOP5): Accelerating progress of GGGI country programs in poverty eradication and gender equality through organizational operations.

The GGGI Gender Equality and Social Inclusive Strategy (2021-2025) establishes the linkages of GGGI Objectives, Programmatic Solutions, and Operational Framework with human and social development goals, and rests on the principle that poverty eradication and gender equality are human rights. Also, importantly, the recognition that socially sustainable and inclusive approaches (i.e., those that enable the meaning full participation of women, men, boys and girls, including poor and marginalized communities as “active agents of change,) are a prerequisite for the green growth transformation.³² GGGI has promoted principles of human rights in green growth processes, particularly with regards to stakeholder participation, gender equality and social inclusion:

- This achieves through broad stakeholder engagements and partnerships with government, civil society, and private sector actors and institutions.
- This ensures multiple voices and perspectives and helps incorporate a wide range of needs, skills, and potentials into green growth solutions.
- This ensures that the challenges and opportunities of all, including women, youth, indigenous peoples, migrants, and other vulnerable groups are heard when conducting green growth potential assessments and design of green growth approaches.
- This elevates women, disadvantaged and vulnerable groups in GGGI’s green growth development agenda.
- This ensures profound commitment to poverty, gender, and women’s empowerment led to some refocusing of direction, strategy alignment, impact targeting, capacity building, and resource deployment through a new five-year gender strategy.

The consultation process and the deliverables of this assignment takes into account stakeholder engagement, gender equality and social inclusion outlined in the GCF GESI Policy and the Action Plan, and the GGGI Gender Equality and Social Inclusion Strategy (2021-2025). Specially, the Stakeholder Engagement Plan under this assignment adheres to the guidelines outlined in the GCF GESI Policy and the Action Plan.

³² GGGI (2021). GGGI Gender Equality and Social Inclusive Strategy (2021-2025). https://gggi.org/wp-content/uploads/2021/02/GGGI_Gender-Strategy-2021-2025-FINAL-January-1-2020.pdf

2. CAPACITY NEEDS ASSESSMENT

2.1 Enabling Environment

The assessment of the enabling environment begins with a review of the Lao PDR's policy and legal framework and instruments for climate change. Following that, it examines the policy and legal framework's implementation capacity on climate change adaptation, as well as the extent of implementation and mainstreaming of climate change into the sectoral legislation and policies.

2.1.1 Climate Change Policy and Legal Framework Review

Since 2009, the GoL has been developing a policy framework to respond to climate change. Climate change policy is aligned with multi-lateral environmental agreements, which Lao PDR has signed, and also with national development planning. In terms of climate change adaptation (CCA), policy is closely linked to disaster management planning, and there have, at times, been institutional linkages between the two. Some of the policy legal documents are specifically focused on one or both of climate change (adaptation and mitigation) and disaster risk management (DRM). Table 5 below summarized the relevant CCA and DRM policies, plans and legal documents:

Table 5: List of CCA and DRM policies, plans and legal documents

Approved Year	Strategies, policies, plans and legal documents
2009	National Adaptation Programme of Action to Climate Change (NAPA)
2010	National Strategy on Climate Change
2012	Climate Change Action Plan (2013-2020)
2015	(Intended) Nationally Determined Contribution (NDC)
2016	8 th Five-year National Socio-Economic Development plan (NSED) (2016-2020)
2019	Climate Change Decree
2019	Law on Disaster Management
2020	National Strategy on Disaster Reduction (2021-2030)
2021	Nationally Determined Contribution (NDC) (Revised)
2021	9 th Five-year National Socio-Economic Development plan (NSED) (2021-2025)
2023	National Strategy on Climate Change towards 2030
2023	NDC Implementation Plan
2024	National Adaptation Plan (NAP) (Under approval)

Source: Author

The **National Adaptation Programme of Action (NAPA)** was the first climate policy framework approved in 2009 with the principal objective is to “develop a country-driven program to address immediate and urgent needs related to current and projected adverse effects of climate change in key sectors”. NAPA identifies the four sectors mostly affected by climate change namely agriculture, forestry, water resources and public health, and outlines short-term adaptation actions and priorities for these sectors for the decade spanning 2010–2020.³³ There are also 45 project proposals presented in the four sectors, categorized into first or second priority.

³³ GoL(2009). Lao PDR National Adaptation Programme of Action (NAPA). https://www.adaptation-undp.org/sites/default/files/downloads/laos_pdr_napa.pdf

However, many of these priorities remain unfulfilled but are deemed to be critical such as: (i) early warning systems, (ii) programs to boost the resilience of crop varieties and animal species to climate change, and (iii) ensuring sustainable use of water resources. Nonetheless, the Government of Lao PDR (GoL) has been developing a National Adaptation Plan (NAP), which is a medium and long-term adaptation plan of the country and expected to be endorsed by 2024.

The **National Strategy on Climate Change Strategy (NSCC)** was released in 2010 to guide future planning in both adaptation and mitigation. At the time, there was still very limited data about climate change in Laos, and many assumptions and projections were based on regional data or anecdotal observations. The climate change strategy took the approach of “mainstreaming climate change in the 7th National Socio-Economic Development Plan (NSED) 2011-2015 and building climate resilience in critical sectors of economic development and poverty reduction, involving its people in partnership with the international community”. The following climate change vision encapsulates the Government’s holistic, integrated approach to climate change and reinforces the strong links with development aims. The Strategy aims to create an enabling environment for improving mitigation and adaptation to changing climatic conditions in a way that promotes sustainable economic development. The strategy defines four goals, including increasing the resilience of key sectors of the national economy and natural resources to climate change and its impacts. Due to the strong linkages and several synergies between mitigation, prevention and preparedness in CCA, the adaptation options for agriculture and food security of the NSCC have high relevance for disaster risk reduction (DRR).

Based on the National Climate Change Strategy, the **Climate Change Action Plan** was developed and approved in 2012 with the purpose of “*identifying the goals, key initiatives, proposed projects and activities as well as leading or responsible agencies*”. It was expected to help stakeholders from the national to the local level in implementation, monitoring and reporting in a coordinated manner. To the vision and guiding principles which were introduced in the strategy, the action plan added four key initiatives, including 1) strengthening institutional and human resource capacities on climate change; 2) enhancement of adaptive capability for coping with climate change; 3) Climate change mitigation through the reduction of greenhouse gas emission; and 4) Strengthening education and raising public awareness on climate change.

Lao PDR has committed to the Paris Agreement through the development of the [**Intended**] **Nationally Determined Contribution (NDC)**, aiming to reduce greenhouse gas emissions. The country is steadfast in its efforts to limit global warming to 1.5°C and achieve carbon neutrality by 2050. It submitted the first NDC to the UNFCCC in October 2015.³⁴ The first NDC contained a number of planned actions for both mitigation and adaptation. However, it did not contain measurable targets for emission reductions. For adaptation, the NDC covered key sector of 1) agriculture, forestry and land use; 2) water resources; 3) urban development and transport; 4) energy; 5) waste management; and 6) public health.

The government's vision for sustainable development is enshrined in the **National Socio-economic Development Plan (NSED)**, prepared every five years. Climate Change has initially been streamlined in the document since the 7th NSED (2011-2015). It emphasized sustainable development, aiming to reduce vulnerability to climate impacts while promoting socio-economic growth. Key measures included incorporating climate resilience into infrastructure projects, enhancing agricultural productivity with climate-smart practices, and strengthening institutional capacities for climate change management. The plan sought to align national policies with international climate commitments, ensuring that development efforts were sustainable and climate-resilient.

While the 8th NSED concerning climate change include to “*Ensure public involvement to minimize GHG emissions, increase and enhance the ability to adapt and prepare for climate change by integrating climate change and risks mitigation into strategic and operational plans of the sectors concerned*.”³⁵ In terms of adaptation, it aims to enhance resilience through mainstreaming climate change adaptation into sectoral planning. Key sectors such as agriculture, forestry, and water resources are prioritized for adaptation strategies, ensuring that development

³⁴ A country’s INDC is converted to a Nationally Determined Contribution (NDC) when it formally joins the Paris Agreement by submitting an instrument of ratification, acceptance, approval or accession.

³⁵ GoL (2016. 8th Five-Year National Socio-Economic Development Plan (NSED) 2016-2020

efforts are sustainable and resilient. The plan includes specific measures to integrate climate change adaptation at various levels, such as developing sectoral adaptation plans and incorporating gender analyses for priority projects. The 8th NSEDP also aligns with broader international frameworks like the Sustainable Development Goals and aiming for graduation from Least Developed Country status and achieving industrialization and modernization goals.

In 2021, the **9th National Socio-Economic Development Plan (NSEDP)** (2021-2025) is in place, with overall objectives focusing on graduating from Least Developed Country status, pursuing Sustainable Development Goals (SDGs), realizing green growth, achieving upper-middle-income country status, integrating with regional and international cooperation, and building a fair and solidary society that allows all people to access quality social services. The plan also identifies and prioritizes objectives related to climate change adaptation and resilience, focusing on effective preparedness for natural disasters and climate risks, as well as restoration of disaster damage to build back better (BBB).³⁶ Particularly, DRM and CCA are set as one of the key priorities under Outcome 4: Environmental protection enhanced and disaster risks reduced, the plan spells out the need to enhance capacities on disaster prevention, management, and recovery for national and sub-national authorities responsible for DRM and CCA; and Outcome 5: Integration and Connectivity addresses resilient infrastructure, regional and local development, and urban development.

The **Decree on Climate Change** of the Lao PDR was endorsed in 2019 and is the first legal framework for supporting climate change implementation in national and sectoral development plans has been enhanced the recent year.³⁷ The Decree defines principles, regulations and measures relating to climate change adaptation and mitigation, and mandates the Ministry of Natural Resources and Environment (MONRE) to lead national climate change responses in coordination with all ministries with functional responsibilities in the national responses to climate change. Crucially, this Decree recognizes the need for public participation in dialogues and planning processes, as also the need to ensure that the climate change adaptation measures are gender, disability and culturally sensitive. Furthermore, the Decree highlights the importance of the climate change mainstreaming into visions, strategies, plans and programs, both across different sectors and at different levels of government, and the establishment of a Climate Change Fund to ensure sufficient and sustainable budgets for implementing the climate change adaptation interventions and DRM.

The country's first **Law on Disaster Management** was recently approved in 2019. This law outlines the principles, regulations and measures related to disaster management including regional and international linkages, and national social and economic development towards sustainable development in Lao PDR. It prioritizes clear dissemination of information and aims to minimize the impact of disasters on health, life, property, the environment, and infrastructure. It also outlines recovery, restoration, and rebuilding efforts following a disaster and links with the region and the international community to contribute to the socio-economic development in the green and sustainable manner and national security. According to this Law, the Disaster Management Committee (DMC) at each level is required to create a Disaster Management Plan. Accordingly, the National Disaster Management Committee (NDMC) collaborates and coordinates with the relevant line ministries, organizations, and local authorities, Provincial and District Disaster Management Committee (PDMC and DDMC) to respond to extreme events, provide aids and share disaster information.³⁸ In overall, the law inherently addresses climate change in particular enhancing climate and disaster resilience.

The GoL has approved the **National Disaster Risk Reduction Strategy towards 2030** in 2021. The intention of this Strategy is to extend the implementation of the Disaster Management Law adopted in 2019, and also to implement regional and global policies and strategies on DRR, including the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR), the Paris Agreement on climate change, the ASEAN Agreement on Disaster Management and Emergency Response, the ASEAN Action Plan on Disaster Management and Emergency

³⁶ GoL (2021). 9th Five-Year National Socio-Economic Development Plan (NSEDP) 2021-2025

³⁷ GoL (2019). Climate Change Decree. <https://data.laos.opendevlopmentmekong.net/dataset/decreed-on-climate-change-lao-pdr-2019>

³⁸ GoL (2019). Law on Disaster Management. https://disasterlaw.ifrc.org/sites/default/files/media/disaster_law/2021-03/DM%20Law%20Unofficial%20Translation.pdf

Response for 2021-2025, the ASEAN Declaration on Unity in Disaster Response, and the 2030 Agenda for Sustainable Development Goals (SDGs). The Strategy sets out lessons learned from disaster experiences, a strategy and approach on disaster management, and implementation methods and budget. It also takes into account various natural disasters, including floods, droughts, landslides, fires, and disease outbreaks.³⁹

Lao PDR submitted its revised **NDC** in May 2021 raising its ambition with an unconditional emission reduction target of 60% by 2030, relative to the baseline scenario, strengthening mitigation measures in the forestry and energy sectors and applied gender equality perspectives. While the adaptation component was broadened in the revised NDC and does not change the priority adaptation objectives, but rather the emphasis is on their continuing implementation. It sets a 2025 target for developing an adaptation strategy and action plan in the agriculture, forestry, land use change, water resources, and transport and urban development sectors. Importantly, one of the adaptation targets sets is to enhance the mainstreaming of climate change adaptation in sectoral strategies and action plans. According to the revised NDC, it was found difficult to report the progress on the adaptation component due to absence of sectoral adaptation plan, targets and indicators in many key sectors. Therefore, one of the targets set forth in the revised NDC is to enhance mainstreaming of and build the capacity on climate change adaptation in sectoral strategies and with a results-based management framework established for key sectors.⁴⁰

According to these Outcomes, the 9th NSEDP identified the priorities activities related to climate change and DRR, including mainstreaming climate change and natural disasters into the development plans of relevant sectors and localities; and developing green and livable cities, focusing on designing urban planning and management, facilities and strong infrastructure that is resilient to climate change and natural disasters. It also emphasized the importance on implementation of the Nationally Determined Contributions (NDC) and GHG mechanisms such as the REDD+ project; and promoting the use of modern technologies that generate less waste, save energy, and use clean and environmentally friendly energies.⁴¹

To date, the most recent policy climate change framework is the **National Strategy for Climate Change – towards 2030** (NSCC) approved in 2023.⁴² The strategy is designed to strengthen capacities in various areas, including legal frameworks, institutions, technology, human and financial resources, economics, cooperation and coordination, research, information exchange, education, and climate change awareness. It delineates six primary goals, supported by three strategies and nine programs. These goals are aimed at effectively integrating climate change mitigation and adaptation into national, sectoral, and local policies, strategies, programs, and projects. It also seeks to bolster the resilience, adaptability, and climate change vulnerability reduction capabilities of communities, production systems, business value chains, infrastructure, ecosystems, and the environment. Furthermore, the NSCC commits to transforming Lao PDR into a low-emission nation, setting emission targets at less than 0.6 tons per capita per year by 2025 and less than 1.2 tons per capita per year by 2030.

The **NDC Implementation Plan** for Lao PDR is developed to achieve the climate targets outlined in its updated Nationally Determined Contribution (NDC), submitted in 2021. The plan emphasizes detailed strategies and priority measures to achieve the NDC's targets. This plan includes ambitious goals such as net-zero emissions by 2050 and specific targets across sectors like agriculture, forestry, energy, transportation, waste management, water resources, and public health. Supported by international partners, the plan focuses on building the technical capacity of government officials through training in climate downscaling and greenhouse gas emission projection modelling. It involves a participatory approach, engaging multiple government ministries, the private sector, and development partners to ensure comprehensive and effective implementation.⁴³

The first **National Adaptation Plan** (NAP) for Lao PDR is currently under development and expected to be approved by 2024. NAP focuses on creating the policy framework for a green, inclusive and pathway for a

³⁹ GoL (2020). National Disaster Risk Reduction Strategy to 2030: MLSW

⁴⁰ GoL (2021). Nationally determined contribution (NDC). <https://unfccc.int/NDCREG>

⁴¹ Ibid

⁴² MONRE (2023). National Strategy on Climate Change towards 2030

⁴³ <https://pia2023.ndcpartnership.org/the-government-of-lao-pdr-acquires-key-skills-and-planning-instruments-for-long-term-climate-action/>

sustainable and resilient future with the link to the NDC. The primary goal of the Lao PDR NAP is to reduce the country vulnerability to the impacts of climate change by building adaptive capacity and resilience and to facilitate the integration of climate change adaptation, in a coherent manner, into relevant new and existing policies, programs and activities, in particular development planning processes and strategies, within 9 key sectors of agriculture, forestry and land use planning, public works and transport, energy and mining, education, water resources, public health, labor and social welfare and tourism, as appropriate. It also defines a series of medium and long-term (2024-2035) climate adaptation measures that align to the visions and strategies of priority national sectors.⁴⁴

2.1.2 Sectoral Legislation and Policy Framework Review

- **Sectoral Legislation Framework**

The review of this section commences with a summary of the Lao PDR's legal framework for sectors related to climate change adaptation. In Lao PDR, several sectoral laws and regulations have been recently enacted or are under revision, some of which are framed around climate change adaptation and disaster risk management (DRM). The review focuses on key legal documents, which are reviewed and summarized as follows:

The **Law on Agriculture**, enacted in 1998, sets the principles, rules, and measures for organizing and managing agricultural production, which is a cornerstone of the country's economy. It aims to encourage, promote, and expand agricultural production to ensure food security and commodity production. The law also focuses on creating favorable conditions for developing agro-industrial processing, contributing to national economic growth, and improving the wealth and strength of the nation. Additionally, it emphasizes environmental protection, preventing damage and dangers to the ecosystem from agricultural activities.⁴⁵

The amended **Law on Forestry** in 2019 informs national policy on reforestation and deforestation, the sustainable use of forests and forest resources, and the utilization of forests and ecosystems for ecotourism. The revised Law acknowledges the participation of local communities in forest management and the creation of a village forest management plan. The review reveals that the Law inherently promotes more climate change mitigation than adaptation. Specifically, the Law mandates the increase of forest cover as sink sources for greenhouse gas (GHG) emissions and categorizes forests into three types for their management and use.⁴⁶ Regarding adaptation, while the Law does not directly mention adaptation, several articles define the importance of forest management and climate resilience. For instance, Article 47 pertains to forest management and protection, which encompasses conserving water sources, preventing soil erosion, maintaining soil quality, averting natural disasters, and safeguarding the environment.

The **Law on Urban Planning** underwent revision in 2017, providing the overall framework and legal principles for urban planning in Lao PDR, encompassing four levels of town planning: national, provincial, regional, and urban. This final draft consists of 98 articles, compared to 63 in the 1999 Law. Generally, the new legislation aims to establish clearer policies for the promotion of urban development, encouraging investment roles for the government, the private sector, public-private partnerships, and foreign direct investment (FDI).⁴⁷ Based on the review, the revised Urban Planning Law includes two articles relating to climate change. The first stipulates that the risks posed by climate change must be considered in any construction, while the second article pertains to environmental impact assessments (EIA). Specifically, Article 27 of the Law addresses EIA, requiring investment projects to conduct studies, research, and analyses on geography, geology, meteorology, hydrology, water sources, weather, ecology, nuisance, and climate change.

The amended **Law on Land** was enacted in 2019 replacing the previous amendment of the law from 2003. This law outlines the principles, regulations, and measures for the management and monitoring of land-related work to ensure its effective use for the protection, development, and proper utilization of land in accordance with its

⁴⁴ MONRE (2023). Lao PDR National Adaptation Plan (NAP): Fourth Draft

⁴⁵ GoL (1998). Law on Agriculture. https://data.opendevelopmentmekong.net/laws_record/law-on-agriculture-1998-lao-pdr

⁴⁶ GoL (2019). Law on Forestry. <https://faolex.fao.org/docs/pdf/lao89474.pdf>

⁴⁷ GoL (2017). Law on Urban Planning (Revised Version)

purpose. It aims to improve people's livelihood, ensure peace, social order, social security, justice, and contribute to national socio-economic development.⁴⁸ However, there is no direct mention of climate change in the law. It primarily mentioned the climate change prone areas defining in the Article 13 (Local Land Allocation Plan) of the Law. Notably, it highlights in Article 48 (Protection of Water Area Land) that investment and development should not harm or cause damage to wetlands or water area land. The Land Law is pertinent to wetland management as it obliges individuals and organizations to protect water area land to ensure it remains in good condition. It also specifies that land use should not have a negative impact on this type of land.

The revised **Law on Water and Water Resources** in 2017 significantly strengthens the regulatory basis for water governance and provides a binding legal basis for how the GoL shall manage protection, use and access to water and water resources. It also provides a regulatory mandate by determining the principles, regulations, and measures which must be adhered to in the management, administration, protection, development and use of water and water resources – including requiring MONRE, on behalf of the Government, to develop the National Water Resources Management Strategy.⁴⁹ Additionally, the law expands terms and conditions for large, medium, and small-scale uses, including articles on environmental flows for hydropower and stipulations related to irrigation use. More importantly, the revised law emphasizes Integrated Water Resources Management (IWRM), which river basin management must comply with IWRM principles, based on the actual conditions of each river basin, in accordance with the decentralization of powers at each level. Based on the review, there is no direct mention on climate change, however, it highlights the importance and protection of ecosystems in alignment with the revised Law on Land. In particular, it emphasizes that investment and development should not harm or cause damage to wetlands and rivers.

The revised **Law on Meteorology and Hydrology**, enacted in 2017, lays down principles, regulations, and measures for managing and monitoring meteorology and hydrology activities to ensure their development, modernization, and the provision of efficient and effective services. The law aims to surveil and reduce the impacts of natural disasters on the life and property of the state, communities, and individuals. It also aims to provide information quickly and accurately, establish links with regional and international cooperation, and contribute to green and sustainable socio-economic development and national security. Additionally, its purpose is to ensure the timely and accurate provision of data that can be integrated at a regional and international level, thereby contributing to national socio-economic growth in line with green and sustainable development and national security.⁵⁰ According to the review, several articles in the Law mention climate data collection, including instruments and stations used to measure and collect hydrological and meteorological data for the analysis, study, research, and forecasting of changes in weather and climate.

The **Law on Environmental Protection**, initially enacted in 1999 and amended in 2012, serves as the country's principal environmental legislation, encompassing measures for the protection and restoration of the environment, as well as guidelines for environmental and social management and monitoring.⁵¹ This general environmental legislation focuses on sustainable socio-economic development, biodiversity conservation, and pollution control. While it does not specifically mention climate change, it requires the consideration of climate change impacts within the Initial Environmental Examination (IEE) and the Environmental Impact Assessment (EIA) procedures. Article 15 of the Law also emphasizes the prevention of impacts on forests, water resources, animals, natural biodiversity, and resources, including climate change.

The **Law on Irrigation**, endorsed in 2012, defines principles, regulations, and measures for the management, monitoring, and inspection of irrigation activities to ensure the construction of irrigation facilities of all types and sizes with quality and effectiveness in accordance with technical standards and legal regulations. The law aims to ensure water supply, prevent droughts and floods, reduce damage to agricultural production, contribute to national food security, promote production as a commodity, alleviate poverty among the Lao people and ethnic

⁴⁸ GoL (2020). Law on Land

⁴⁹ GoL (2017). Law on Water and Water Resources

⁵⁰ GoL (2017). Law on Meteorology and Hydrology

⁵¹ GoL (2012). Law on Environmental Protection. https://policy.asiapacificenergy.org/sites/default/files/Environmental-Protection-Law-2013%20Ed_English.pdf

groups, and develop the economy.⁵² Although the Law emphasizes the importance of water management and conservation, such as in Article 6 which addresses natural resource protection including forestry, biodiversity, ecosystems, catchments, and unpolluted water sources, it does not directly mention the enhancement of climate resilience.

- **Sectoral Policy Framework**

The Government of Lao PDR has taken the important steps of building resilience to the climate change in the past decades by incorporating key elements of both Climate Change Adaptation (CCA) and Disaster Risk Management (DRM) into sectoral policies, strategies and plans, driven primarily by concerns about extreme events – such as floods and droughts. The relevant strategies and plans of key sectors related to CCA and DRM are summarized below. While the profound review of sectoral strategies and plans, climate change consideration and adaptation indicators are provided in the Appendix 4.

The **Agricultural Development Strategy towards 2025 and Vision towards 2030** envisions that, by 2030, food security will be ensured, potential agricultural commodities will be competitive, and clean, safe, and sustainable agriculture will be enhanced. Additionally, resilient agricultural production will be gradually modernized, linking with rural development and contributing to the economic growth of Lao PDR. The strategy has two overarching goals: to improve food production and agricultural commodity production. While the strategy sets out several interventions and measures for implementation, interventions related to disaster risk management, which included i) Develop a plan of action in disaster risk management for the agriculture and forestry sector, and where possible, integrate priority actions into the agriculture sectoral development plan at all levels; ii) Strengthening institutional capacity on disaster risk management, including creating risk profiles/maps, planning, and coordination mechanisms; iii) Improving infrastructure for agriculture production that is resilient to disasters, particularly drought, including irrigation systems (e.g., water gates, weirs, water pump stations, etc.), water management, and infrastructure for monitoring, controlling, and preventing disasters; and iv) Conducting research/studies to identify areas or types of soil suitable for growing seeds and plants that are resilient and adaptable to climate change.⁵³

The **National Forestry Strategy**, approved in 2005, establishes the key target of increasing forest cover to 70% of the land area by 2020 to develop carbon sinks and maintain it at that level in the future. Currently, the **National Forestry Strategy towards 2035 and Vision towards 2050** is undergoing revision and is expected to be endorsed in 2024. The Strategy delineates categories of forests, including production forests, conservation forests, protection forests, regeneration forests, and degraded forests. Although the Strategy addresses the forestry sector as crucial in addressing climate change challenges in Lao PDR, it sets the target of increasing forest cover to 70% of the land area by 2035 to develop carbon sinks and maintain it at that level to mitigate GHGs, reduce flood risks, and prevent land degradation.⁵⁴ However, it lacks clear mention of climate change adaptation or disaster risk reduction (DRR) actions.

The **National Green Growth Strategy to 2030** is adopted in 2019 to support sustainable development and guide green growth in Lao PDR. The Strategy aims to mainstream green growth into national, sectoral and local planning to transform Lao PDR' long-term development pathway and move economic growth away from a dependence on the exploitation of natural resources, in particular, mining, forestry and water resources.⁵⁵ While not exclusively climate change related, the links between green growth and climate change are so strong that

⁵² GoL (2021). Law on Irrigation. <https://www.maf.gov.la/wp-content/uploads/2015/12/7-%E0%BA%81%E0%BA%BB%E0%BA%94%E0%BB%9D%E0%BA%B2%E0%BA%8D%E0%BA%A7%E0%BB%88%E0%BA%B2%E0%BA%94%E0%BB%89%E0%BA%A7%E0%BA%8D%E0%BA%8A%E0%BA%BB%E0%BA%99%E0%BA%A5%E0%BA%B0%E0%BA%9B%E0%BA%B0%E0%BA%97%E0%BA%B2%E0%BA%99.pdf>

⁵³ MAF (2015). Agriculture Development Strategy to 2025 and Vision to the Year 2030

⁵⁴ GoL (2005). National Forestry Strategy: MAF

⁵⁵ GoL (2018). The National Green Growth Strategy to 2030: MPI. https://data.opendevelopmentmekong.net/dataset/e7db2aa8-c294-47dc-a2da-aa6e41493a12/resource/861b9f4c-cf6c-413b-aeff-e4f6b9346fd7/download/final_version_of_national_green_growth_strategy_english_feb_2019_.pdf

the strategy has a relevant part to play in climate actions. There is therefore a strong focus on climate change mitigation through the reduction in GHG emissions.

The recently approved **National Housing and Urban Development Strategy 2030** emphasizes the need for city development and the establishment of urban development strategies at all district and city levels in accordance with the national direction. The Strategy outlines objectives, policies, and programs in the urban sector, aligning with MPWT's long-term plans. It aims to develop all urban areas, from the capital city to village clusters, to gradually reduce the development gap between urban and rural areas, strengthen the capacity of urban management authorities, and create favorable conditions for civil society and the private sector to actively participate in urban management and development.⁵⁶ The Strategy also highlights responses to climate change impacts in line with Sustainable Development Goals (SDGs).

The **National Water and Water Resources Management and Usage Strategy towards 2030 and Vision toward 2040 (NSWRMU)**, recently adopted in 2023, is intended to guide policy until 2030. The vision of the Strategy focuses on the management and use of water and water resources according to the principle of integrated management, ensuring good quality and sufficient quantity to meet consumption and sustainable development, as well as reducing damage caused by water. This vision ensures environmental protection, effective climate change adaptation, and livelihood improvement. The Strategy primarily focuses on administrative management and water resources utilization, adhering to the principles of integrated water resources management (IWRM), guaranteeing good quality and sufficient quantity for consumption and sustainable development, and minimizing water-related damage. The Strategy has defined plans, goals, and detailed activities, including key areas such as integrated watershed management, managing the database-information system for water and water resources, water and water resources protection and restoration, groundwater management, water use related to water infrastructure, creation of financial mechanisms, human resources development, and cooperation with the international community.⁵⁷

The **Natural Resources and Environment Strategy 2016-2025 and Vision 2030**, approved in 2016, emphasizes the objective of achieving a "green, clean, beautiful, and rich natural resource base through green economic growth for sustainable development."⁵⁸ The strategy identifies priority targets, including land management and administration, water resources management, forest and biodiversity management, mineral resources management, and climate change. According to the review, although it promotes maintaining sustainable environmental quality in urban and rural areas in a green, clean, and beautiful manner and increasing Lao PDR's capacity to adapt to climate change and mitigate the effects of natural disasters, the strategy lacks detailed identification of adaptation actions and measures.

In summary, sectoral laws still do not adequately address climate change adaptation concerns, and they are not harmonized with each other. These include laws concerning forestry, land, water resources, environment protection, irrigation, and hygiene and health prevention, which have significant implications for climate change adaptation. At the policy level, although significant progress is being made in many sectors in terms of policy development, climate change adaptation has not been directly mainstreamed into several sectoral strategies and plans, including forestry, natural resources and environment, and green growth policies. The explicit review of sectoral strategies and development plans, climate change adaptation considerations, and indicators are provided in Appendix 4.

In terms of gender equality and social inclusion (GESI), Lao PDR has several policies and legal instruments relating to climate change as part of its commitment to the UNFCCC. These include its Decree on Climate Change, NSCC, NDC, which addresses both climate change mitigation and adaptation. The Decree on Climate Change is the country's first specific legal framework for its response to climate change. With regard to GESI, it does not mention gender roles, men, or women, or vulnerable groups either directly or indirectly nor the key concepts of equality and non-discrimination. It only focuses on the technical aspects of monitoring and data collection, but

⁵⁶ GoL (2023). Urban Development Strategy (2023-2030) and the Vision towards 2035

⁵⁷ GoL (2023). National Strategy on Water and Water Resources Management and Usage towards 2030 and Vision toward 2040

⁵⁸ GoL (2016). Natural Resources and Environment Strategy 2016-2025 and Vision 2030

not human impacts. The NDC 2021 also does not include references to the principles of equality and non-discrimination. Although some NDC targets likely yield significant benefits for women, but with the relatively limited integration of gender indicators into monitoring and evaluation, the needs of women are mostly not captured or used to inform future planning. The NDC only includes minor references to women, most specifically in the Appendix 2 on Health Adaptation Strategy (gender-equal participation in capacity building workshops and implementation plans on gender roles relating to climate change and health).

2.1.3 Enabling Environment Capacity Assessment

The sectoral stakeholders responsible for agriculture and forestry, urban development, water resources, and climate change participated in a comprehensive assessment. This section aims to evaluate the current capacity of the government entities in the related legal arrangements, strategies, policy and plan development, and mainstreaming on climate change, as well as to identify gaps and needs in developing and implementing a policy framework across all institutions. It also aims to assess the capacity of sectoral stakeholders regarding financial mechanisms, including funds and budgets allocated for climate change adaptation activities.

2.1.3.1 Survey Assessment Results

In general, out of 20 survey participants, 40 percent were female and 60 percent were male (Figure 2: Gender). Approximately 50 percent and 45 percent of respondents held bachelor's and master's degrees, respectively, in closely related fields such as business administration, ecology, hydrology, environmental science and management, rural development studies, housing engineering, architecture, agriculture, livestock science, and forestry. The majority (32 percent) identified their primary role as policy and planning, followed by 28 percent in project management (Figure 4: Primary role and responsibility). Most respondents (45 percent) lacked experience in climate change, while 40 percent had no experience in climate change adaptation planning (Figure 5: Climate change experience, and 6: Climate change adaptation planning). Survey results are included in Appendix 3.

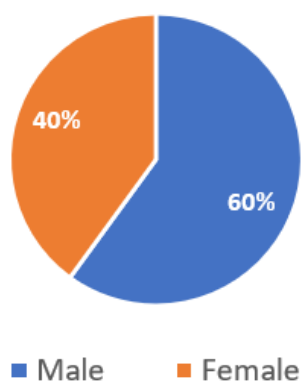


Figure 2: Gender

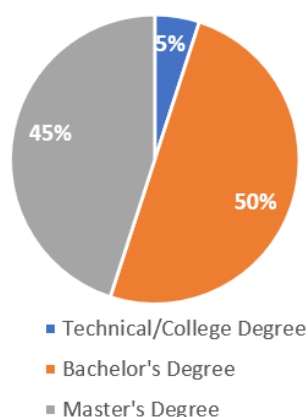


Figure 3: Highest educational attainment

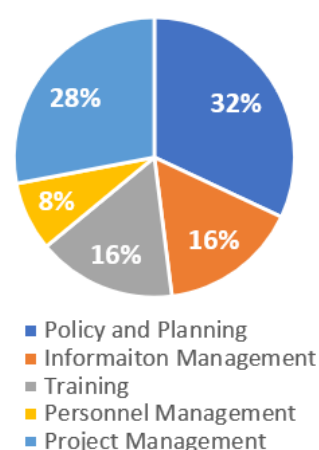


Figure 4: Primary role and responsibility

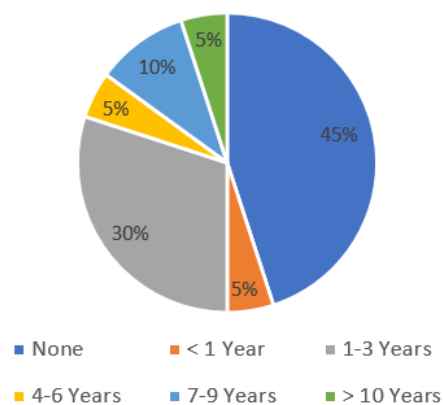


Figure 5: Climate change experience

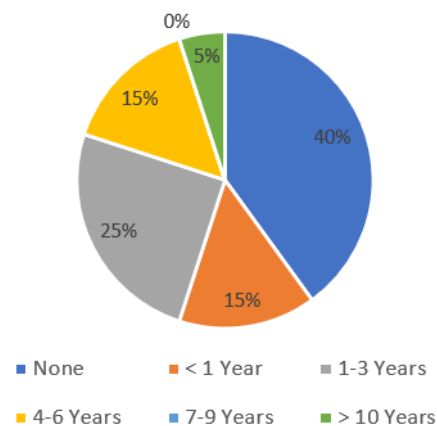


Figure 6: Climate change adaptation planning experience

Overall, the quantitative survey revealed that 65 percent of the assessed offices had policies, strategies, or plans related to climate change in place (Figure 7: Existing policies and strategies). Furthermore, approximately 70 percent of these offices had legislative instruments and frameworks, including laws and decrees for their sectors (Figure 8: Legislation instruments including laws and decrees). Notably, the majority of respondents (75 percent) reported that their offices had integrated climate resilience/adaptation into their main sectoral policies, plans, or strategies (Figure 9: Climate change mainstreaming in the sectoral policies and plans). Moreover, 70 percent of surveyed participants stated that there have been clear policies or guidelines on climate change mainstreaming in their offices (Figure 10: Clear policies and guidelines for climate change mainstreaming). About 60 percent of respondents also believed their offices effectively implemented policies and strategies related to climate change (Figure 11: Overall effectiveness of sectoral offices in implementing climate change related policies and plans). Additionally, most participants (45 percent) stated that the existing policies, plans, and strategies were clearly communicated and disseminated across all departments at a moderate level (Figure 12: Climate change related policies and plans clearly communicated and disseminated).

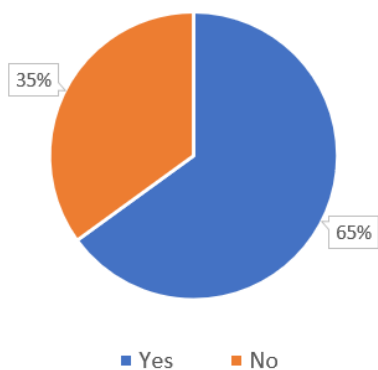


Figure 7: Existing policies, plans and strategies related to climate change

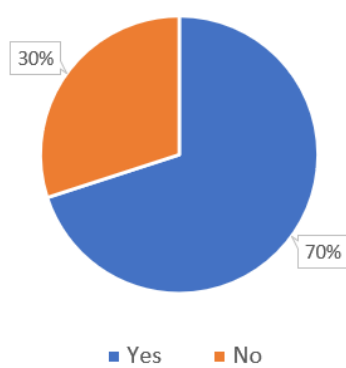


Figure 8: Legislation instruments including laws and decrees

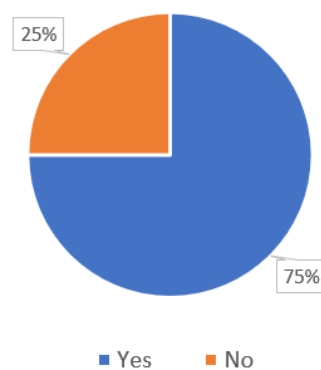


Figure 9: Climate change mainstreaming in the sectoral policies and plans

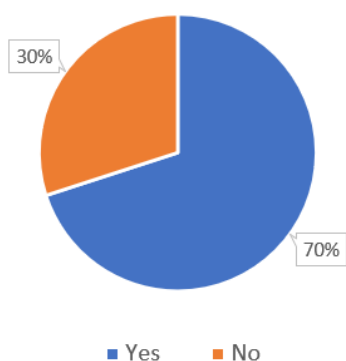


Figure 10: Clear policies and guidelines for climate change mainstreaming

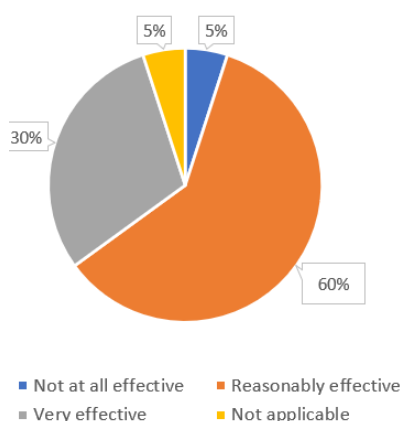


Figure 11: Overall effectiveness of sectoral offices in implementing climate change related policies and plans

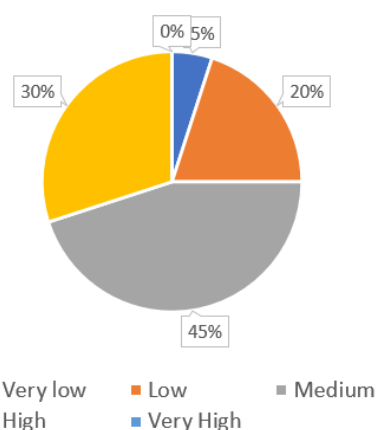


Figure 12: Climate change related policies and plans clearly communicated and disseminated

With regard to financial capacity, about 60 percent of the offices lacked budget allocation for climate change-related activities and projects (Figure 13: Budget allocation for climate change related activities). Among the respondents, 41 percent stated that most of the budget is allocated for policy and planning, followed by 29 percent for training and capacity development, and 18 percent for information management (Figure 14: Types of budget allocation). It is worth noting that a majority of participants (80 percent) indicated that the budget is insufficient for planning and implementing activities and projects related to climate change (Figure 15: Budget allocation sufficiency for climate change activities). Moreover, 65 percent of offices reported that they have not been allocated a budget for capacity-building programs on climate change adaptation (Figure 16: Budget allocation for capacity building program on climate change). However, more than half of the responding offices (62 percent) noted that the budget allocated for capacity-building programs related to climate change is reasonably and effectively managed within their offices (Figure 17: Overall effectiveness in managing budget to the capacity building program).

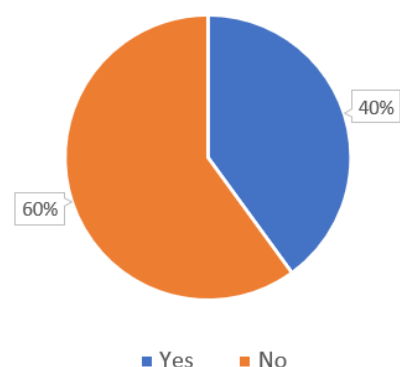


Figure 13: Budget allocation for climate change related activities

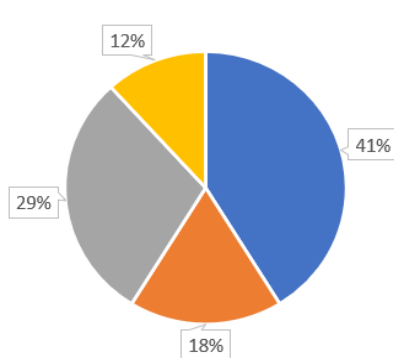


Figure 14: Types of budget allocation

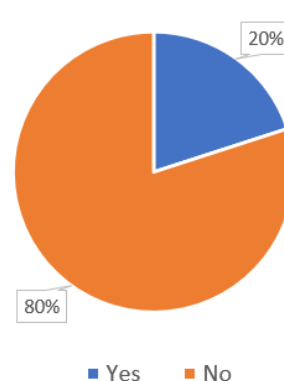


Figure 15: Budget allocation sufficiency for climate change activities

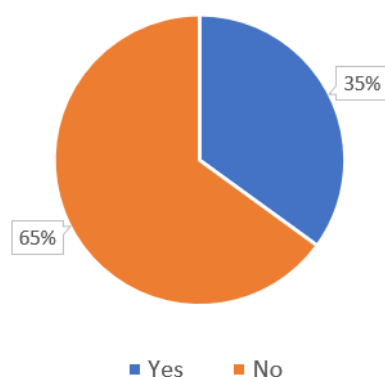


Figure 16: Budget allocation for capacity building program on climate change

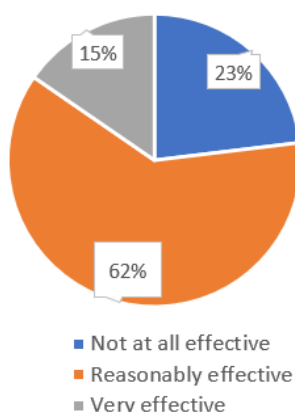


Figure 17: Overall effectiveness in managing budget to the capacity building program

2.1.3.2 Sectoral Capacity Assessment

2.1.3.2.1 Agriculture and Forestry Sector

Department of Planning and Cooperation (DPC), Ministry of Agriculture and Forestry (MAF)

The Department of Planning and Cooperation (DPC) is a key department responsible for planning matters under the MAF. It has developed the Five-year Development Plan for Agriculture, Forestry, and Rural Development (2021-2025). Additionally, MAF has developed the Plan of Action for Disaster Risk Management in the Agriculture and Forestry Sector (2022-2025), which is the first policy framework developed for disaster risk management and climate resilience enhancement. Several priority actions and measures related to climate change adaptation have been reported, including the integration of climate change adaptation into the agriculture development plans at all levels within the sector. Climate change has been mainstreamed into several policies and plans under MAF, especially into the Five-year Development Plan for Agriculture, Forestry, and Rural Development (2021-2025). This integration includes numerous targets indicating the objectives, goals, and activities related to climate resilience enhancement and the promotion of climate change integration in the plans.

However, there is currently no financial mechanism developed for climate change adaptation-related work under the MAF. Most of the financial support related to climate resilience has been funded through project supports and external donors. While government funding has been allocated for activity implementation, including capacity development, the majority has been allocated for priority works of the agriculture and forestry sector rather than for climate change. The DPC staff highlighted that the coordination of departments within the ministry and with other line ministries should be improved to avoid the duplication of work, particularly in policy and plan development regarding climate change adaptation.

Department of Agriculture, MAF

The Department of Agriculture (DOA) reports that it has not developed specific climate change-related policies and plans under the department. However, climate change has been initially mainstreamed into the current policies and plans of the agriculture sector, including climate change adaptation (CCA) and disaster risk reduction (DRR). An official from the DOA highlights that the department has also developed the Strategy on Agriculture Development 2025 and the Vision towards 2030, which define relevant adaptation measures in the Strategy.

Furthermore, the DOA has developed the National Policy on Crop Production Promotion of the Lao PDR, which was recently endorsed in 2023 and emphasizes the importance of climate change adaptation. The Policy mentions climate change adaptation as one of the priority policies, especially in Policy 6 in Part III of the document, 'Policy for Crop Risk Management', which includes the promotion of support and the use of modern

technology, smart agriculture in production, and enhancing climate resilience in crop production and management, including the use of climate-smart agriculture (CSA).

Similarly, the DOA has not developed a financial mechanism for the department. Apart from project funding support from development partners and donors, the DOA has only received funding support of 500 million kip (USD20,000) from the government for 2024. However, this funding is not allocated for CCA-related activities. The DOA staff also adds that in the past, the department was only allocated some budget from the government for recovery after disaster incidents. However, specific budget allocation for climate resilience development and disaster prevention has never been allocated.

DOA staff suggest that sufficient budget allocation is crucial, especially as climate change is currently becoming a threatening issue for the agriculture sector. Additionally, there is a need for staff capable of handling climate change-related work, as the department lacks staff with experience and background in climate change. Furthermore, modern technology and techniques for reducing the impacts of climate change are reported to be urgently needed for the agriculture sector, such as an early warning system.

Department of Livestock and Fisheries, MAF

The Department of Livestock and Fisheries (DLF) reports that there are no specific policies and plans developed for climate change adaptation within this sector. Despite the absence of specific policies and plans for climate change and its mainstreaming within this sector, the DLF has applied hydrological information in project and activity planning. For example, they select fish varieties based on the climate context.

Similar to other departments, no financial mechanisms have been established, and there are no projects or funding supports for climate change adaptation under the DLF. DLF staff suggest that climate change urgently needs to be mainstreamed into the policies and plans under the DLF, as it is not progressively integrated into any policies and plans of the DLF compared to other departments within the agriculture sector.

Department of Forestry, MAF

The Department of Forestry (DOF) notes that there are several policy and legal frameworks developed for the forestry sector, including the Law on Forestry, the National Forestry Strategy, and relevant decrees. In particular, the National Forestry Strategy towards 2035 and the Vision towards 2050 are under revision and expected to be enacted by 2024. Climate change has been progressively mainstreamed into the policies and plans of the forestry sector over the last decades. However, it is highlighted that as the forestry sector focuses on climate change mitigation rather than climate change adaptation, adaptation has not been well mainstreamed into this section.

There has been one financial mechanism developed for the forestry sector titled the 'Forestry Protection Fund,' which receives funding support from various sources, including reparation costs from investment and development projects such as railway and hydropower projects, and carbon credit/trade (in progress). Although there is funding support from development projects for the forestry sector, the financial resources for capacity development related to climate change remain insufficient for the DOF. Funding for capacity development activities is still significantly required. Nevertheless, capacity development on climate change, including Training of Trainers (ToT) for climate change planning for relevant staff, is needed for the DOF.

National Agriculture and Forestry Research Institute, MAF

The official interviewed reports that the National Agriculture and Forestry Research Institute (NAFRI) has developed several policies and plans related to climate change in recent years. This includes the Five-year Strategy on Agriculture and Forestry Research Institute, which prioritizes climate change as a key focus, and the Research Plan on Agriculture and Rural Economy towards Climate Change Adaptation. Importantly, climate change adaptation has been initially mainstreamed into NAFRI's research policies and plans, with a focus on promoting crop varieties and techniques resilient to climate change.

Regarding mainstreaming, NAFRI has integrated climate change into its policy framework through the 'Policy on Research Promotion on Climate Resilient Crop'. Additionally, NAFRI has developed relevant guidelines and manuals for farmers, known as 'Sustainable Agriculture Techniques'. The institute has also developed climate modeling and projections on floods and droughts, along with a crop calendar on rice planting based on weather information received from MONRE. Furthermore, the institute has created several guidelines on weather forecasting and rice planting, as well as provided guidance on crop management and techniques. Overall, NAFRI has progressively developed relevant policies and plans related to climate change, demonstrating a comprehensive approach to addressing the challenges posed by climate change.

Regarding funding, NAFRI has been allocated 500 million kip (USD20,000) for implementing work related to agricultural research. Out of this amount, 50 million kip is allocated for climate change research, which is a priority for NAFRI. The institute has also allocated some budget for research and policy development work, including research on crop and livestock varieties that are resilient to climate change, as well as studies on techniques and experiments related to climate-related agriculture and forestry.

Despite the development of relevant policies and plans under NAFRI, it is crucial to enhance cooperation with international partners and organizations for research work. This cooperation is essential for adopting applicable technology and best practices from international partners and implementing them in Lao PDR. This includes rolling out and piloting climate-resilient crop and livestock varieties for farmers at all levels. Furthermore, the low capacity of relevant staff remains a key gap in enhancing climate resilience. Therefore, NAFRI staff suggest that capacity development, including training on climate change topics such as applying climate-resilient varieties and CSA techniques, is needed for staff at both policy-making and technical levels. Additionally, sufficient budget allocation is critical for mainstreaming climate change into relevant policies and plans, not only within NAFRI but also within other relevant departments of the MAF.

2.1.3.2.2 Urban Development Sector

Department of Housing and Urban Planning, Ministry of Public Works and Transport (MPWT)

Numerous national regulations and urban planning guidelines have been established for the urban development sector. According to the interview, the 1999 Urban Planning Law underwent revision and received approval in November 2017. Although the revised law does not contain any specific articles related to climate change, it mandates that disaster risks be considered in all construction projects. Additionally, the DHUP is working on two significant laws, the Law on Architecture and the Law on Housing, which are expected to be endorsed soon.

The development of the Building Code, supported by JICA, is currently in progress. While green building practices have been incorporated into the code, disaster risk management (DRM) and climate resilience have not been directly integrated. Notably, the Strategy on Housing and Urban Planning (2023-2030) and the Vision towards 2035 have been recently endorsed by the Government. This strategy includes the development of checklists and guidance for urban development throughout the country. During the discussion, an official noted that only disaster risk and climate resilience aspects have been considered in the strategy. Moreover, the short-term Development Plan for Housing and Urban Planning (2023-2025) has also been approved in 2023, indicating the inclusion of climate change adaptation in Strategy 3 of the Plan, according to the DHUP staff.

The Goal 6 of the Five-Year Development Plan 2021-2025 for the public works and transport sector is related to Sustainable Urban Development. This goal focuses on developing integrated infrastructure in urban areas to be safe, green, comfortable, environmentally sustainable, integrated with regional and internal connectivity, and following criteria ensuring empathy with local characteristics while balancing development between urban and rural areas. It also aims to reduce environmental pollution, greenhouse emissions, waste, and the impacts of natural disasters. The department has also developed guidelines on urban development which consider the aspect of climate resilience. Despite the absence of a specific climate change adaptation policy developed for the urban planning sector, climate change has been initially integrated into key policies and plans of the sector.

One of the key barriers to climate change mainstreaming faced by the DHUP is the staff turnover, which hinders continuity in coordination between the DHUP and other sectors and departments working on climate change, including capacity development on climate change.

There is no financial mechanism developed within the urban planning sector, with most funding support channeled through external projects. Building the capacity of staff on climate change is an urgent need for the DHUP. Training activities on advanced climate change adaptation should be provided to most staff in the department. Moreover, although climate change has been mainstreamed into several policies and plans of the urban development sector, the department still faces issues with mainstreaming, including the lack of clear roles for each division in the DHUP. Therefore, clear roles and responsibilities regarding project implementation related to climate change should be defined among the divisions.

Department of Road (DOR), MPWT

To facilitate the implementation of the 9th Five-Year National Socio-Economic Development Plan (NSEDPP) for 2021-2025, the Ministry of Public Works and Transport has established 10 Overall Goals in the Five-Year Development Plan 2021-2025 for the public works and transport sector. Goal 4 specifically focuses on climate resilience, aiming to develop public works and transportation infrastructure that is stable and resilient to disasters. The goal is to enhance the quality and resilience of infrastructure development to ensure that public works and transport networks are built and maintained with standards that provide safe and reliable facilities in all weather conditions.⁵⁹

The Department of Roads (DOR) staff reports that the department has developed a sub-plan related to climate change titled the 'Prevention Plan on Climate Change', which was derived from the Five-year Development Plan of the MPWT. Additionally, DOR has formulated the Five-year Development Plan for Road-Bridge (2021-2025), which incorporates climate resilience to some extent. In addition to the policy framework, DOR has also developed relevant guidelines such as the Guideline on Landslide Prevention for the Road Sector. Overall, climate change has been progressively considered and mainstreamed into several policies and plans of the DOR in recent years.

One of the key challenges faced by the DOR in mainstreaming climate change and development is the lack of ongoing capacity development for staff, as many of them have a low level of understanding and technical knowledge of climate change. Furthermore, budget deficiency is also a significant constraint for implementing the department's climate change mainstreaming work.

In term of related fund, there are two main funds – one is the Road Fund under MPWT, and the other is the Emergency Fund for disaster events overseen by the Ministry of Labour and Social Welfare. However, there is no fund provided by external or international organizations for the road sector in case of an emergency. However, a fund called the 'Road Fund' has been allocated by the Government for road repairs in case of emergency events such as road damage due to severe disasters. Only 600-700 billion Kip is allocated per year for this fund, with around 20 percent further allocated for local government. Moreover, the department has currently received funds through a JICA-funded project titled 'LRSP-2', which provides specific funding for preventing disaster risks in the road sector, especially landslides and floods.

It is recommended that capacity development training be provided for staff under the DOR, with a focus on ensuring the continuation of the training provisions. This should include training on writing proposals to access relevant funds for climate change. The issue of staff turnover should be addressed in the long-term. Furthermore, climate change-related plans should be further developed for the department, and efforts should be made to enhance climate change mainstreaming into relevant policies and plans at all levels of the sector. Finally, ensuring sufficient budget provision and capacity to access possible funding sources is also an urgent need for the department to enhance the development of climate change mainstreaming. More important, the National Adaptation Plan for the road sector is also urgent needed for the road sector according to DOR staff.

⁵⁹ MPWT (2021). 5-year Development Plan for Ministry of Public Works and Transport (2021-2025)

Public Works and Transport Institute (PWTI), MPWT

Similar to other departments, PWTI staff notes that the Institute has developed a policy related to climate change called the 'Plan on Climate Resilience Development for Public Works 2020-2025'. Additionally, the PWTI has been developing the Development Plan for PWTI, which is derived from the Five-year Development Plan of the MPWT and includes climate resilience as a key priority of the plan. This is expected to be approved by 2024.

Despite the initial integration of climate change into the policy framework of PWTI, staff highlights that PWTI still faces challenges in climate change mainstreaming, particularly the lack of staff with experience or background in climate change adaptation, affecting their capacity to identify appropriate adaptation measures for the public works and transport sector. Budget deficiency is also a key challenge for the development and implementation plans, as well as for achieving the climate targets set in the plan.

There is no funding mechanism developed for climate-related work under the PWTI. However, it is reported that the fund for the PWTI is under development, with consideration given to climate change adaptation. Strengthening the capacity and technical knowledge of staff on climate change is a critical need for PWTI in both quantity and quality aspects. Although some staff have been appointed as the focal contact for climate change-related committees, their capacity has not been strengthened in recent years. Furthermore, sufficient budget allocation is crucial for the relevant work, especially for climate change, which is a key priority for this sector. Importantly, mandates regarding climate change should be enhanced and made clear in each division.

2.1.3.2.3 Water Resources Sector

Department of Water Resources (DWR), MONRE

The Department of Water Resources (DWR) has played a pivotal role in developing essential regulations and policies for water resources. The DWR has been proactive in crafting and updating the Law on Water and Water Resources (1990, 2017, 2020, and 2022). Additionally, the Government enacted the 2021 Decree on River Basin and Water Reservoir Management, aligning with the Law on Water and Water Resources. This decree delineates principles, regulations, and measures for the management, monitoring, and inspection of river basins and water reservoirs, aiming to safeguard and sustainably utilize water while balancing ecological systems and contributing to the nation's socio-economic development.

The recently approved National Water and Water Resource Management Strategy (NWWRMS) towards 2030 marks the country's inaugural water resource management strategy. The Strategy prioritizes the following aspects: "Management and use of water and water resources according to the principle of integrated management, ensuring good quality and sufficient quantity to meet consumption and sustainable development, as well as reducing water-related damage." To achieve this vision, the National Water and Water Resources Management Strategy has delineated plans, goals, and detailed activities, including key areas such as integrated watershed management, database-information system management for water and water resources, protection and restoration of water and water resources, groundwater management, water use related to water infrastructure, creation of financial mechanisms, human resources development, and cooperation with the international community.⁶⁰

Moreover, DWR officials have disclosed the department's efforts in developing River Basin Management Plans (RBMPs) with support from development partners and government entities within MONRE. Lao PDR has 62 sub-river basins, most of which are part of the Mekong River Basin, except for Nam Sam, Nam Ma, and Nam Neun. MONRE has set an ambitious goal to develop and endorse 14 Sub-River Basin Management Plans. However, only 11 Sub-River Basin Plans have been approved so far, including Nam Ngum, Nam Ou, Nam Theun-Kading, Nam Tha, Nam Khan, Nam Xebangfai, Nam Xebanghiang, Nam Xekong, Nam Xedon, Nam Ngiep, and Nam Xeuang. Out of these 11, seven Sub-RBMPs have been officially promulgated by the Prime Minister's Office.

⁶⁰ MONRE (2023). National Strategy on Water and Water Resources Management towards 2030

The DWR official indicates that while the budget for developing RBMPs is not the main challenge, funding for implementing the programs and activities mentioned in the RBMPs is lacking. In essence, although the DWR is responsible for developing RBMPs, their implementation remains challenging due to reliance on related sectors. Some activities and programs are not well-implemented and are difficult to monitor, revealing a coordination gap due to the lack of mechanisms for coordination and reporting among sectors.

In the water sector, a funding mechanism exists for water resources management. The Department of Water Resources (DWR) has been actively developing and revising the Law on Water and Water Resources since 2017. The revised law established a funding mechanism called the "Fund for Water and Water Resources," similar to the Environmental Protection Fund (EPF) as provided for in the Law on Environmental Protection. This fund receives money from various sources, including fees for restoring water resources from investment projects and activities, and service charges for water use and wastewater discharges.

Furthermore, DWR staff mention that projects with water-related activities must develop a Water Management Plan, such as hydropower projects, and the DWR is responsible for reviewing and approving the plan. Despite the revised law's emphasis on developing Water Management Plans, many project developers have not approached the DWR to create plans or pay water use fees. The DWR cites a lack of proper dissemination of relevant laws and regulations as the main reason for this gap, as many developers are either unaware or have limited understanding of the revised law. Therefore, it is crucial to disseminate information about relevant laws and regulations to key stakeholders and strictly enforce the Law on Water and Water Resources for all water-related projects.

In addition to the legal and policy framework, the DRM official highlights the need to develop plans related to climate change adaptation, including the development of the Emergency Response Plan on Droughts and Floods in both the short and long term and at different levels.

Department of Meteorology and Hydrology (DMH), MONRE

The Law on Meteorology and Hydrology, revised in 2017, establishes principles, regulations, and measures to manage and monitor meteorology and hydrology activities. Its purpose is to ensure timely and accurate data provision that can be integrated at a regional and international level, contributing to national socio-economic growth in line with green and sustainable development and national security. Several articles in the Law address climate change, including climate information and data management.⁶¹ As the work of the DMH is directly related to climate change, it has developed several policy documents, including the development of a Roadmap on Climate Change and the Five-year Development Plan for Meteorology and Hydrology, derived from the Five-year Development Plan of MONRE.

There is no national funding mechanism dedicated to meteorology and hydrology work. Most funding comes from projects and the government, covering the implementation, management, improvement, and maintenance of weather stations. However, the DMH has received fees from weather and climate data provision services, which are collected for the maintenance of meteorological and hydrological tools, such as weather stations. Additionally, the DMH receives specific funding support from the MRC for maintaining weather forecast stations in the Mekong River Basin, as per the 1995 Mekong River Agreement. However, stations located outside this river basin are not covered, and insufficient budgets pose challenges for monitoring.

Regarding climate resilience, the staff interviewed reports urgent needs for expanding the capacity of the early warning system, especially for floods and water levels in the main rivers of Lao PDR. There is a need to improve the capacity for reporting weather-related events in terms of quality and accuracy. Although weather stations have been set up and expanded across the country in the last decade, some are not well maintained and damaged. Some districts or provinces still lack weather stations, making budget allocation for expanding and maintaining weather stations an urgent need. The DMH also recommended strengthening cooperation with countries that have model climate change adaptation initiatives. This involves sharing lessons on model implementation and

⁶¹ GoL (2017). Law on Meteorology and Hydrology

the roles of climate change adaptation with relevant sectors. Furthermore, the department has recommended the establishment of a mechanism for monitoring and evaluating (M&E) work implementation to ensure continuous achievement of the set goals and targets in each period.

Department of Waterway (DOW), MPWT

The Department of Waterway (DOW) under the Ministry of Public Works and Transport (MPWT) has developed several laws and regulations related to waterway management. The country enacted its first Law on Waterway in 2022, and the department has also created legislative documents such as Regulations on Water Transport, Transport, Agreement on Waterway Construction Material Management, Decree on Rock, Sand and Black Soil Management. However, these regulations are outdated and require revisions to align with the 2022 Law on Waterway. Notably, a National Strategy on Waterway has not been developed yet, primarily because the waterway sector is relatively new compared to other sectors under the MPWT. Additionally, insufficient funding presents a challenge for prioritizing the development of this strategy compared to other sectors.

Despite signing a Memorandum of Understanding (MOU) with the Government of Korea in 2019 to develop the National Strategy on Waterway, there has been little progress in this area.

One of the primary challenges in developing and implementing legal and policy documents is the lack of human capacity. According to officials, only a few staff members have graduated from overseas institutions with qualifications in waterway management, as there are no local academic institutes offering specialized majors or subjects related to waterways. Consequently, most staff members have graduated in similar fields such as engineering, road and bridge, or transport.

Department of Irrigation (DOI), MAF

The Department of Irrigation (DOI) has reported that revisions to the Law on Irrigation are underway, with an anticipated approval by 2024. It is reported that there is an article in the draft Law which mentions climate change adaptation. Around 11 orders and regulations related to irrigation have been developed to date. However, many of these are outdated and require updates in accordance with the revised Law. Financial constraints remain a significant obstacle in updating these regulations. Notably, a national irrigation strategy has yet to be developed.

Despite efforts to establish this strategy for several years, progress has been hindered by insufficient government funding and a lack of human resources with the necessary expertise. The development and drafting of such a strategy require experienced and knowledgeable staff. Additionally, the department has created various technical guidelines and manuals pertaining to irrigation, supported by numerous projects and development partners, including guidelines on irrigation construction, management and use, capacity development in irrigation management, and flood protection in agricultural areas.

An official also reports during an interview that a financial mechanism called the 'Irrigation Development Fund' exists for managing irrigation systems, including water fees, repairs, and maintenance across the country. This fund is divided into two types – the Water Use Associate Fund and the Water Use Group Fund – based on the size of the villages they serve. However, both funding mechanisms have not been effectively managed and implemented, primarily due to limited capacity. According to the DOI official, out of 2,000 water use associates across the country, only 60 can effectively manage the funding themselves, including repairing, improving, and maintaining irrigation systems as needed. As a result, capacity-building efforts are essential for staff involved in managing these funding mechanisms.

Regarding capacity, staff reports that capacity development for the staff is needed, especially for those working directly at the Water Gate Stations in the main rivers of the country. This capacity development includes training on disaster response and prevention, as well as climate resilience development for irrigation work. In terms of the policy framework, it is suggested that a Response Plan on Disasters or Climate Weather Events, focusing on droughts, should be developed in alignment with the development plans of the MPWT and the DOI.

Department of Energy Planning and Policy (DEPP), Ministry of Energy and Mines

The Ministry of Energy and Mines (MEM) oversees all energy-related activities in Lao PDR, including hydropower. The Ministry comprises several departments responsible for energy programs and projects, including the Department of Energy Management, Department of Energy Enterprise, Department of Energy Planning and Policy, and Department of Energy Safety. The Department of Energy Planning and Policy (DEPP) is primarily involved in water management related to hydropower projects, as well as policy and plan development for this sector. This department has developed numerous policies and strategies related to energy and water management in recent years, including the Policy on Sustainable Hydropower Development in Lao PDR (2015), Policy Guidelines for the Implementation of Policy on Sustainable Hydropower Development in Lao PDR (2016), the Five-year Strategy on Hydropower Development 2021-2025, and the Agreement on Water Management for the Energy Sector (under revision).

However, it is observed that some policy documents are outdated, having been developed more than 10 years ago, while some strategy documents are under revision. According to the interview, climate change has not been directly integrated into the relevant policies and plans of the department. The department's mandate related to water management within the energy sector has led to significant consideration of the water sector in its main policy documents. Although climate change has not been considered, many policies and plans have emphasized disaster risk management, focusing on water management in river basins to prevent floods and droughts.

In terms of key gaps in policy and plan implementation, the DEPP staff states that the lack of strong enforcement of relevant regulations and laws in the energy sector remains a significant challenge. Many are unaware and do not follow the relevant laws and regulations, particularly the requirement for compliance. For instance, some developers, despite being aware of the law, try to avoid paying additional fees for water use due to ambiguity among relevant laws of Lao PDR. Most project developers follow the Concession Agreement (CA), developed based on the Law on Government Asset, which broadly covers fees for natural resource use, including water resources. However, in some cases, developers resist paying additional fees for water use as required by the Law on Water and Water Resources, arguing that the CA already covers these fees. Consequently, disseminating relevant laws and regulations to key stakeholders is crucial for enhancing their understanding of the laws. Furthermore, the relevant laws must be clear and strictly enforced for all project developers.

2.1.3.2.4 Other Key Sectors and Departments

Department of Climate Change (DCC), MONRE

The Department of Climate Change (DCC) staff interviews reveal that the new National Climate Change Strategy was recently endorsed in 2023. Additionally, the DCC is in the process of developing the National Adaptation Plan (NAP) for Lao PDR, which will replace the country's 2009 National Adaptation Programme of Action (NAPA) and link key adaptation measure priorities with the Nationally Determined Contributions (NDC) revised in 2021. The NAP document has been recently developed under the project 'Building the Capacity of the Lao PDR Government to Advance the National Adaptation Planning Process'. Apart from this project, the DCC is also implementing the NAP Green Climate Fund (GCF) funded projects with GGGI and UN-Habitat, focusing on mainstreaming climate change into key policies at both sectoral and local levels.

In terms of the legal framework, staff reports that the DCC also developed the Decree on Climate Change, which was endorsed in 2019. The Decree outlines principles and measures for both climate change mitigation and adaptation, and promotes mainstreaming climate change into the development plans of sectors at all levels.

Regarding challenges and gaps, DCC interviews cited slow progress on Lao PDR's policies, mainly attributed to the coordination system and capacity in the target sectors. Insufficient funding and Monitoring and Evaluation (M&E) pose further challenges for policy implementation, such as the NDC, where the government heavily relies on donors. Although MONRE has developed several climate change policies and plans, their effective implementation is hindered by a lack of financial support. DCC emphasizes that inadequate sustainable funding is a primary barrier to enhancing capacity building and effectively implementing climate-related policy, including

mainstreaming, especially when it comes to internal funding support, as most climate-funded activities heavily rely on international donor assistance for both climate change mitigation and adaptation.

Notably, staff disclosed that DCC has recently requested 300 million kip (USD14,000) from the Department of Planning and Finance (DPF), MONRE for implementing climate change activities, including capacity development and policy dissemination activities at different levels. However, the request is still pending approval. A delay in the approval process of the requested budget from the Ministry remains unaddressed, often resulting in ineffective implementation and delivery of the department's work, especially the capacity development work. Thus, this issue needs to be addressed.

Department of Planning and Finance (DPF), MONRE

The Department of Planning and Finance (DPF) is a key department in MONRE responsible for planning and developing relevant plans and policies for the natural resources and environment sector, including the Five-year Development Plan for Natural Resources and Environment (2021-2025). It is reported that climate change has been initially taken into account in the plan since the 2010s, with climate change adaptation being a priority focus for MONRE, aiming for achievement by 2025. This includes reporting and implementing the revised 2021 Nationally Determined Contribution (NDC) and developing the National Adaptation Plan (NAP).

In addition to these current plans, staff notes that the DPC, as the focal point for the natural resources and environment working group, developed and endorsed the Natural Resources and Environment Strategy 2016-2025 and the Vision towards 2030 in 2015. The Strategy promotes mainstreaming sustainable environmental quality in both urban and rural areas and increasing Lao PDR's capacity to adapt to climate change and mitigate the effects of climate-related disasters.

Regarding capacity, the staff mentions that budget deficiency is still a key gap in effectively developing and mainstreaming climate change into the relevant plans and policies of other departments under MONRE. Lack of competent staff is also a challenge in implementing the developed policies and plans. Although there are sufficient staff, many of them do not have specific knowledge or background in climate change adaptation in particular.

It is reported that there is no specific funding mechanism set up in DPF for climate change. However, DPF has been appointed as the National Designated Accreditation (NDA) and focal point for climate-related funds such as the Global Environment Facility (GEF) and Green Climate Fund (GCF). Staff also highlights that there are currently four staff members appointed as the NDA for the GCF under the DPF. Additionally, DPF acts as the budget and finance administrator of MONRE. It is revealed that the central government allocates an annual funding of 2.5-3 billion kip for MONRE. This amount is then allocated to each department based on their work plan and proposal, covering areas such as policy and plan development, capacity development of staff, as well as policy dissemination activities. However, staff reveals that there is a delay in delivering the requested fund for some departments due to the review and approval processes.

The DPF staff states that building staff capacity on climate change, especially in climate finance, is an urgent need for the DPF, including training delivery. Although staff appointed for the NDA have capacity and a better understanding of climate change and climate finance, many of them still have a low level of understanding in this area. Some have not had the technical or relevant background on climate change. The interviewed staff also proposes the need to develop guidelines on Climate Change Mainstreaming into Sectoral and Local Plans, and the necessity to disseminate the developed policies and plans on climate change, such as the climate change strategy and NDC, to the sectoral and local government entities.

Department of Environment (DOE), MONRE

The Department of Environment (DOE), a key department under MONRE responsible for environment management and project inspection, including mandates on air pollution controls, environment impact assessment, promotion, and inspections, has not developed directly climate change-related policy documents.

The department has established the 'Law on Environment Protection', which serves as the cornerstone of the country's environmental legislation. However, climate change has not been well addressed in this law.

Additionally, the department has developed the 'Decree on Environmental Impact Assessment (EIA)' for development projects. Although the decree does not directly mention the need for climate vulnerability assessment, it requires project developers to conduct risk assessments on disasters as part of the project preparation processes prior to construction. However, only large-scale projects such as the Xayaboury Hydropower Project have conducted these risk assessments. Furthermore, the DOE has created the 'Guideline on Environmental Impact Assessment' and the 'Guideline on Policy Document on Green and Clean School Development', but these documents have not directly emphasized the importance of climate resilience. The policy document on Green and Clean School focuses on providing guidance on waste and plastic bag reduction as well as greenhouse gas (GHG) reduction in schools. Despite the development of several legal and policy documents under the responsibilities of the DOE, climate change adaptation has not been mainstreamed or addressed in many of them.

The DOE reports that there is no specific funding mechanism for climate change; instead, funds are allocated for the monitoring and inspection of development projects, received from various sources such as hydropower and mining project developers. The DOE expresses an interest in capacity development for the relevant staff, particularly in training provisions on advanced climate change adaptation, such as climate risk and vulnerability assessment (CRVA) for development projects. The development of guidelines focusing on mainstreaming and guidance on conducting CRVA for development projects is also considered an urgent task.

Environment Protection Fund (EPF), MONRE

The Environmental Protection Fund (EPF), an organization under the jurisdiction of MONRE, is primarily responsible for managing funds related to natural resources and the environment, including funding received from investment projects, hydropower and mining projects, as well as service charges for natural resource use. EPF has developed the Guidance on Funding Mobilization Policy of the Environmental Protection Fund, which is categorized into 6 financing windows: Policy and environmental capacity enhancement (PECE), Biodiversity conservation including forests and community development (BC), Environment including pollution control (EPC), Sustainable water resource management (SWRM), Sustainable land management (SLM), and Climate change. Funding mobilization of EPF for climate change has increased from 5 to 10 percent for 2021-2025. Additionally, EPF has developed the Five-year Development Plan for EPF (2021-2025), the Strategy towards 2025, and the Vision towards 2030, with climate change being a priority funding window in the plans and the strategy.

In terms of challenges, the process of requesting funding for climate change-related areas from the EPF is noted to be lengthy and complex, often resulting in delays in approval or even rejection of requests. This process involves not only the EPF but also requires technical approval from the relevant departments and the Department of Planning and Finance. Regarding capacity, the staff notes that the lack of staff with a better understanding of climate change remains a key gap in capacity, leading to delays in policy and plan-related implementation. Therefore, more competent staff on climate change adaptation are required not only for policy development but also for climate change mainstreaming in the ongoing policy and plan documents of the EPF.

Currently, the EPF has funded several projects related to climate change. One of these projects is the funding support for the climate change initiative for the Lao Women Union, which includes an activity focusing on strengthening the climate change capacity of women at the local levels and developing guidelines on climate change and gender inclusion. Additionally, another climate change initiative recently funded by the EPF has been provided to the Ministry of National Defense, although the EPF staff could not provide details on this initiative. As mentioned earlier, the delay in reviewing and approving proposals remains a key challenge for EPF fund mobilization. In most cases, the approval process takes much longer, sometimes up to a year, according to EPF staff.

Although climate change is one of the key funding windows of the EPF policy, funding in this area is not well mobilized and accessed. Therefore, promoting access to this potential funding is crucial. Building the capacity of relevant staff is needed to access the fund, especially by strengthening the capacity of local staff in preparing funding proposals. The development of guidelines in proposal writing and steps in accessing funds is also

suggested as urgent work to enhance fund mobilization for climate change efforts, including developing and mainstreaming climate change into local plans.

Department of Activity (DOA), Lao Youth Union (LYU)

The Department of Activity is a key department under the Lao Youth Union (LYU). Apart from its main roles in youth-related awareness-raising activities, it is responsible for promoting environmental protection for youth and has a role in responding to disasters, such as providing assistance in disaster rescue and recovery. The department has developed several policies and plans, including the Strategy on Youth Development (2021-2030) and the Five-year Direction Plan for Lao Youth Development (2021-2025). It was reported during the interview that the Strategy emphasizes the importance of environmental protection and awareness-raising promotion in Section Five. However, the strategy does not consider climate change. On the other hand, the Five-year Direction Plan has prioritized disaster risk reduction (DRM) as an activity, focusing on raising awareness about disaster risk reduction, rescue provisions, and emergency responses such as floods and fires. Although climate change has not been indirectly considered in the LYU's policies and plans, DRM has been included in its key policies. Specifically, the department has developed its own Disaster Management Plan as an internal policy guiding document for responding to emergency events.

In terms of needs, developing the capacity of the staff related to both climate change and DRM is critical, especially in providing training on climate change mainstreaming and awareness-raising for the youth. Additionally, financial capacity is needed to develop and mainstream climate change adaptation into relevant policies and plans. Financial support is also required for policy development and mainstreaming, as the department still relies on project support or development partners. Moreover, the low number of staff in the department, especially the lack of staff with capacity and knowledge in both climate change adaptation and DRM, remains a key gap in enhancing policy development and mainstreaming. It was revealed that there are only 17 staff members in the department, with none having a relevant background in climate change and DRM in particular. Therefore, capacity development for staff on climate change and DRM, in both general and in-depth topics, is the most needed for this department compared to other key sectors.

Department of Ethnicity (DOE), Lao Front for National Development (LFND)

An official from the Department of Ethnicity (DOE) under the Lao Front for National Development (LFND) reports that several policies and plans have been developed in recent years. These initiatives include the Five-year Development Direction for the Lao Front for National Development (2021-2025) and the 2017 Decree on Ethnicity, which identifies natural resources and environmental protection as one of its 15 key policies. Notably, the Decree emphasizes the importance of climate risk and vulnerability assessments (CRVA) in its Article 15. However, there is a notable absence of a specific climate change adaptation plan or policy tailored for the LFND. Apart from these policy frameworks, the DOE has also created several guidelines to support environmental and natural resource protection, including a Guideline on Green and Clean for community-level awareness campaigns.

Despite these developments, the implementation of these policies and plans faces obstacles due to limited financial support and project engagement. The DOE highlights that the lack of initial participation in project development is a significant barrier to effective involvement in relevant activities since the DOE's mandate is primarily focused on community awareness initiatives. Moreover, the department's absence from pertinent projects and activities is another key challenge in achieving the objectives outlined in the plans and policies. Although plans and policies have been developed, the lack of climate change and environmental protection-related projects, along with insufficient funding from both governmental and international sources, continues to impede the effective policy implementation of the LFND. Therefore, DOE staff emphasizes the importance of securing financial support and adequate project involvement as essential factors in enhancing the effectiveness of policies and plans, not just for the DOE but also for other departments within the LFND.

Department of Development in Women (DDW), Lao Women Union (LWU)

In Lao PDR, the Lao Women's Union (LWU) plays a pivotal role in promoting gender equality and combating discrimination against women. As a mass organization, the LWU is dedicated to women's advancement and the promotion of gender equality. Within the LWU, the Department of Women's Development (DDW) is responsible for environmental and climate change-related projects and activities. Recent policy framework developed by the DDW include the Five-year Development Plan for the Lao Women's Union (2021-2025), which has strategically prioritized environmental protection as one of its ten critical policies. Furthermore, the DDW has formulated a National Action Plan for Gender Equality (2021-2025), which distinctly incorporates disaster risk reduction (DRR) and the development of climate resilience for women as a primary focus. Similar to many departments, there is an absence of a specific climate change adaptation plan for the LWU. Outside of these policy frameworks, DDW has crafted several environmental and natural resource protection guidelines to support work with local communities and women groups.

Despite the LWU's progressive development of a policy framework centered on gender equality, staff members have identified challenges in integrating climate change considerations, most notably the lack of financial support. Funding for policy development often relies on projects and external donors. Furthermore, a staffing shortfall presents an additional obstacle for the development and execution of plans, particularly the scarcity of personnel with experience or expertise in climate change adaptation. It has been disclosed that the DDW comprises only 13 staff members, none of whom specialize in climate change or DRR. Therefore, building the capacity of staff in relation to climate change is essential, notably through training in climate change integration and gender equality awareness. In addition, financial resources are crucial for developing and integrating climate change adaptation measures into the relevant policies and plans.

Summary

Quantitative assessment generally revealed that most offices in all sectors have established legal and policy frameworks and instruments related to their sectors and climate change. Moreover, many of them have clear policies or guidelines on climate change in their offices. However, most offices still lack budget allocation for climate change-related work, particularly policy and capacity development activities.

Qualitative analysis consistently indicated that most sectoral offices have established national policy and legal frameworks for their sectors, with some notable examples including the Law on Forestry, Law on Water and Water Resources, Law on Disaster Management, Law on Waterway, Law on Irrigation, Law on Environment Protection, Decree on Climate Change, National Strategies on Forestry, Climate Change, Agriculture, Water and Water Resources, River Basin Management Plans, and Policies on Sustainable Hydropower Development. However, financial limitations remain significant challenges to implementing these policies and regulations at the sectoral level. Additionally, low human resource capacity, such as a lack of technical staff and inadequate technical knowledge among existing staff, poses challenges for developing and mainstreaming climate change adaptation into their sectoral plans.

Regarding financial mechanisms, most offices have not established financial mechanisms, including departments of MAF (DPC, DOA, DLF), MPWT (DHUP, DOW, PWTI), and MONRE (DCC, DOE). Funding for capacity development activities on climate change is still significantly required for most departments and offices. Nevertheless, capacity development on climate change, including Training of Trainer (ToT) for the relevant staff, is needed for most sectors.

2.2 Institutional Level Capacity

The section on institutional capacity begins with a review of broader institutional structures, horizontal and vertical governance in relation to climate change, and other relevant sectors in Lao PDR. Subsequently, it delves into the institutional capacity of the sectoral government entities, identifying gaps, challenges to be addressed, and capacity development needs. In terms of data collection, a total of 50 participants attended both the data collection workshop and bilateral meetings during the data collection activities conducting from March-May 2024. (For details, refer to Appendix 1: List of interviewees and data collection workshop participants.)

2.2.1 Institutional Framework Review on Climate Change

Climate change was initially dealt with under the umbrella of the environment but there has been an increasing focus on it as a standalone issue (albeit within the Environment arena). Over the past two decades there have been many institutional changes relating to climate change but the current key ministry is the Ministry of Natural Resources and Environment (MONRE), which was established in 2011. In depth understanding of climate change and technical capacity is concentrated in MONRE.

MONRE's responsibilities include establishing coordination mechanisms amongst line ministries and development partners at national and local levels, strengthening the climate change policy and regulatory framework, formulating and implementing projects to access finance, and monitoring and evaluating climate finance, and capacity building from central government to local levels. The current structure of MONRE consists of 12 concerning departments and department-equivalent offices, including:⁶²

1. Cabinet Office
2. Department of Personnel and Staff
3. Department of Inspection
4. Department of Planning and Finance
5. Department of Land
6. Department of Water Resources
7. Department of Environment
8. Department of Natural Resources and Environmental Monitoring
9. Department of Meteorology and Hydrology
10. Department of Climate Change
11. Natural Resources and Environmental Research Institute, and
12. Lao National Mekong River Committee Secretariat

MONRE has a total of 638 staff, out of which 258 are female. MONRE operates on a three-tier structure, encompassing national, provincial, and district levels. Key MONRE departments for climate change are the Department of Climate Change (DCC) and the Department of Meteorology and Hydrology (mandates to early warning and climate data management). Specifically, DCC is a key department responsible for the developing of the laws, regulations, strategies and policies related to the climate change, including implementing of projects and programs at the national level.

The DCC's mandate spans monitoring, promoting, evaluating, and reporting on climate change implementation, including the development and preparation of the National Climate Change Strategy (NCCS), the Nationally Determined Contribution (NDC), National Communications on Climate Change (NC), and the National Adaptation Plans (NAP). It also serves as the national focal point for climate change actions, particularly those related to the United Nations Framework Convention on Climate Change (UNFCCC). In addition.⁶³ According to the recent mandates defined by MONRE,⁶⁴ the DDC has specific duties and responsibilities as followed:

1. Implement laws and resolutions, decrees, agreements, orders and notices on climate change management related work;
2. Implement the policy of the government including strategies, plans and resolutions regarding climate change management work as detailed strategic plans, plans, programs and projects;
3. Create, implement and review the management plan, and development of programs, projects and activities related to climate change mitigation and adaptation;
4. Create, develop and manage information management system for climate change;

⁶² MONRE (2022). MONRE Mandates. <http://www.monre.gov.la/index.php/2018-07-09-15-05-58/2018-07-09-15-09-11>

⁶³ UNEP (2018). GEF CBIT Resubmission, Strengthening Lao PDR's institutional capacity to comply with the Enhanced Transparency Framework under the Paris Agreement

⁶⁴ MONRE (2023). Mandates of DWR. <http://dwr.monre.gov.la/>

5. Develop and update agreements, guidelines, manuals and technical recommendations on climate change;
6. Manage, inspect, monitor and evaluate the implementation of strategic plans, programs and projects related to climate change;
7. Review and present to the government to improve the department's organizational structure, manage, determine positions, create plans for upgrading, building, and improving personnel structure, including promoting gender roles, monitoring the implementation of rights, duties and responsibilities of staff in accordance with the regulations;
8. Cooperate with domestic, foreign and international organizations to provide technical support and expertise in climate change management;
9. Manage finance, assets and documents of the Department as well as make budget plans and summarize reports on the activities of the Department to the Ministry;
10. Perform other duties as defined in the law, regulations and as assigned by the Minister.

At the sub-national level, the Natural Resources and Environmental Offices at provincial level (PONRE) and District level (DONRE) were established to take over the functions of natural resources and environment management including climate change (see Figure 18). PONRE is the focal point for climate change on the sub-national level, and coordinates the provincial offices of other sectors from the local line ministries such as the Ministry of Agriculture and Forestry (MAF), the Ministry of Public Works and Transport (MPWT) as well as DONRE with regards to climate-related activities including promoting policy, collecting data and monitoring and evaluating. PONRE reports regularly to the provincial governor office, as well as to MONRE through an appointed official who coordinates with the national level. Apart from climate change, PONRE also have an active role in monitoring investments as their mandate includes environmental management control and the impacts of investments on the environment.

PONREs have about 5 units, including Planning and Personnel; Land; Water Resources, Meteorology, and Climate Change; Environment; and Natural Resources and Environment Inspection units. The responsibilities of Climate Change staff include collecting and managing data, coordinating and implementing the relevant projects and activities as well as raising the awareness of other sectors, including private sector.

Administrative Level		Administration	
Central	Ministry of Natural Resources and Environment (MONRE) – 638 staff (258 female) - Water Resource Dept. - Land Dept. - Environment Dept. - Climate Change Dept. - Etc.		Government
			
Provincial	Provincial Office of Natural Resources and Environment (PONRE) - Environment and Climate Change Unit	Coordination and Administration 	Provincial administration Office/Governors

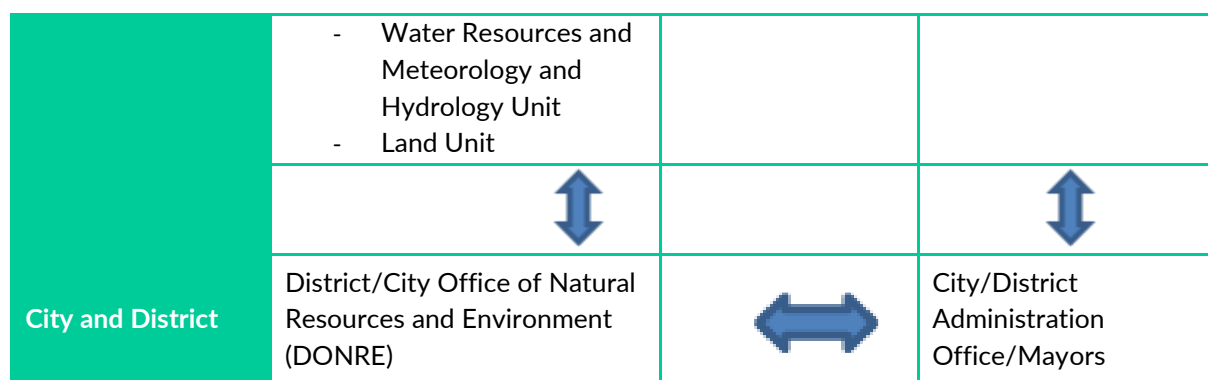
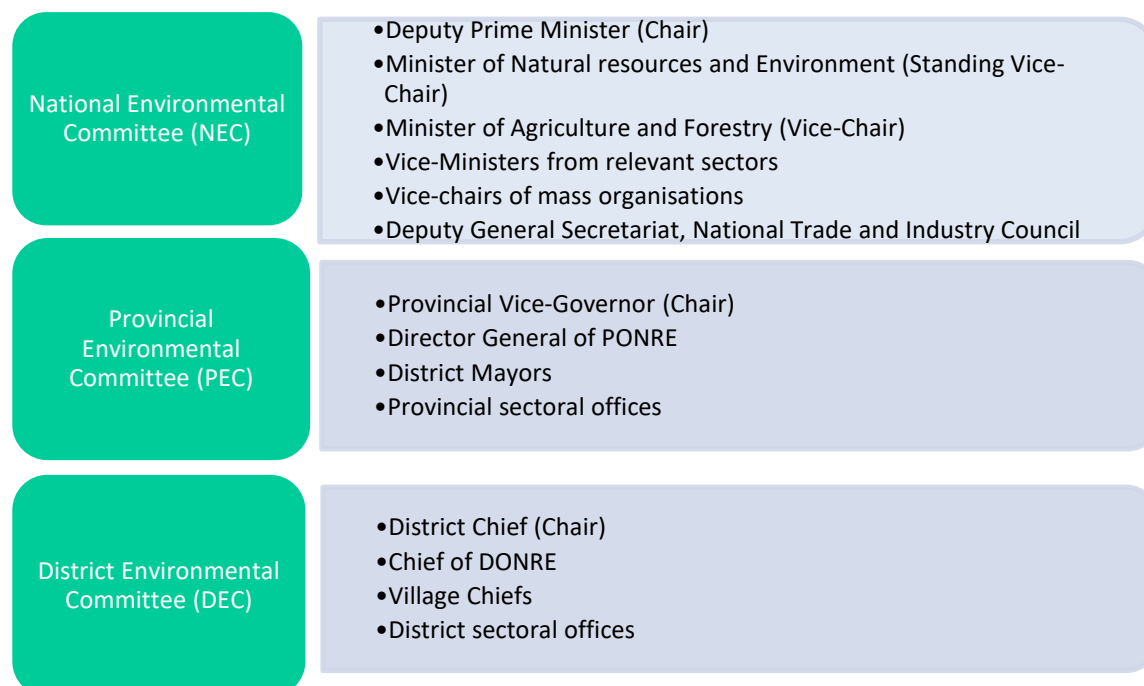


Figure 18: Organizational structure of natural resources and environment offices at different levels

Moreover, Lao PDR has a comprehensive and progressive institutional framework and has established agencies to work cross-sectoral to support natural resource management and environment within the (MONRE). There have been many institutional changes as the climate change governance system evolves.

In 2009, the **National Environment Committee** (NEC) was established through Decree No. 162/PM, dated June 21, 2009, which defined the roles, responsibilities, scope of rights, organizational structure and work plan of the National Environmental Committee. It also defined the principles of implementation of work, coordination of decision-makers on environmental management related to many sectors at the center and coordination on the management, monitoring and solving of environmental problems effectively throughout the country.

The NEC is also composed of high-level representatives from various related sectors with the Deputy Prime Minister as the chairman of the committee, which will have joint meetings as necessary to solve environmental problems. In addition, this committee has been established at the local level, including the provincial and district levels (see Figure 19).



Source: UN-Habitat, 2018

Figure 19: Environment Committee structure at different levels

Since the approval of the Climate Change Strategy in 2010, the Technical Working Group on Climate Change (TWGCC) was established in 2013 and closely integrated into the NEC.⁶⁵ The TWGCC is the focal point for coordination between sectors, and it meets as the need arises, providing technical guidance on climate change strategies and action plans, adaptation plans, GHG inventories, and UNFCCC requirements such as National Communications, NDCs and Biennial Update Reports (BURs). However, the TWGCC are currently inactive and not met regularly. Apart from the MONRE as a chaired, the TWGCC comprises senior representatives from following ministries:⁶⁶

- Ministry of Agriculture and Forestry
- Ministry of Public Works and Transport
- Ministry of Energy and Mines
- Ministry of Health
- Ministry of Industry and Commerce
- Ministry of Education and Sports, and
- Lao Women's Union

Apart from the NEC, the **National Steering Committee for Climate Change (NSCCC)** is currently being developed and expected to be endorsed by 2024. The committee mandates are expected to include the work on mitigation and adaptation to climate change. The new steering committee is important to the process of creating the NAP plan, especially in the process of considering and approving the plan. In addition, the main roles of the NSCCC related to climate change include:

- Consider approving draft policies, strategies, legislation and action plans related to climate change to propose the government to approve;
- Guide and lead the development of the policy guidelines, laws and regulations regarding climate change that have been set from time to time into plans, plans and detailed projects of various sectors and then present to the government for consideration and adoption;
- Provide direction and solution of climate change issues related to relevant sectors and parties both domestically and abroad;
- Advise and provide comments to the government on climate change adaptation and mitigation that have affected the national economy and the lives of ethnic groups;
- Provide the direction on acquisition of financial and technical assistance from foreign countries and international organizations to contribute to the implementation of programs, plans and projects related to climate change; and
- Encourage, monitor and inspect the implementation of climate change management at the central and local levels.

In Lao PDR, the implementation of the climate change is expected to be under the mandate of various agencies and stakeholders, including the MONRE, Ministry of Forestry and Agriculture (MAF), Ministry of Public Works and Transport, Ministry of Energy and Mines, Ministry of Industry and Mines, Ministry of Labor and Social Welfare, academic institutions, CSOs, International Organizations, private sectors, and local governments. Specifically, MONRE's responsibilities in relation to climate change include setting up coordination mechanisms among various ministries and development partners at both national and local levels. They are tasked with enhancing the policy and regulatory framework for climate change, designing and executing projects to secure funding, and monitoring and evaluating climate programs. Moreover, they are responsible for building capacity from the central government down to local levels. MONRE also bears the responsibility for coordinating the implementation of the climate related activities and required follow-up actions with sectoral government

⁶⁵ UNEP (2020). Building the Capacity of the Lao PDR Government to Advance the National Adaptation Planning Process: Project Document

⁶⁶ MONRE (2009). Lao PDR National Adaptation Programme of Action (NAPA). https://www.adaptation-undp.org/sites/default/files/downloads/laos_pdr_napa.pdf

offices.⁶⁷ The specific roles and responsibilities of the key stakeholders and offices involved in the climate change are detailed in table 6.

Table 6: Roles and responsibilities of the key stakeholders involved in the climate change adaptation

Stakeholder Institution	Stakeholder Mandates
Department of Climate Change (DCC), Ministry of Natural Resources and Environment (MONRE)	MONRE's mandate is to act as a secretariat and regulator for natural resources and environment including the management of water, air, biodiversity, minerals, climate change, meteorology and hydrology. Its responsibilities also include developing the natural resources and environment policy and regulatory framework, formulating and implementing projects, and enhancing capacity building from central government to local levels. Key MONRE department for climate change is the Department of Climate Change (DCC), which has a mandate on macro-developing and implementing policy frameworks related to climate change, including the National Climate Change Strategy (NCCS), the NDC, the National Adaptation Plans, etc.
Department of Planning and Finance (DPF), MONRE	DPF acts as a coordinator of the MONRE responsible for the overall direction, macro-management of regulation of the environment and natural resources within the whole country. It is also responsible for budgeting at the ministerial level and developing of the directives, policies and plans of the government relating to the natural resources and environment.
Department of Meteorology and Hydrology (DMH), MONRE	DMH has mandates on developing and implementing laws and resolutions, decrees, agreements, orders, notices and instructions on meteorological and hydrological work. Regarding climate change, it is in charge of weather-related, climatic, and hydrological data, monitoring frameworks, and early warning systems. ⁶⁸
Department of Water Resources (DWR), MONRE	DWR is a key department responsible for the developing of the laws, regulations, strategies and policies related to the water and water resources, covering surface water, wetlands, reservoirs, ground water, storage for water supply and water zoning; and researching and studies on water resources. The department mandate also focuses on strengthening the national capacity for water resource management and developing of regulations on water use of development activities. ⁶⁹
Lao National Mekong Committee Secretariate (LNMCS), MONRE	LNMCS is a department-equivalent office under MONRE, which has mandates on developing and implementing laws, decrees, agreements, orders, notices and policies issued by the government and related to the Mekong River Agreement of 1995 and international cooperations in the area of Mekong River Basin Management. ⁷⁰
Department of Land (DOL), MONRE	DOL is the key actor in land management which has roles on developing relevant policies, decrees, regulations, and rules and principles on land management, undertaking land surveys, land classification and land use planning at the local, regional and national levels, and coordinating with concerned sectors and local administrations to plan the use of land, to protect and define land areas for certain uses, and to monitor such land use.

⁶⁷ MONRE (2022). Lao PDR NAP Roadmap

⁶⁸ MONRE (2023). Mandates of DMH. <http://dmh.monre.gov.la/index.php/2018-07-09-15-05-58/2018-07-09-16-00-28>

⁶⁹ MONRE (2023). Mandates of DWR. <http://dwr.monre.gov.la/>

⁷⁰ MONRE (2023). Mandates of LNMCS. <http://lnmcs.monre.gov.la/>

Stakeholder Institution	Stakeholder Mandates
Environment Protection Fund (EPF), MONRE	EPF has a mandate under the MONRE to strengthen environmental protection, sustainable natural resources management, biodiversity conservation and community development. It is an autonomous national entity, both financially and administratively and currently channels financial resources from World Bank, UNDP and domestic sources.
Department of Planning and Cooperation (DPC), Ministry of Agriculture and Forestry (MAF)	MAF has the role on the macro-management of policy, economic integration, investment, project management related to agricultural and forestry work including crop, livestock, fisheries and forestry sectors. Particularly, the DPC has specific mandates on implementing laws, decrees, other legislation of the upper level and various legislation of the MAF, and integrating the policies of the party and the government on agriculture, forestry and rural development into specific plans and projects of the ministry as well as to manage, monitor and evaluate the related activities. ⁷¹
Department of Agriculture (DOA), MAF	DOA has a mandate in managing of crops and crop processing to promote the production of food crops, commercial crop production, domesticate supply and export following safe and clean agriculture and environmentally friendly policy. ⁷²
Department of Livestock and Fisheries (DLF), MAF	DLF is responsible for the protection, promotion, and sustainable production as well as use and management of aquatic resources. It carries out regulatory and enforcement functions, proposes and implements policies and strategies, provides extension services, as well as collects and disseminates information related to livestock and fisheries in the country.
Department of Irrigation (DOI), MAF	DOI has the role in macro-management regarding the development of various irrigation systems by using surface water, underground water, using renewable energy to pump water where there are conditions and building the infrastructure of the drainage system to prevent droughts, floods and use irrigation water to be highly efficient in relation to the development of agriculture in the direction of sustainable and modern industrial transformation. It is also responsible for creating, updating, publicizing and evaluating the implementation of laws, legislations, policies, strategic plans, programs and projects related to the irrigation. ⁷³
National Agriculture and Forestry Research Institute (NAFRI), MAF	NAFRI is mandated to undertake integrated agriculture, forestry and fisheries research in order to provide technical information, norms and results which help to formulate strategy in accordance with government policies. NAFRI also has other roles on carrying out adaptive research, developing methods, tools and information packages, providing policy feedback, and coordinating and managing research covering land-use planning and assessments of changes in forest cover and biomass.
Department of Planning and Cooperation (DPC), Ministry of Public Works and Transport (MPWT)	MPWT is responsible for the overall direction, macro-management and regulation of road and air transport, railways, housing, urban planning and water supply within the whole country. DPC of the MPWT, in particular, is responsible

⁷¹ MPWT (2017). Mandates of DPC.

<https://dopc.maf.gov.la/%e0%ba%97%e0%ba%b5%e0%bb%88%e0%ba%95%e0%ba%b1%e0%bb%89%e0%ba%87-%e0%bb%81%e0%ba%a5%e0%ba%b0-%e0%ba%9e%e0%ba%b2%e0%ba%a5%e0%ba%b0%e0%ba%9a%e0%ba%bb%e0%ba%94%e0%ba%9a%e0%ba%b2%e0%ba%94/>

⁷² MAF (2023). Mandates of DOA. <https://doa.maf.gov.la/about/1>

⁷³ MAF (2023). Mandates of DOI. <http://doir.maf.gov.la/pdf/legal07.pdf>

Stakeholder Institution	Stakeholder Mandates
	for developing of the directives, policies and plans at the ministerial level and of the government relating to the public works and transport nationwide. ⁷⁴
Department of Transport (DOT), MPWT	DOT is a key department responsible for the transport related work including the development of the related policies, strategies and regulation, looking after the registrations of the vehicles as well as the road safety system and standard development across the country.
Department of Waterway, MPWT	DOW has mandates on developing and implementing the policies, laws, regulations, technical standards of the government as well as the Ministry of Public Works and Transport regarding waterway works. Specifically, the Department's roles cover the macro-managing, improving and promoting water transportation as well as issue licenses. It also manages the construction, maintenance and repair of coastal defenses, urban flood prevention, improvement of navigation channels along the Mekong River and other rivers, and manages of minerals and sand along the rivers that are related to various activities and construction projects of the Mekong River. ⁷⁵
Department of Road (DOR), MPWT	DOR has the role of supporting the MPWT in the macro-management of road and bridge related works in the country, including developing and implementing laws, decrees, legislation, policies, programs and projects of the Ministry related to road and bridge.
Department of Housing and Urban Planning (DHUP), MPWT	DHUP is responsible for the developing of the laws, regulations, strategies and policies related to the urban development sector, including implementing of urban development strategy, policies, projects and programs at the national level. Regarding climate change adaptation, the Department has a mandate on managing wastewater design and construction including stormwater management and drainage system development in urban areas, and issuance the relevant regulations and technical standards.
Public Works and Transport Research Institute (PWTRI), MPWT	PWTRI is a department-equivalent office under MPWT responsible for planning, studying, researching, evaluating, and disseminating its scientific, technical, technological and research studies as well as being a scientific advisor to the Public Works and Transport sector. ⁷⁶
Department of Planning and Cooperation, Ministry of Health (MOH)	MoH is the main provider of health services to the Lao population. Particularly, DPC has a mandate in health policy development and managing the decentralization of health services to all levels. Specifically, it has a role on developing and implementing of the directives, policies and plans of the government relating to health at the national and ministerial level.
Department of Hygiene and Health Promotion (DHHP), MOH	DHHP is responsible for developing the strategic plans and regulations on the management and inspection of hygiene, disease prevention and health promotion for the submission to the Government for consideration. The Department also has a role in macro-managing and controlling water hygiene of drinking (Nam Sa-aat) and domestic water as well as WASH sector which include a process of water treatment, such as boiling, filtration, disinfectant, water production and services in accordance with the standards of drinking and domestic water as determined by the Ministry of Health.

⁷⁴ MPWT (2023). Mandates of MPWT.

<https://www.maf.gov.la/%e0%ba%9a%e0%ba%b1%e0%ba%99%e0%ba%94%e0%ba%b2%e0%ba%81%e0%ba%bb%e0%ba%a1/>

⁷⁵ MPWT (2017). Mandates of DOW. <https://www.mpwt.gov.la/en/departement-of-waterways>

⁷⁶ MPWT (2023). Mandates of PWTRI. <https://www.mpwt.gov.la/en/public-works-and-transport-research-institute>

Stakeholder Institution	Stakeholder Mandates
Department of Energy Policy and Planning, Ministry of Energy and Mines (MEM)	MEM oversees the management of all energy-related activities in Lao PDR including hydropower; and the investment in the mining projects. It is specifically responsible for developing policies and strategies, supervising electricity company businesses and implementing laws and regulations. Department of Energy Policy and Planning, in particular, is responsible for macro-policy planning and developing of energy related strategies and policies.
Department of Energy Management (DEM), MEM	DEM is responsible for drafting energy laws, guidelines, safety standards and regulations. DEM also acts as a monitoring body over government agencies, private entities, and state-owned enterprises to ensure they are following all rules and regulations developed by MEM.
Department of Planning (DOP), Ministry of Planning and Investment (MPI)	MPI is the government agency responsible for the government administration of planning and investment, researching strategies, Master Plans, planning for National Socio-Economic Development Plan (NSEDPP), developing mechanisms and policies related to economic management, statistics, the promoting and managing of domestic and foreign private investment of Lao PDR. ⁷⁷ Department of Planning, in particular, is responsible for developing of ministerial- and national level plans, including drafting the national development plans of Lao PDR, and managing investment related budget.
Department of International Cooperation, MPI	DIC is the organization that is responsible for coordinating Official Development Assistance (ODA) projects among the development partners and government counterpart organizations. It also oversees the government contribution budget for the ODA projects.
Department of State Budget, Ministry of Finance (MOF)	MoF is the final decision maker for government resource allocation, and has a mandate on managing the recurrent budget directly. MoF is also responsible for the allocation of budget across all levels and sectors. Particularly, the Department of State Budget is responsible for the budget for the national expenditure, financial tracking and reporting.
Ministry of Education and Sports (MES)	MES is responsible for the development and delivery of basic and higher education. The Ministry participated in the development of national Climate Change Strategies and policies and is currently mainstreaming climate change in higher education curricular.
- Lao Women Union (LWU) - Lao Youth Union - Lao Front for National Construction	CSOs in the Lao PDR has a role in engaging in awareness raising, and advocacy for various thematic areas, including sustainable development, food security, natural resource management, climate change, human rights, gender inclusive and education. Specifically, the CSOs are importantly strategic partners in climate change, as they work mainly with the local communities. Especially, LWU is a mass organization and key institution working for promoting gender equality and preventing discrimination against women, which represents and advocates for the rights of women and children at all levels.
- Lao National Chamber of Commerce and Industry (LNCCI) - Banks and Micro-finance Institutes	The private sector, particularly the banking sector, small and medium enterprises and private sector representatives play an important role in driving the country's climate change policy development, and mainstreaming activities.

⁷⁷ MPI (2017). Mandates of MPI. <https://investlaos.gov.la/about-us/ministry-of-planning-and-investment/>

Stakeholder Institution	Stakeholder Mandates
Burapha, SilviCarbon, Mekong Timber Plantation, and Green Discovery Laos	
Academia Institute, National University of Laos (NUOL)	Undertaking studies and research in related fields
Development Partners: - UN Agencies (UNEP, UN-Habitat, UNDP, etc.) - GGGI - World bank - ADB - Etc.	The development partners have a role in participation in the consultation activities and can provide inputs which provided orientation on linkages for the project with past, present and future donor sponsored climate change activities.

Source: Author

Other government sectors may indirectly involve in climate change in Lao PDR, including the Ministry of Planning and Investment (MPI), which plays a significant role, with a mandate to attract private sector investment in Lao PDR in an attempt to catalyze rapid economic growth.⁷⁸ The MPI is also responsible for the government's and regional administration of planning and investment, researching strategies, mechanisms and policies related to economic management, statistics, the promotion and management of domestic and foreign private investment of Lao PDR, to attract and seek assistance and international cooperation. As such the MPI is usually the entry point for Development Partners at both central and local levels, through their provincial and districts' offices. Under the MPI, the Department of Planning acts as the central coordination agency for development planning. It also organizes and coordinates the preparation and execution of the Five-Year National Socio-Economic Development Plan (NSED), and the associated sectoral and provincial Five-Year Development Plans. These plans provide the basis for resource allocations by MPI and MoF during the five-year implementation period of the plans.

Additionally, the Ministry of Finance (MoF) is the final decision maker for government resource allocation. It manages the recurrent budget directly while the development/investment budget is managed by MPI. Crucially, MoF is responsible for the allocation of budget across at all levels and sectors including climate change and DRM. Meanwhile, the industry and energy sector which are a rapidly growing sector in Lao PDR and serve to catalyze foreign investment and generate employment, falls under the mandate of the Ministry of Industry and Commerce and Ministry of Energy and Mines (hydropower project investment).

In practice, with the number of climate change related projects increasing in Lao PDR, sectors implement these projects and activities independently of one another. Although coordination mechanisms are being developed amongst stakeholders working in the climate change areas through projects implementation, sectors rely on MONRE to disseminate climate change related information, plans and tools, as well as to provide support in accessing finance and build capacity towards the implementation of the plans and activities. It is imperative that all relevant projects align with the existing documents and with MONRE aims and objectives. However, MONRE does not have the resources for sustained capacity building, creating a barrier to disseminating climate change related capacity from MONRE vertically to PONRE and DONRE, and to other sectors.

⁷⁸ IDRC (2017). Understanding Institutional Challenges for Urban Planning in Vientiane Capital, Lao PDR. <https://www.tei.or.th/thaicityclimate/public/research-24.pdf>

2.2.2 Institutional Level Capacity Assessment

The institutional level capacity assessment in this section primarily focused on information obtained from key stakeholders regarding the relevant projects and programs being implemented and managed in the areas of climate change adaptation, considering both quantitative and qualitative aspects. This included evaluating institutional capacity for implementing, managing, and monitoring these projects. Additionally, the assessment examined data and information management, including national information systems (databases) for their sectors and climate change. It also addressed main areas concerning institutional capacity for participation, coordination, as well as monitoring and evaluation (M&E) of the relevant activities.

2.2.2.1 Survey Assessment Results

The existing projects and programs were reviewed in the survey, revealing that half of the surveyed offices had different climate change adaptation-related projects or programs being implemented (Figure 20: Climate change adaptation related projects or activities being implemented). Additionally, approximately 60 percent of respondents indicated that the relevant projects and programs are effectively managed and implemented by their offices (Figure 21: Overall effectiveness of sectoral department in managing projects). The survey assessment also showed that 85 percent of the offices surveyed believed their staff were capable of effectively implementing projects and activities related to climate change (Figure 22: Staff capability in implementation of climate change projects).

In terms of data management, half of the surveyed offices have a database system for data collection, consolidation, and dissemination or sharing of knowledge products from projects on their sectors and climate change (Figure 23: Existing database systems related to sectors or climate change). Furthermore, nearly two-thirds of offices were able to access information or databases on climate change to support decision-making (Figure 24: Accessibility to information or database on climate change). Notably, 65 percent of respondents indicated that the management of the relevant knowledge and information was reasonably effective (Figure 25: Overall effectiveness of sectoral departments in managing knowledge).

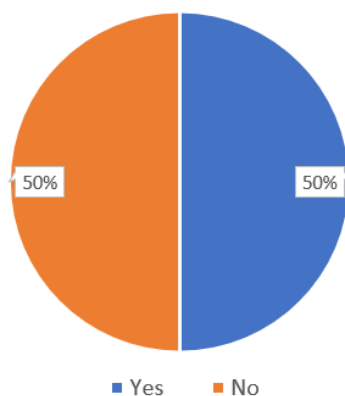


Figure 20: Climate change adaptation related programs, projects or activities being implemented

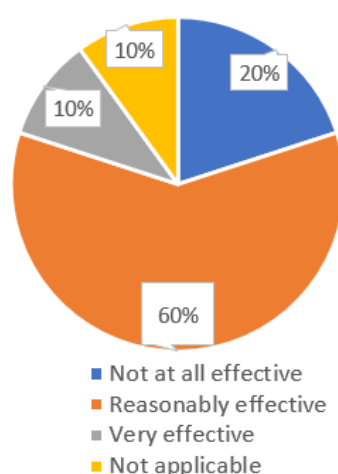


Figure 21: Overall effectiveness of sectoral department in managing projects related to climate change

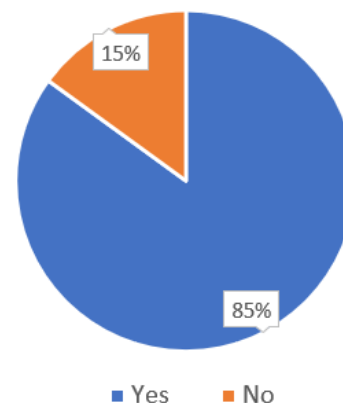


Figure 22: Staff capability in implementation of climate change related projects

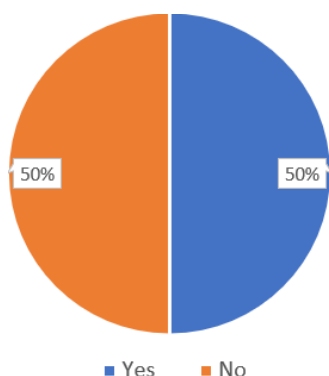


Figure 23: Existing database systems related to sectors or climate change

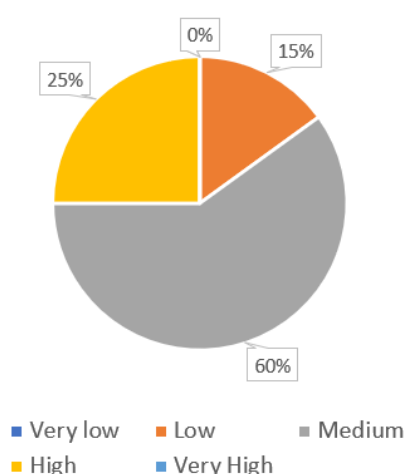


Figure 24: Accessibility to information or database on climate change to support decision-making

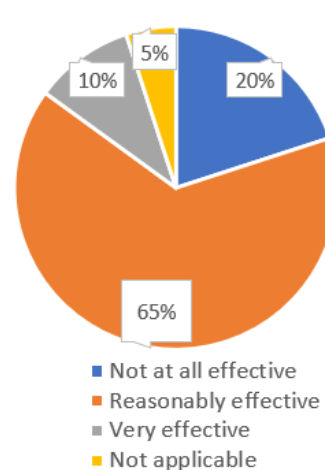


Figure 25: Overall effectiveness of sectoral departments in managing knowledge and information

Regarding coordination, approximately 75 percent of the surveyed offices have institutional mechanisms to involve multiple stakeholders (e.g., private sector, academics, CSOs, and communities) in the relevant activities (Figure 26: Existing institutional mechanisms for the involvement of multiple stakeholders). Moreover, about 70 percent of them reported that their offices' overall effectiveness in coordinating with other government agencies is relatively reasonable (Figure 27: Overall effectiveness of sectoral departments in coordination). Notably, 95 percent of respondents stated that their office staff are competent in coordinating and partnering with other stakeholders (Figure 28: Staff competence in sectoral departments in coordination).

In terms of participation, three-fourths of the respondents notably revealed that civil society organizations (such as Lao Women Union, Lao Youth Union, etc.) have been included in capacity development program consultations or activities (Figure 29: Social inclusion in the consultation process or activities). Additionally, all surveyed offices stated that women staff have been encouraged to participate in consultations or capacity development program activities (Figure 30: Female staff encouragement in the consultation or capacity development programs). Furthermore, the majority of them (90 percent) also believed that gender inclusion has been mainstreamed in the main policies or plans related to their sectors and climate change (Figure 31: Gender inclusion mainstreaming in sector plans and policies).

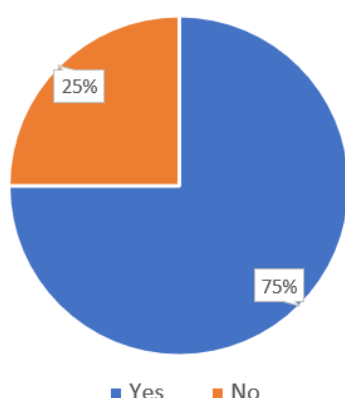


Figure 26: Existing institutional mechanisms for the involvement of multiple stakeholders

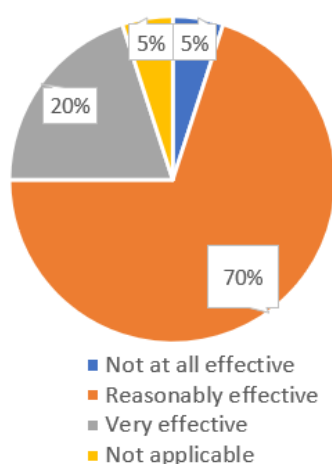


Figure 27: Overall effectiveness of sectoral departments in coordination with other stakeholders

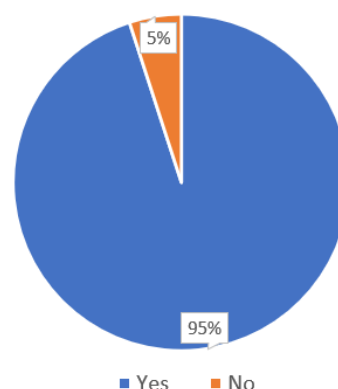


Figure 28: Staff competence in sectoral departments in coordination and partnering with other stakeholders

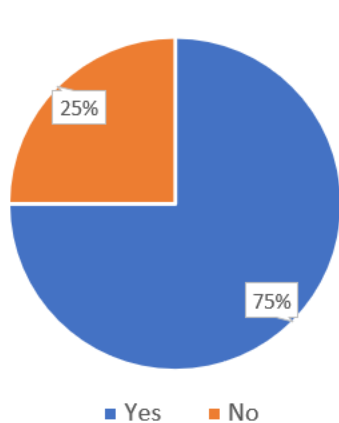


Figure 29: Social inclusion in the consultation process or activities

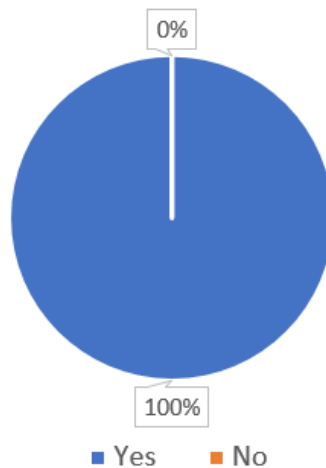


Figure 30: Female staff encouragement in the consultation or capacity development programs

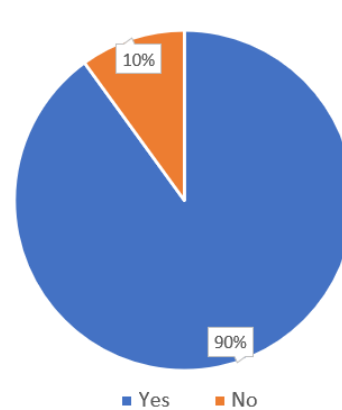


Figure 31: Gender inclusion mainstreaming in sector plans and policies

When it comes to monitoring and evaluation (M&E) capacity, a significant 70 percent of surveyed offices did not have an existing M&E system/mechanism in place for their sectors and climate change activities (Figure 32). Similarly, three-fourths of the offices lacked guidelines for M&E of climate change-related projects (Figure 33). While a majority of respondents (55 percent) reported that the M&E performance of their office on the relevant projects and activities is relatively effective (Figure 34), 80 percent of them indicated that M&E training was only sometimes provided for the relevant staff in their offices (Figure 35).

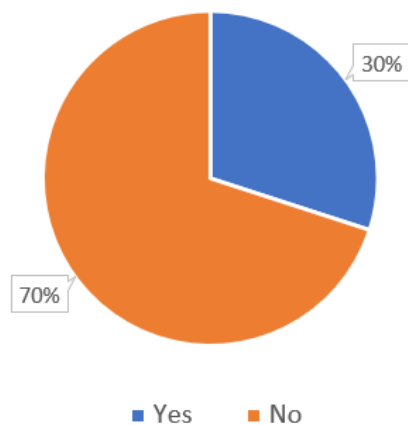


Figure 32: Existing M&E system/mechanism in place for climate change activities

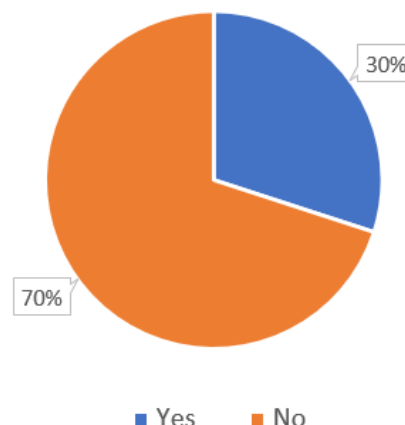


Figure 33: Guideline providing for M&E of climate change activities

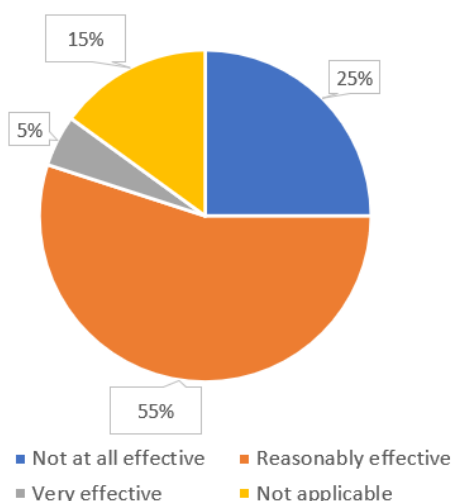


Figure 34: Overall effectiveness of sectoral offices on performing M&E

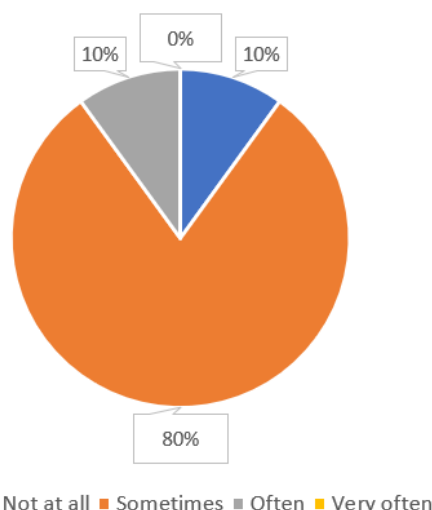


Figure 35: Training opportunity provisions on M&E

2.2.2.2 Sectoral Capacity Assessment

2.2.2.2.1 Agriculture and Forestry Sector

Department of Planning and Cooperation, Ministry of Agriculture and Forestry (MAF)

The Department of Planning and Cooperation (DPC), a key department under MAF, is responsible for developing agriculture and forestry-related policies and plans. With a total of 92 staff members, including 42 females, DPC comprises five divisions and one center. It is reported that three staff members are responsible for climate change-related work within the Planning Division, focusing on coordination and planning for relevant projects. The Department's key roles in climate change-related work include monitoring and reporting on project implementation progress under MAF. Additionally, the Department prepares a summary report on loss and damage in the agriculture sector from disaster events and acts as a focal point for coordinating with other departments in line ministries.

Regarding projects, there are no climate change-related projects currently being implemented under the Department. However, DPC staff have participated in relevant projects implemented by other technical departments through training events, workshops, and seminars. DPC also represents MAF as a focal point for coordinating with other departments in different ministries for climate change projects. The key gaps in implementing climate change-related work include the lack of clear plans developed under the Ministry. There is also an insufficiency of specialized staff for climate change planning, particularly within the DPC. Staff have indicated a need for tools and equipment for monitoring climate change-related work. Furthermore, training for relevant staff on climate change adaptation, including project management, is deemed crucial for effective implementation.

When it comes to data management, a database and platform (website) for the agriculture sector have been established. However, there is no information on climate change on the website. One of the key challenges raised by DPC staff regarding database management is the lack of competent staff. Most staff only have a background in general management and administration, with insufficient knowledge and expertise on climate change as well as information or database management.

The Sector Working Group for Agriculture and Rural Development (SWGARD) has been established and is chaired by the MAF, with DPC appointed as a member of the working group. However, DPC has not been designated as a member of the working groups for climate change. A challenge in coordination is the staff turnover and position changes within the department, leading to a lack of continuity in coordination, including capacity development. In some cases, it requires the re-appointment of new coordination members.

Regarding gender equality, staff interviewed report that although gender equality has been enhanced through projects and capacity development activities, there is still inequality in gender roles within this sector. Since the agriculture and forestry sector is generally related to fieldwork such as field surveys in remote and rural areas, most of these tasks are still dominated by male staff within the ministry, as reported by DPC staff.

Department of Agriculture, MAF

Within the MAF, the Department of Agriculture (DOA) plays a crucial role in macro-managing agriculture-related tasks, including developing and implementing relevant projects and activities. The DOA consists of 7 divisions and two centers, namely 1) Administration Division; 2) Standard and Certification Division; 3) Planning and Cooperation Division; 4) Agriculture Investment Division; 5) Regulation and Input Registration Division; 6) Plant Quarantine Division; 7) Crop Processing Management; 8) Plant Protection Center; and 9) Clean Agriculture Standard Center. It has a total of 113 staff members, 52 of whom are female.

Four staff members have been appointed for climate change-related work and activities, with main responsibilities for monitoring and warning disasters, as well as managing relevant projects on climate change in the Department. They are also involved in data collection and reporting on disasters, including loss and damage from floods, droughts, and crop disease. Staff reports that the Department has a primary role in climate change and disaster risk reduction, monitoring disasters that occur each year, as well as working on preparedness for disasters in the agriculture sector, including staff training for disaster responses.

Notably, although the DOA is directly involved in adaptation work, there are currently no climate change-related projects being implemented in the Department. There used to be a project on grasshopper control, but it has ended. Currently, most of the Department's involvement in climate change is through workshop and activity participation conducted by other departments, such as consultation workshops or training events. It is informed that there is no clear plan for a climate change response plan, as climate change is still a new concept for staff, particularly at the policy-making level. Many staff members lack advanced knowledge on climate change as well as a better understanding of climate change impacts and adaptation measures.

In terms of database management, a website has been developed for the Department, administered by the Ministry. However, there is currently no relevant information on climate change available. The challenge in developing the database on climate change is the lack of support from both internal and external entities, as most projects focus on agriculture rather than climate change information management.

The DOA emphasizes the urgent need for modern tools and equipment for monitoring and warning of disasters to provide timely alerts to farmers in case of emergency events. Additionally, building staff capacity through relevant training activities on climate change adaptation is crucial for enhancing effective project implementation on climate change. Furthermore, an insurance mechanism should be developed for the agriculture sector to ensure reparation costs for farmers after disaster events.

The DOA is a member of the Sector Working Group for Agriculture and Rural Development (SWGARD) and also sits as a member of the National Disaster Management Committee. However, the DOA has not been involved as a member of the climate change-related working group. Staff turnover is considered a key challenge for coordination within the Sector Working Group. Moreover, low understanding and awareness of the relevant staff on climate change consequences also remains a key gap for effective coordination, as raised by DOA staff.

Regarding gender, it is observed that the ratio of female staff is still lower than male staff in most divisions within the DOF, posing a significant gap in gender equality. However, significant progress has been made in the past year regarding gender equality, as most female staff have been promoted to participate in projects and capacity development activities within the department.

Department of Livestock and Fisheries, MAF

The Department of Livestock and Fisheries (DLF) oversees the macro-management and development of livestock and fisheries-related tasks, including policy, strategy, regulation development, and project implementation. DLF comprises 6 divisions and 4 centers, including 1) Administration and Planning Division; 2) Standards and

Sanitation Division; 3) Livestock Division; 4) Veterinary Division; 5) Fisheries Division; 6) Animal-Aquatic Product Management Division; 7) Animal Disease Research Center; 8) Veterinary Medicine Production Center; 9) Animal Feed Research Center; 10) Fisheries Development Center. Of the total 123 staff members, 51 are female.

Staff interviewed reports that there is no staff responsible for climate change-specific activities within the department. Additionally, the DLF does not have direct roles in climate change. However, the Department has only been involved in projects through activities implemented by other departments within MAF and other ministries, including training delivery.

One project has been implemented in the DLF with the World Wild Fund (WWF-Laos), entitled 'Enhancing Management of Aquatic Resources through Co-management, Conservation, and Promotion of Climate-resilient Livelihoods' Project, covering three provinces of Savannakhet, Champasak, and Saravan. Key activities focused on enhancing ecosystem-based adaptation to climate change, improvement of livelihoods, and registering fish conservation zones in the project areas, as reported by DLF staff. However, budget delivery for some projects at the local level is delayed due to the review and approval processes.

The Department has developed a specific website for updating work under the DOF. Nevertheless, there is no data on climate change adaptation available. The lack of staff specializing in climate change and information management is a key challenge in developing and managing a climate change-related database. Furthermore, developing the climate change database is not yet the priority work of the Department. Aside from providing training for the staff, developing guidelines and manuals on climate change mainstreaming into the agriculture sector is needed.

Like other departments, DLF is appointed as a member of the Sector Working Group for Agriculture and Rural Development (SWGARD). However, there is no coordination mechanism related to climate change set up within the MAF. In the past, DLF has never been a member of the climate change sector working group or technical working groups under the project. With regard to gender roles, it is highlighted that there is a limitation in inviting female staff to relevant meetings. Staff turnover is also a gap in enhancing gender equality for climate change work. In particular, the number of female staff in DLF is lower than male staff, resulting in female staff receiving fewer opportunities to participate in relevant activities and events compared to male staff.

Department of Forestry, MAF

The Department of Forestry (DOF) is a key department within MAF, responsible for law, regulation, policy, and plan development related to the forestry sector, as well as project and program execution. DOF is organized into 9 divisions, one center, and one division-equivalent office, including 1) Planning and Cooperation Division; 2) Administration Division; 3) Protected Forest Management Division; 4) Conserved Forest Management Division; 5) Produced Forest Management Division; 6) Wildlife Management Division; 7) Forest Business and Non-timber Product Management Division; 8) Forest Village Management Division 9) Reduced Emissions from Deforestation and Degradation (REDD); 10) Forest Inspection and Planning Office; and 11) Forestry Training Center. The department has a total of 120 staff members, including 40 females.

It is reported that there are 6 officials appointed for climate change-related work and projects. Most projects and activities have been involved in mitigation rather than adaptation. However, most staff are responsible for coordinating and administrating the projects. The roles of the Department focus on forest conservation and management, carbon credit, and REDD+ with support from different donors and partners, both internal and external. No adaptation-related projects have been implemented in the Department.

A challenge for the effective information management and development is the deficiency of staff for information management. Many staff members lack in-depth expertise on climate change. Additionally, there is a lack of climate change information collected, and insufficient funding support is also a challenge. To enhance effective work related to climate change, staff indicate that building the capacity of the staff to be competent for climate change should be the priority work for the Department in the long term. Ensuring sufficient funds for climate change implementation is important, as well as providing sufficient tools and equipment for climate change work.

Apart from the Sector Working Group for Agriculture and Rural Development (SWGARD), MAF also established a Sector Working Group for Forestry (SWGf) as a technical and coordination mechanism working specifically for the forestry sector. DOF is a key member of this working group, along with other members from different ministries such as MONRE and MEM. Staff turnover is a key gap for effective coordination within MAF and with other departments of line ministries. The low number of female staff remains a gap in gender equality promotion in the department.

Department of Irrigation, MAF

The Department of Irrigation (DOI), under the MAF, plays a main role in the macro-management and development of irrigation infrastructure, encompassing design, development, repair, and maintenance. The DOI consists of five primary divisions and two centers, including 1) Administration, 2) Planning and Cooperation; 3) Irrigation and Drainage Development; 4) Irrigation Technology Management; 5) Irrigation Management and Usage; 6) Irrigation Survey-Design Center; and 7) the Lao-Korea Irrigation Development Cooperation Center. In total, the department has 106 staff members, with 25 being female. Notably, the department has established a unit in charge of climate resilience development and DRM, especially focused on flood and drought prevention-related work. However, DOI staff raised an issue regarding the overlap of mandates, particularly those related to groundwater management.

The Department of Irrigation (DOI) is currently spearheading a number of significant projects, including the "Flood and Drought Risk Management and Mitigation" project, supported by the Asian Development Bank (ADB). This initiative aims to enhance Lao PDR's capacity to manage data, information, and knowledge related to floods and droughts, and to upgrade or develop water management infrastructure for disaster management and climate change adaptation.

Additionally, the department has recently executed an Integrated Water Resource Management (IWRM) project funded by the ADB, which involves the development of IWRM guidelines for the irrigation sector. Furthermore, with support from the Government of Korea, a dedicated division named the "Lao-Korea Irrigation Development Cooperation Centre" has been established, along with the creation of a water and soil research laboratory. At the sub-national level, the department has been engaged in several projects, including the Integrated Irrigation Agriculture and Rural Development Project in Savannakhet Province, the Irrigation Development Project in Champasak Province, and Water Reservoir and Irrigation Development in other provinces.

Despite the development and construction of numerous irrigation projects across the country, many existing irrigation systems lack resilience to climate change and disasters. Consequently, the government reportedly allocates more funds annually to the recovery and repair of agriculture-related infrastructure, such as water gates, pumps, and buffer zones, than to other areas within the agriculture sector. Some aging irrigation components, like water gates and pumps, require replacement or repair to bolster their resilience to flooding. Addressing the capacity needs, the DOI emphasizes the critical and urgent necessity of enhancing the relevant staff's capacity, especially through training on monitoring tool utilization, ensuring adequate tools and equipment for monitoring work for the irrigation schemes at all levels, and securing a sufficient budget for implementing work under the department.

The Department of Irrigation (DOI) is encountering significant budget constraints, posing challenges for the enhancement and upkeep of irrigation systems. The reliance on project support for funding is substantial, as government funding is inadequate, a situation aggravated by reduced budget allocations due to the impact of the Covid-19 pandemic. The department is also grappling with staffing issues, as there has been a decrease in the number of experienced personnel proficient in utilizing tools such as GIS and modeling. Additionally, there is a general lack of capacity at all levels to effectively manage and oversee irrigation systems, including their improvement, repair, and maintenance, especially for components such as water gates and pumps when they are damaged.

Regarding data management, the department currently lacks a comprehensive information management system and database, primarily due to insufficient funding. The available information on irrigation is fragmented, with

inaccuracies in data from various regions, particularly remote areas. Staff members have highlighted a previous attempt to develop a database through the MRC project in 2015, but progress has been limited since the conclusion of the project due to the absence of further data collection or updating support. The substantial funding required for the collection and surveying of irrigation data across the country remains a significant obstacle for developing a database system within the irrigation sector.

Furthermore, there is no coordination mechanism developed for this sector, although a director general level official of DOI has been assigned as a member of the National Disaster Management Committee (NDMC). Staff turnover is noted to cause challenges in effective coordination between DOI and other sectors and departments. In some cases, staff appointed for a particular project may be reassigned to other divisions or promoted to higher positions, which can disrupt project involvement and effectiveness.

National Agriculture and Forestry Research Institute, MAF

The National Agriculture and Forestry Research Institute (NAFRI), a crucial office under the MAF, plays a main role in the macro-study and research on the agriculture and forestry sector. NAFRI consists of 1 division and 13 centers, including 1) Planning and Administration Department; 2) Rural Economy and Agriculture Research Center for Climate Change Adaptation; 3) Rice and Economic Plant Research Center; 4) Vegetable and fruit tree research center; 5) Livestock Research Center; 6) Fisheries Research Center; 7) Forestry Research Center; 8) Agriculture and Forestry Information Center; 9) Lao-Chinese Cooperation Research Center for Lao Rubber and Mayo Farm; 10) Lao-China Good Plant Seed Center; 11) Agricultural Research Center (Luangnamtha); 12) Highland Agricultural Research Center (Luang Prabang); 13) Thasano Agricultural Research Center (Savannakhet); and 14) Southern Agricultural Research Center (Champasak). In total, NAFRI has 274 staff members, with 30 being female.

NAFRI staff reveals that NAFRI has established a Center responsible for climate change, called 'Rural Economic and Agriculture Research Center for Climate Change Adaptation'. This center has three staff members with key roles in conducting research and analysis, developing modeling and training tools and manuals. NAFRI's work focuses on research on climate-resilient and adaptive crop seed and varieties, developing guidelines and toolkits on Climate Smart Agriculture (CSA), as well as piloting projects and experimenting initiatives with farmers in different areas.

NAFRI is jointly implementing a project called 'Strengthening Agro-climatic Monitoring and Information Systems (SAMIS)' with the Department of Meteorology and Hydrology, MONRE, with support from the Food and Agriculture Organization (FAO). Additionally, NAFRI was involved in implementing two climate initiatives – one with the World Food Programme (WFP) focusing on providing guidance on agrometeorology, which this project has recently ended, and the other with Care International Organization on developing a Crop Calendar through the Northern Uplands – Promoting Climate Resilience in Districts of Phongsaly Province.

NAFRI staff highlights gaps and challenges in effectively implementing climate change projects, such as the lack of staff with experience, expertise, and better understanding of climate change. They also mention limited staff for developing training tools, guidelines, and manuals, aging and insufficient research tools, inadequately trained trainers, and language barriers, particularly in English, impacting project implementation.

The staff of NAFRI notably emphasizes the importance of building staff knowledge and understanding of climate change adaptation, including research and studying adaptation measures for Lao PDR, as a key factor for effectively implementing climate change work. They also stress the need for the development of a coordination mechanism for climate-related projects to ensure regular exchange of updates on project implementation progress and to seek synergies among climate change projects. Additionally, ensuring a sufficient budget is reported as a critical factor in the effective implementation of projects and activities, especially research work on climate resilience. Furthermore, external experts or specialists, such as climate change researchers, are also needed for NAFRI, in addition to permanent staff.

NAFRI reports that a climate-related database or portal for the agriculture sector, called 'Lao Climate Services for Agriculture (LaCSA)', has recently been set up for sharing climate and agriculture information. This system is

funded by the Global Environment Facility (GEF) and supported by FAO under the SAMIS project, with the aim to use the system for disaster alerts of floods and droughts for farmers. The LaCSA website is managed by MONRE in collaboration with MAF which is available at <https://www.lacsa.net/mapView.do>. However, ensuring the sustainability of the management and maintenance of the system as well as issues of staff turnover and lack of technical staff to manage the developed database is also a concern, added NAFRI staff.

In the past, NAFRI has also developed a database on agrometeorology, soil, animal and crop diseases, floods, and droughts for the agriculture sector. Like other departments under the MAF, lack of specialized staff and funding support are reported as key challenges for developing and managing databases related to climate change.

Apart from SWGARD, NAFRI has also set up a center titled 'Rural Economy and Agriculture Research Center for Climate Change Adaptation' to work and coordinate with other divisions and departments within MAF on matters related to rural development and climate change adaptation, especially research and study for agriculture, forestry, and rural development. Staff also cites that one of the key challenges for effective coordination is the low level of understanding and capability of the staff within the respective divisions, which has caused ineffective coordination and cooperation with other sectors and organizations, including the ineffectiveness and delay in activity implementation of projects. Therefore, specialized staff on climate change research is also required for NAFRI.

Regarding the gender gap, it is informed that, like other departments within MAF, the ratio of female staff is still lower than male. Moreover, most policy-making positions are dominated by male staff, and the number of female staff or researchers within NAFRI is also low. These are still key gaps that need to be addressed within the sector.

2.2.2.2.2 Urban Development Sector

Department of Housing and Urban Planning, MPWT

The Department of Housing and Urban Planning (DHUP), under the MPWT, is responsible for developing laws, regulations, strategies, and policies related to the urban development sector. The department has a total of 41 staff members, with 9 being female, and is organized into six divisions: 1) Administration; 2) Inspection; 3) Urban Development; 4) Housing; 5) Building Control; and 6) Town Planning.

The Urban Development and Town Planning divisions are most directly involved in climate change. Approximately 70% of the staff have expertise and experience in urban planning, having graduated from related fields such as engineering, architecture, urban development, and environmental studies. There are 4 staff responsible for work related to climate change, including project implementation with main roles in developing and improving regulations, designing tools, manuals, and guidelines on resilient housing and urban planning, and establishing databases and collecting data.

DHUP is involved in several projects supported by various development partners. For instance, the department is implementing a project to apply the City Resilience Index (CRI) to measure the resilience performance of selected cities in Lao PDR. The Capacity Building Project on Development Planning focuses on urban water resource management (Poly-urban water) and employs polycentric approaches to water-sensitive urban development. However, DHUP notes that although several projects are being implemented under their purview, they have not been well integrated with other departments. This includes aspects of coordination and technical collaboration among relevant departments working on climate change.

When asked about needs in enhancing effective work implementation, staff notably emphasizes the importance of developing the capacity of relevant staff on climate change, improving data management and sharing systems, as well as accessing the system for DHUP to take into account. An official from DHUP notes that information system development is a priority highlighted in both the National Strategy on Housing and Urban Planning 2023 and the Vision of Public Works and Transport. Specifically, the strategy emphasizes the need for an urban wastewater drainage system database for major Lao cities, and the department is initiating the development of the database on cities/urban sector supported by KOICA. However, as this is being commenced, staff could not provide more details on this database.

When it comes to the challenges, staff cites the lack of funding allocated for this priority work as a major obstacle. Most government budgets are directed toward other areas, such as administration, urban planning development (Urban Master Plans), and urban waste and wastewater management, rather than information system management development. In the past, a project helped develop the urban drainage system database, but it only covered specific project sites and did not include all urban areas across the country. Moreover, since the project's completion, the system has not been further developed or updated. DHUP staff emphasize that developing the database system requires specific expertise, which the department currently lacks in terms of technical, financial, and human capacity. Nevertheless, the department has expressed interest in receiving support to develop this system in the future.

In terms of coordination, there is no established coordination mechanism under the department or the sector. Staff mentions that language capacity is a key challenge in coordination with different partners, as well as a barrier in the uptake of the relevant knowledge on climate change. Moreover, coordination with local government entities is also raised as another challenge. Regarding gender, it is reported that there is inequality in gender roles and work implementation within the department. Especially when it comes to capacity development, staff notes that female staff are likely to receive fewer opportunities in capacity development such as training activities due to maternity leave. In some cases, the leave may take up to 6 months long.

Department of Road, MPWT

The Department of Road (DOR) oversees the macro-management and development of road infrastructure-related tasks, including policy, strategy, and regulation development. There are 6 Divisions within DOR, including 1) Personnel and Administration; 2) Road Administration; 3) Project Monitoring; 4) Planning and Budgeting; 5) Technical and Environment; and 6) Inspection. The department has a total of 83 staff, with 21 being female. It is reported that there is no specific staff assigned for climate change work. However, there is one staff (Deputy Director General) who is in charge of disaster-related work, including providing directions within the department. Moreover, there are no specific roles on climate change. However, DOR has been more engaged in disaster risk management than climate change, especially when it comes to floods and landslides that directly impact the road sector.

Regarding projects, DOR is currently implementing one project with the World Bank since 2018, called 'Lao Road Sector Project 2 (LRSP 2)'. This project aims to strengthen maintenance systems to improve reliable road connectivity in Lao PDR and to provide immediate and effective response in case of an emergency event, including activities on developing climate-resilient road maintenance plans. Staff of DOR highlights that a low level of understanding and expertise on climate change, as well as language barriers, are considered key challenges in effectively implementing the relevant projects. Other challenges include a lack of coordination among sectors, proper tools, and sufficient budget to ensure the continuation of project implementation. Thus, these gaps and challenges need to be addressed for DOR in the long run.

The department has not established its own database at the moment. It only provides data required by the Ministry through the data entry program called 'PROMMS', which is developed by JICA. This software tool is used for collecting road status data across the country, including determining maintenance needs and costs for road repairs caused by floods and landslides. However, the lack of specialized staff in database management, sufficient budget, tools, and equipment is mentioned as key challenges for system development and management for DOR. Like other departments, developing the capacity of the staff is an urgent need in the long run, as well as improving the data management system and ensuring sufficient financial capacity in the project and activity implementation are key factors ensuring effective implementation.

There is no coordination mechanism set up for this sector with regard to climate change. However, the department has become a member of the National Disaster Management Committee (NDMC), with the Deputy Director General appointed to represent DOR for this committee. Like DHUP, language capacity is still a challenge for effective coordination with different stakeholders, especially the development partners. When it comes to gender issues, staff mentions that capacity enhancement on gender equality and climate change has

not yet commenced under the department or through the projects. This should be addressed and enhanced in the future.

Public Works and Transport Institute, MPWT

The Public Works and Transport Institute (PWTI) is a key office responsible for research and studies on public works and transport-related work. It has 6 divisions, including 1) Administration; 2) Planning and Cooperation; 3) Housing and Urban Development Research; 4) Civil Aviation Study Center; 5) Architecture and Engineering Secretariat; and 6) Road and Transport Research Center. There are 55 officials in PWTI, with 22 being female. Three staff members are involved in climate change-related work at PWTI with general roles of providing policy guidance, research, and study on public works and transport, as well as implementing climate resilience projects under the PWTI. Particularly for climate change, PWTI has main roles in research and study on climate change and the environment for the public works and transport sector. This includes developing the capacity of relevant staff in disaster risk prevention and providing information/data on climate change and disaster management for public work and transport research.

It is reported that PWTI is currently implementing several climate resilience projects supported by various development partners, including the project with UNEP called 'Build Resilience of Urban Populations with Ecosystem-based Solutions in Lao PDR (Urban EbA)'. This five-year project has been implemented since 2021 and is funded by GCF with the aim to apply ecosystem-based adaptation in urban areas by testing an alternative approach to flood control in five cities of Lao PDR, moving away from a traditional focus on grey infrastructure, such as dams and concrete drainage systems. Other projects include the initiative of designing and piloting permeable pavement in Lao cities and the project on River Embankment Management in Bolikhamxay and Luang Prabang Provinces, which focuses on strengthening disaster risk management.

In terms of challenges, the staff notes that the lack of specialized staff on climate change is one of the main obstacles. Most of the staff have backgrounds in engineering, road, and transport, but not in climate change, especially climate resilience. Additionally, the limitation of financial capacity and data sharing among sectors and government entities remains a barrier for effective project implementation. Although there is data available in different departments, they are fragmented and not shared with one another, including project progress, updates, and lessons learned from previous projects.

Regarding data management, there is currently no official database management system or platform developed for PWTI. PWTI is currently receiving support from KOICA in developing a website for public works and transport, but this is still in the initiative phase. The lack of technical staff on database development and management remains a key challenge. Financial capacity is also an issue for developing the database, including the lack of capacity in providing adequate tools and equipment needed for both data development and management, especially concerning the sustainability of the system maintenance once it's developed. Capacity development of the relevant staff on climate change adaptation, such as training provisions, as well as developing a database system and improving a data sharing platform, is required for PWTI to ensure effective work operation. Moreover, improving coordination among sectors, government entities, and development partners involved in climate change initiatives is crucial for the effective implementation of climate change activities.

Concerning coordination mechanisms, PWTI has not engaged in climate change coordination mechanisms such as a technical working group. PWTI only engages as a member of the relevant project steering committees (PSC). Regarding coordination capacity, the lack of a better understanding of the staff on climate change and language proficiency is reported as key challenges for coordination matters in PWTI. Moreover, the relevant project implementation on climate change is not fully engaged by PWTI in terms of ownership, and the lack of continuation, such as capacity building activities, is also raised as challenges. As for gender issues, the staff highlights that the number of female staff working in this sector remains low in comparison to male staff. This can consequently be a barrier to enhancing the capacity of female staff and engaging in the relevant projects and activities, particularly the climate change-related activities. Moreover, it is reported that the responsibility of female staff is still focused on specific work areas such as administration and finance, which are not extensively involved in technical matters.

2.2.2.2.3 Water Resources Sector

Department of Water Research, MONRE

The Department of Water Resources (DWR), a crucial department under MONRE, is responsible for implementing water-related projects and programs. With a total of 35 staff members, including 11 females, the department comprises five divisions: 1) Policy Division; 2) Water Utilization Division; 3) River Basin Planning and Development Division; 4) Ground Water Management Division; and 5) Water Resources Assessment Division. DWR's mandate encompasses the development and management of water resources such as surface water, wetlands, reservoirs, groundwater, water supply storage, and water zoning. Additionally, the department conducts research, proposes the establishment of reservoir coordination committees, and creates and updates agreements, guidelines, and technical tools for water resource development and management. However, it is reported that there are no specific staff assigned for climate change work under DWR. The Director General has a direct role in providing directions and guidance in this area.

In regards to projects, DWR has primarily focused on Integrated Water Resources Management (IWRM). Two IWRM projects are currently being implemented: the UNDP's Integrated Water Resource Management and Ecosystem-based Adaptation (EbA) project, funded by GEF, which aims to promote integrated management of wetland sites in the Mekong River Basin to increase climate resilience in vulnerable communities in Savannakhet and Luang Prabang Provinces; and the Enhancing Integrated Water Management and Climate Resilience in Vulnerable Urban Areas of the Mekong River Basin project, implemented in collaboration with the UNDP and supported by the Korean Government (ROK project). Both projects emphasize capacity development and include activities geared towards community engagement, awareness-raising about climate change adaptation, and knowledge-sharing within and beyond Lao PDR.

Furthermore, with regard to water resources, the DWR is implementing the Integrated Water Resources Management in Nam Po Watershed project in Vangvieng District, Vientiane Province, which is in its third phase, set to continue until 2024. Additionally, there are other projects supported by the Food and Agriculture Organization (FAO) and the Australian Government on water resources management, which are in their initial phases.

As for gaps and challenges, DWR staff raise concerns that the water sector in general still lacks national experts on the water sector and climate change. Most studies and research on climate change related to the water sector are still reliant on international specialists. Moreover, DWR continues to face financial constraints in the relevant activity implementation, including capacity development. Finance remains a significant gap in enhancing the skills of staff responsible for water-related work. Most financial support for capacity development comes from projects, which are limited to the project's duration. However, interviews reveal that the department has received various water resource- and climate change-related topics from multiple projects. Staff also notes that the low capacity of DWR staff adds to other challenges in effective project implementation.

Staff members have indicated a significant need for financial resources, particularly for funding wetland assessments across the country, which is considered a priority for this sector. Additionally, raising awareness about water resource management is crucial, and one way to address this is by developing an integrated water resources management curriculum for both secondary and primary school levels. In terms of coordination, there are instances where the coordinators appointed are not well-suited for certain projects. This issue is linked to the low capacity of staff within the Department of Water Resources (DWR). Furthermore, the introduction of additional criteria by donors and development partners has also posed challenges to effective coordination.

In terms of data management, DWR is currently establishing a water resources database system for Lao PDR, known as LaoWIS (Lao Water Information System). Commenced since 2019, LaoWIS is the first water information system in Lao PDR, providing public information and data related to water and aquatic environments. The system includes atlas mapping for the country's 62 basins, a metadata catalogue, monitoring stations, data results, and infrastructure information related to water resources, such as a list of dams and pumps for irrigation. Moreover, the ROK project has extended further support for the development of LaoWIS, focusing on

improvements to the web portal's front and back end, as well as the web server (previously Joomla). This project also assesses gaps and capacity in managing the system and explores the possibility of linking LaoWIS with the Department of Social Welfare's LaoDI system.

The DWR staff reports that there is a significant gap in information and data collection from various sectors involved in water management. Water is a broad sector that encompasses numerous relevant fields, including agriculture, energy, public works, and health. Consequently, data related to water is fragmented among these sectors. Some data or information is readily available for sharing and access, while other data is out of update or unavailable, requires payment for access, or lacks cooperation from projects in sharing relevant information. The DWR staff cites an example that the development of a web portal may not be a challenging task in itself, but collecting information from relevant sectors is more difficult in associated with lack of financial capacity, particularly when it comes to historical hydrological data spanning 20-30 years. Specific information is often held by related sectors, further complicating the process.

To address these issues, DWR staff strongly recommend intensive on-the-job training at all levels, covering various areas such as GIS, Remote Sensing, Water Quality Data Collection, Data Entry, Filing, Analysis, System Management, and Water Quality Collection Tool Use and Maintenance. They also report that inadequate budgeting is a key problem, impacting system maintenance once a project ends, as well as the purchase of water quality data collection tools and information management systems like GPS, water quality monitors, servers, and computers. Lastly, technology and internet connectivity also pose challenges in updating real-time hydrological data, especially in areas where internet access is unavailable or unstable.

In terms of gender participation, DWR actively supports and encourages female staff involvement in the relevant activities including capacity development. Although gender equality has been focused and enhanced in past years, in practice the climate vulnerable and ethnicity groups are not well addressed through the project activities. For example, lack of specific translators for some ethnic groups for projects.

Department of Meteorology and Hydrology, MONRE

The Department of Meteorology and Hydrology (DMH) plays a key role in developing, managing, and maintaining forecasting stations and data management related to meteorology, hydrology, agricultural meteorology, aviation, and earthquake meteorology. It also serves as an early warning center in accordance with global meteorological standards. The DMH consists of six divisions: 1) General Affairs; 2) Weather Forecast; 3) Hydrology; 4) Weather Station and Earthquake; 5) Climate and Agriculture Meteorology; and 6) Aviation Meteorology. The Weather Forecast, and Climate and Agriculture Meteorology Division are key offices responsible for tasks related to climate change, such as weather forecast station management, and climate database and information management. The DMH currently has a staff of 56, including 27 women.

The DMH official has reported that they are overseeing the implementation of several projects, among which "Strengthening Agro-climatic Monitoring and Information Systems (SAMIS) to Improve Adaptation to Climate Change and Food Security in Lao PDR" is particularly significant. Launched in 2017, this project is carried out by the DMH with support from the FAO. SAMIS is designed to advance the monitoring and observation capabilities, data analysis, storage, and the creation of enhanced informational products to support well-informed decision-making in agriculture. Currently, the project is gearing up for its second phase, which will include additional hydrological components. SAMIS places a strong emphasis on building capacity and fortifying essential areas such as agro-climatic monitoring, analytical processes, communication, and the effective use of data for decision-making related to agriculture and food security. Furthermore, the project intends to boost both institutional and technical capacities for the observation and analysis of agricultural production systems. It also aims to develop a Land Resources Information Management System and establish agro-ecological zoning.

Additionally, the department has been implementing the Climate Risk and Early Warning Systems project (CREWS) since 2021. This regional project aims to reduce the impacts of disasters by promoting the use of early warning and risk information. CREWS seeks to strengthen national capacity in providing hydromet, early warning, and response services, ensuring that vulnerable populations in Lao PDR receive effective risk-informed early

warning services. In terms of capacity development, the project has aided the DMH in enhancing their skills and improving the quality of hydromet forecasts, as well as developing early warning systems and flood forecasting models.

The DMH has made considerable investments in the operation, maintenance, and expansion of hydrometeorological and earthquake monitoring networks. These networks are crucial for collecting data necessary for weather, flood, and drought forecasting, multi-hazard early warnings, and earthquake monitoring. The data and information managed by the department play a vital role in multi-hazard risk assessment, integrated water resources modeling, and river basin management. Recent advancements include the creation of the National Early Warning Centre and the Earthquake Monitoring Centre, which offer nationwide weather forecasting, early warnings, and earthquake monitoring services. Furthermore, the DMH has formulated a National Strategy for Early Warning and established Standard Operating Procedures for Flood Early Warning.

Many meteorology and hydrology projects encounter difficulties in securing appropriate locations for establishing weather stations, as private land is often inaccessible and suitable public land may not be available. Another significant challenge is the limited human and financial resources, leading to a shortage of personnel to manage, enhance, or maintain the stations after their installation. Moreover, inadequate financial support from the government hampers the maintenance and operation of these stations, sometimes necessitating funding from external project support.

Ensuring the long-term sustainability of projects, such as maintaining the equipment and tools at weather stations—including internet connections and monitoring devices—is also problematic. While these tools are well-managed, inspected, and cared for during the lifespan of a project, financial backing often diminishes post-project, potentially leading to sporadic weather data collection or a complete cessation of activities due to funding shortages. Furthermore, there is a pronounced lack of skilled personnel, especially technical experts proficient in modeling, remote sensing, and radar technology, which impedes the progress of projects. The department has experienced the departure of some highly trained staff members, and with a generally low staffing level, the remaining employees often find it challenging to juggle multiple tasks or take on new responsibilities.

To enhance the effective implementation of projects, the DMH requires the development of staff capacity in various domains related to climate resilience, meteorology, and hydrology. This includes training in the use of tools for data collection and managing the DMH's database system, which is integral to weather data collection and local-level management. Moreover, the department has proposed the enhancement of research and studies, including the development of climate modeling tailored to the country's geographical conditions, alongside knowledge sharing with the international community and other countries. In addition, there is a critical need for increased information exchange with related sectors.

In the realm of data management, the DMH has established a website (www.dmh.la) to disseminate daily and weekly weather forecasts and to provide general information about the department, including its institutional structure and various divisions. However, there is a deficiency in the system regarding the provision of long-term data, such as historical records of temperature, humidity, and water levels spanning the last 10 to 30 years. Currently, this information is only accessible in Excel files and is not available for free; it must be purchased. The DMH staff has observed that meteorological and hydrological data in Lao PDR is highly fragmented, even within the department itself. Different projects, funded by countries such as China, South Korea, and Japan, have their separate databases or data management systems which are not integrated.

Data collection at the local level presents numerous challenges, primarily due to the lack of staff available to man weather stations and inadequate funding to cover travel expenses for data gathering. In some districts, there is no budget designated for data collection activities. The task of acquiring data during the rainy season is further complicated, as real-time weather data, which are critical for precise forecasting, is sometimes required more frequently, such as hourly or every three hours. Internet connectivity issues compound the difficulty, with certain regions lacking stable connections that are essential for updating weather forecasts, especially during storm

seasons when frequent updates are crucial. Typically, data updates are relayed via messages and phone calls, which underlines the pressing need for more funding support.

Coordination challenges primarily exist at the local level rather than the sectoral level. The sheer number of weather stations across the country makes data collection for weather forecasts particularly challenging in certain cities or districts. Gathering all the required data demands substantial financial and human resources, which may be inadequate or lacking in some provinces or districts. Additionally, there is a notable gap in promoting gender equality, as insufficient efforts have been made to disseminate relevant information to women at the local level. For instance, in some projects, like the FAO's collaboration with the DMH in Luangnamtha Province, women are not actively involved in community outreach activities, highlighting an area for improvement in engaging women in such initiatives.

Department of Waterway, MPWT

Within the MPWT, the Department of Waterway (DOW) oversees macro-management and development of water transport-related tasks, including policy, strategy, and regulation development. The DOW also manages waterway vehicle registration, safety systems, and standards nationwide, along with water-related infrastructure and water-related mining, such as sand mining along major rivers. The department comprises five divisions: 1) Administration and Personnel; 2) Inspection; 3) Water Technical; 4) Water Impact Management; and 5) Water Transport. Of the total 34 staff members, 10 are female. It is reported that there is no particular staff mandated for climate change related projects and work.

The DOW is currently involved in various projects, one of which is the "Lao PDR Southeast Asia Disaster Risk Management" project. This five-year initiative, funded and supported by the World Bank, aims to mitigate the impact of flooding in the cities of Oudomxay, Luang Prabang, and Bolikhamxay. It also seeks to enhance the government's capacity to provide hydro-meteorological services and disaster response. The implementation of this project involves various government ministries, with DOW playing a pivotal role in the development of urban flood control, navigation, and riverbank protection measures.

While undertaking these projects, DOW staff has encountered several challenges, including time-consuming document approval processes that hinder project implementation and funding disbursement. Specifically, the process of requesting government funding for riverbank repairs is often protracted and delayed. Staff also reported that limited financial capacity for waterways poses challenges in developing and improving riverbanks in main rivers. While the waterway infrastructure has not been well-built and in some cases have not followed the approved standard. Moreover, limited English proficiency has been identified as a hurdle in executing projects under DOW. However, the effective implementation of relevant projects necessitates the development of staff capacity and adequate budget allocation for DOW.

In terms of data management, DOW currently lacks an official database system, and internal information management is disorganized. Officials have highlighted the absence of an online platform for sharing waterway information, such as a department website. Accessing information requires manual collection through meetings, interviews, and discussions. Inadequate funding, lack of government prioritization, and limited human and technical resources contribute to these deficiencies. Nevertheless, the official acknowledges the necessity of developing a comprehensive database system in the future.

Department of Energy Policy and Planning, MEM

Under the Ministry of Energy and Mines, the department responsible for water management is the Department of Energy Planning and Policy (DEPP). The department has over 30 staff in total across different divisions with 9 are females, and comprises five main divisions, including 1) General Affairs; 2) Information; 3) Transmission Line Planning; 4) Energy Policy; and 5) Water Management. Although the department's roles and mandates have mainly focused on water management. However, there are no direct mandates and staff responsible for the climate change specific activities.

DEPP has been actively engaged in various water management projects. Notably, one intriguing project focuses on water management for the Namngeum hydropower project, supported by KOICA and in collaboration with the Department of Meteorology and Hydrology and the Department of Water Resources. This project aims to manage water to prevent floods and droughts within the Namngeum river basin, with key activities including the monitoring of water levels in the Namngeum reservoir and capacity building for relevant staff in hydropower project water management. DEPP plays a pivotal role in providing required data on water levels in the Namngeum reservoir as part of this project. Another project related to water management is the AFD project, funded by the government of France, with the primary objective of developing relevant policy documents for boat transport management along the Mekong River. Additionally, the department has recently implemented a project with JICA, focusing on assessing the impacts of hydropower projects on the water sector and evaluating the carbon credit potential from these projects. However, further details on this project have not been provided by the staff.

DEPP staff have highlighted that the department continues to face constraints due to a lack of technical and financial capacity in implementing projects. They have noted that despite the department's role in water management within the energy sector, there is a deficiency in capacity for data management and collection. The data on water management and energy is fragmented across different departments and ministries, making the collection of data challenging. Additionally, the department has revealed that there is no official database or platform for water management in hydropower projects. Budget insufficiency further compounds the department's challenges. Given the broad coverage of the energy and water sectors at different levels, financial support is required for activities such as data collection, database development, and modeling of hydrology and water levels within relevant river basins and reservoirs. Although there have been several past supports from different projects, they have been insufficient and unsustainable.

Department of Environment, MONRE

The Department of Environment (DOE) is tasked with managing environmental projects and programs. With a total of 86 staff members, including 40 females, the department comprises six divisions: 1) Environmental Information Management, 2) Environmental Policy, 3) Environmental Promotion, 4) General Environment Management, 5) Mining Environment Management, and 6) Energy Environment Management. DOE's mandate encompasses the management of environmental matters in development projects, as well as the development and updating of policies, regulations, and decrees on environmental protection and pollution control of development projects, and the creation of agreements, guidelines, and technical tools for environmental matters such as environmental impact assessments (EIA) and more.

Notably, it has been reported that there is no specific staff member in charge of climate change within DOE. It is assumed that there are no climate change-related projects and activities under DOE, according to the staff report. The relevant work and activities related to climate change revolve around raising awareness on climate change mitigation (GHG emission reductions) through waste reduction and promoting a green and clean school environment. Thus, DOE staff have reported that there are no adaptation projects being implemented. In terms of challenges in project implementation, staff notes that the lack of capacity and insufficient experience of staff in environment and climate change is hindering effective project implementation. Additionally, the low number of staff in DOE is also a challenging issue, as some of them have permanently resigned from the department.

It has been indicated that a database sharing platform (website) has been developed in DOE; however, it is currently in the phase of improvement and updating. Lack of funding and support, as well as a shortage of technical staff, are reported as key challenges in maintaining and updating the system. Additionally, the interviewed staff mentioned that most staff in each division have set up their own 'Google Drive' for sharing information within their divisions, but this platform is not accessible by other parties or departments within MONRE, according to DOE staff.

Similar to the Department of Planning and Finance, DOE reports that the excessive internal processes for reviewing and approving documents are considered significant constraints for work implementation and coordination. This, at times, results in delays in project implementation. The limited experience of staff also

hinders the effective implementation of projects. It has been noted that the capacity of female staff in EPF is still lower than that of male staff. This is assumed to be due to a lack of opportunities for receiving training and capacity development, as well as a lack of confidence in presenting their views or expressing their opinions during workshops or meetings.

2.2.2.2.4 Other Key Sectors and Departments

Department of Climate Change, MONRE

The Department of Climate Change (DCC), under MONRE, is a relevant department responsible for managing climate change. DCC is mandated to coordinate the development and preparation of the National Climate Change Strategy (NCCS) and National Communications (NCs). Additionally, it plays a role in preparing mandatory climate change policy documents according to the United Nations Framework Convention on Climate Change (UNFCCC), which includes the preparation and submission of Nationally Determined Contributions (NDCs). The department consists of 33 staff members, with 12 being female, and is organized into four main divisions: 1) Information, 2) Adaptation, 3) Mitigation, and 4) Policy. Staff at the DCC display a deeper understanding of climate change than those in other departments, which can be attributed to numerous capacity-building activities provided by various projects in the past. It is reported that there are 12 staff responsible for the climate change adaptation related projects and activities under DCC which mainly fall in the Adaptation Division and Information Division.

At present, several climate change adaptation projects and programs are being implemented in DCC, including the GCF-funded "Building Resilience of Urban Populations with Ecosystem-based Solutions in Lao PDR." This five-year project (2021-2025) is implemented in collaboration with UNEP in the cities of Vientiane, Kaysone Phomvihane, Paksan, and Pakse. Another adaptation-focused project is the "Building Climate Resilience of Urban Systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region," which is funded by GEF and partnered with UNEP in Xay District and Phongsaly District, located in Oudomxay and Phongsaly Provinces, respectively. Notably, both projects emphasize capacity development, particularly enhancing the abilities of project communities and authorities to plan and implement EbA interventions.

Additionally, DCC is developing the National Adaptation Plan (NAP) through the "Building the Capacity of the Lao PDR Government to Advance the National Adaptation Planning Project," funded by GEF. This project is crucial for Lao PDR, as the government intends to establish its first long-term national adaptation plan. Complementary projects supporting the NAP development process are being implemented by UN-Habitat and GGGI, with funding from GCF, which are in initial implementation phase. Moreover, other activities are being conducted with development partners to support and enhance the government's climate change-related policies and strategies, such as developing and implementing the NDC Implementation Strategy Plan, supported by ADB and GGGI, and the National Long-term Low Emissions Strategy, backed by the World Bank. Moreover, DCC is also implementing climate change adaptation mainstreaming project at the local level with the UNCDF called 'Local Climate Adaptive Living Facility (LOCAL)' project, which is in initial phase of implementation as well. In terms of challenges, overall staff turnover and lack of expertise staff including lack in-depth knowledge on climate change is indicated as the hindering factor in effective implementation of most projects.

In regards to data management, the official notes that there is neither a database system nor a monitoring and evaluation (M&E) system in place to track climate change adaptation activities at various levels. DCC requires tools and guidance for establishing these systems, including those for mainstreaming cross-cutting issues such as climate change, which must link central, sectoral, and provincial levels. Data and information systems essential for informing ministerial sectoral and cross-sectoral development planning and budgeting processes are extremely limited. Consequently, a monitoring framework is required to measure the effectiveness of climate actions. Transparency remains a challenge, as data, methodologies, and analysis results are not shared, causing each sector to rely on its own data and methodology. One official explained that different sectors using varying figures and data hinder the assessment of actual progress and make it difficult to determine each sector's direct contribution to climate change adaptation. DCC staff also describe issues with human resources concerning data

collection, such as insufficient time to collect data from other sectors, leading to unsuccessful data requests. However, staff adds that Dropbox is commonly used in sharing data and information among divisions in DCC.

The collection of climate change data is highly technical, and there is a lack of sectoral-level implementation. Additionally, different sectors have distinct adaptation targets, making it challenging to consolidate them into an overall target, especially without data and budget information sharing across sectors. There is also a gap in the absence of an institutional framework and capacity to support consistent, reliable, and regular data collection across all sectors. The DCC lacks a framework for data collection and sharing with other sectors, and while the mitigation data collection framework is more progressive than adaptation. As the data platform on Greenhouse Gas reporting, and measuring, reporting and verifying (MRV) has been initially established and included in the official web portal of MONRE (<http://www.monre.gov.la/gweb/backend/web/index.php?r=site/detail&id=613>). However, little progress has been made in developing a climate change adaptation database system. Therefore, institutional arrangements and technical capacities must be established for the DCC and relevant sectors to generate and report data for monitoring climate change adaptation progress.

Furthermore, DCC staff have identified various constraints affecting database development, such as the lack of long-term historical data on meteorology, hydrology, and water flow, which hinders vulnerability and adaptation studies. There is also limited information flow between climate science researchers, government policymakers, and the public, particularly local communities. The lack of trained technical and human resources in Lao PDR is constraining the nation's ability to manage information flow. Additionally, suitable national climate scenarios are required as a foundation for impact analysis. The current limited government budget funding hinders the department's capacity to develop digital databases and information systems and operate and activate ministry and department websites. Therefore, significant issues concerning knowledge generation, capacity, and budget still require attention.

In terms of coordination, there is an institutional coordination framework for cross-sector collaboration and climate change work, including the National Environment Committee (NEC) and the Technical Working Group on Climate Change (TWGCC). However, a fully functioning national coordination mechanism is currently lacking. Both the NEC, responsible for overseeing environmental and climate change functions at the policy level, and the TWGCC at the technical level, are potentially crucial components of such a coordination mechanism. Nevertheless, neither body has been effectively operational in recent years, leading to limited national awareness of climate change and minimal progress in shifting mindsets and implementing change management in government and private sector processes.

With regard to gender equality, DCC staff have expressed personal views that gender roles and equality have been progressively promoted through project implementation in recent years. Most adaptation projects have included gender indicators and disaggregation in each component and activity. However, climate change information dissemination and women's access to information are still limited at the local level. Therefore, it is essential to enhance the engagement of more women staff and improve information sharing activities at the local levels in key sectors.

Department of Planning and Finance, MONRE

The Department of Planning and Finance (DPF) within MONRE plays a pivotal role in macro-planning and budget management for tasks related to natural resources and the environment, including policy and development plans, as well as serving as the coordinating body between MONRE and relevant line ministries/sectors. The DPF comprises five main divisions: 1) Administration; 2) Project Management; 3) Planning and Cooperation; 4) Budget and Revenue; and 5) Accounting. It currently has 45 staff members, with 24 of them being female. Notably, there are four staff members responsible for climate change-related work, particularly involving climate funds, as the DPF acts as the National Designated Accreditation (NDA) for climate funds such as the Green Climate Fund (GCF) and the Global Environment Facility (GEF).

In terms of projects, the DPF is currently implementing a climate resilience project under the GCF – Readiness Programme, titled "Resilient Covid-19 Recovery and Transformational Pipeline Development to Boost Climate

Action in Agriculture, Land, and Water Sector in Lao PDR," in joint collaboration with FAO. It has been reported that a low level of capacity and understanding among staff is hindering effective project implementation. This is attributed to the fact that most staff have diverse backgrounds in administration and management, with some being assigned to climate change-related work. Additionally, staff turnover and a low total number of staff members are identified as potential challenges. In the worst cases, staff members who have completed their higher education degrees overseas have permanently resigned from the department. Language proficiency is also cited as a key constraint, as the main role of the department involves coordinating with various stakeholders and partners, often requiring proficiency in languages such as English. Therefore, capacity development in project management, finance, knowledge of climate finance mechanisms, and strengthening language capabilities is necessary for DPF staff to ensure effective project implementation.

It has been disclosed that the DPF lacks a developed database system or website. Although MONRE has its own website, the lack of financial capacity to update the system or platform, as well as to sustain regular maintenance due to the absence of technical staff, are significant challenges for database management within MONRE. DPF staff have reported the common use of "Google Drive" as an information sharing platform in each division.

Primarily, DPF serves as the coordinating body representing MONRE with other sectors. Additionally, DPC is a member of various coordination mechanisms developed for climate change, including the NAP Development Process Steering Committee, NDC Revision Steering Committee, Carbon Credit Decree Development, National Climate Change Strategy Development Committee, and others. Apart from climate change, DPF also serves as the leading department in coordinating the Sector Working Group on Environment and Natural Resources on behalf of MONRE, and is a key member of other relevant sub-sector working groups related to land, water resources, and the environment.

A notable issue that has been raised is the significant barriers in project implementation within DPF, particularly regarding the extensive processes for document reviews and approvals. The internal processes and procedures within DPF and MONRE, involving different levels of staff, can consume considerable time in the approval of project-related documents, leading to delays in project and activity implementation. In some cases, the approval of a single document submitted can take several months for reviews and approval.

In terms of gender representation, it has been noted that the number of female staff within DPF is lower than male staff, and there is an imbalance in the ratio of male to female staff within the department, with some divisions having a higher number of female staff and others having more male staff. Regarding climate change, despite DPF's responsibility for climate finance for MONRE, most staff, particularly female staff, have not participated in training related to climate change and still have a low level of understanding on climate change, especially climate finance.

Environment Protection Fund, MONRE

The Environment Protection Fund (EPF), a department-equivalent office under MONRE, is a state fund created to raise funds for natural resource management and environmental protection, including climate change. It mobilizes various funds received from internal and external sources to support natural resources management and environmental protection. The department comprises three divisions: 1) Administration; 2) Project Management; and 3) Finance. Among the total 31 staff members, 20 are female.

The Project Management Division is the most relevant division responsible for climate change-related projects. However, there is no specific staff appointed by mandates for climate change projects in the EPF. The most relevant work on climate change centers on reviewing and approving funding for climate change-related proposals submitted by government entities from different sectors at both national and local levels. Although climate change is a key policy for funding under the EPF, several climate change projects have been mobilized and funded in the past years. However, there is currently no climate change project being implemented. The only climate change adaptation project involved by the EPF is the GCF-funded project titled "Building Resilience of Urban Populations with Ecosystem-based Solutions in Lao PDR," which is being implemented with DCC, with the key roles of EPF in managing and overseeing budget planning and approving the project activities.

One of the challenging issues faced by EPF in project implementation is the insufficient staff specifically responsible for climate change-related work, such as those who can review and provide technical support on climate change proposals submitted by different sectors. Notably, most staff under EPF are not permanent staff; they are contract-based and supported by projects. It is notably reported that only four staff under EPF are permanent government staff. Human resources capacity development, especially in the area of climate change, such as providing sufficient and regular training events on this particular topic, is required for EPF.

EPF has developed its own website and platform for sharing information on funds received and provided to different government entities (<https://laoepf.org.la/en/>). However, the website is not regularly updated, and there is no specific staff responsible for managing and maintaining this information system. These capacities of finance and staff are the most needed for information management in EPF. Apart from database management, the EPF staff inquired about the need to develop the capacity of the EPF staff members on climate change adaptation related topics.

Staff turnover is a core challenge in the EPF, as staff have often been moved to other divisions or departments, causing a lack of continuity in activity or project implementation. In terms of gender representation, the number of female and male staff in each division is not balanced, with some having more male staff than female. Additionally, the ratio of female staff in EPF is lower than that of male staff in comparison to other departments, with only 4 female staff out of 34 staff in the EPF.

Department of Activity, Lao Youth Union

The Department of Activity (DOA), a key department under the Lao Youth Union, is responsible for implementing youth-related programs and activities, including raising awareness and promoting environmental protection. With a total of 17 staff members, including 8 females, the department comprises three divisions: 1) Youth Activity Division; 2) Youth Competition Division; and 3) Youth Organization Management Division. However, it is reported that there is no division or staff in charge of climate change-related activities or projects.

Furthermore, there have not been any climate change-related projects or activities in the department. The department has two ongoing projects being implemented with different partners. One activity, called 'Two Cleans,' is being implemented with the Vientiane Capital Governance Office, focusing on making Vientiane Capital clean and green, including activities to raise awareness about stopping littering in public. The other project, titled 'Road Safety,' is supported by JICA and is in collaboration with the Department of Transport, MPWT.

In terms of challenges, staff reports that a lack of financial capacity remains a key challenge in the effective implementation of work for the department, as most financial support relies on projects and development partners. Interestingly, one interviewed staff member raises that, due to limited budget, several awareness-raising plans covering different topics of youth, environmental protection, and DRM had to be organized simultaneously to reduce costs. Furthermore, the lack of specialized staff with relevant backgrounds and a better understanding of climate change adaptation and DRM is also a constraint in project implementation. Despite some of them having received training in DRM provided by other departments and ministries, they still have limited practical experience in responding to disasters as most trainings were theory-based. Additionally, the deficiency in equipment for responding to emergency events, including insufficient rescue boats and life jackets, hinders work implementation.

Therefore, developing the capacity of staff by providing training on various climate change topics is required for the department. Moreover, ensuring sufficient budget and equipment for disaster response from the government and external support providers is crucial for enhancing effective work implementation.

Department of Ethnicity, Lao Front for National Development

The Department of Ethnicity (DOE), under the Lao Front for National Development (LFND), plays a key role in community-level awareness and dissemination activities. The DOE is structured into two main divisions: 1)

Ethnicity Right Protection; and 2) Ethnicity Propaganda. The department employs 18 staff members, of which eight are female, and three are specifically tasked with managing climate change-related project implementation.

The DOE collaborates with the Department of Forestry under the Ministry of Agriculture and Forestry (MAF) on a REDD+ initiative titled 'Governance, Forest Landscapes and Livelihoods in Northern Lao PDR (GFL).' This project aims to achieve emission reductions across six provinces in Lao PDR. As a key member of the project committee, the DOE is instrumental in conducting awareness, dissemination, and monitoring activities concerning forestry management and protection within the project's district and provincial communities.

Furthermore, the DOE is engaged in two additional significant initiatives. One, in partnership with the Ministry of Natural Resources and Environment (MONRE), focuses on environment and natural resources protection. This collaboration between the LFND and MONRE commenced in 2021 and is set to conclude in 2025, involving the provinces of Vientiane Capital, Attapeu, and Oudomxay. The other initiative is a mitigation project with the private sector entity 'New Chipxeng Company.' This project aims to enhance carbon credits by implementing activities related to cookstoves and wet-dry rice fields, in collaboration with the Department of Climate Change, Department of Irrigation, Department of Environment, and the National Agriculture and Forestry Research Institute. However, this latter project is still in the early stages of implementation.

Although DOE actively engaged in mitigation efforts, it has not yet implemented any projects specifically related to climate change adaptation. The department's current involvement in adaptation largely consists of participating in workshops and activities organized by other departments, such as consultation workshops or training events. It has been noted that there is no concrete plan for climate change adaptation within the department, primarily because the concept is relatively new to the staff, especially at the policy-making level. There is a general lack of advanced knowledge and understanding of climate change adaptation and its impacts among the staff.

Furthermore, there are significant gaps and challenges in effectively executing climate-related projects due to the absence of staff with experience and expertise in climate change adaptation. There is a pronounced need for enhancing staff knowledge and understanding of both climate change mitigation and adaptation to effectively carry out climate-related work. Staff members also underscore the importance of increasing ownership of climate-related projects and activities, particularly those aimed at raising awareness at the community level. Additionally, securing an adequate budget is identified as a crucial element for the successful implementation of projects and activities, with a particular emphasis on the funding needed for awareness-raising efforts and the monitoring of activities at the local and community levels.

In terms of gender dynamics within the department, it is reported that the proportion of female staff is higher than that of male staff. Furthermore, women predominantly occupy policy-making positions and are actively engaged in relevant departmental projects and activities.

Department of Development in Women, Lao Women Union

The Department of Development in Women (DDW) under LWY is organized into three divisions: 1) Activity; 2) Gender Mainstreaming; and 3) Women and Family Promotion, with a staff of 13, including 10 women. Notably, three individuals are designated to be responsible for climate change-related activities, particularly within the Women and Family Promotion division, which focuses directly on these activities.

The DDW is implementing an initiative titled "Enhancing Capacity of Women on Protecting Environment and Climate Change," funded by the Environmental Protection Fund (EPF). Launched in 2021 and set to be ended in 2025, this initiative aims to build capacity and raise awareness among local women in two districts across the Savannakhet and Xekong provinces. Its activities include developing guidelines for promoting gender equality at the community level and conducting training of trainers (TOT) sessions on climate change and environmental protection.

Additionally, the DDW is involved in an impending climate change adaptation activity, "Build Resilience of Urban Populations with Ecosystem-based Solutions in Lao PDR (Urban EbA)." This project, awaiting approval for

funding from the Green Climate Fund and supported by the Department of Climate Change (DCC), MONRE, which is anticipated to start by 2024. The DDW's role in this project will be to facilitate capacity-building activities and enhance awareness among local women, as well as to develop guidelines on climate change and gender promotion. Furthermore, the DDW is collaborating with Cambodian entity to develop a project proposal focused on climate change adaptation. This bilateral initiative targets the provinces of Khammouan and Luangnamtha in Lao PDR.

The staff at DDW has identified several challenges in their efforts to raise awareness about the impacts of climate change and Disaster Risk Management (DRM) for women. One of the primary challenges is the lack of tools and equipment necessary for effective awareness-raising campaigns. Additionally, there are insufficient activities aimed at disseminating climate change knowledge among the public, specifically tailored for women's group organizations at various levels. This shortfall is linked to inadequate funding support. The funding for these initiatives predominantly relies on external projects and donor contributions, which often fail to cover the needs of prioritized districts and provinces within Lao PDR.

The official highlighted that LWU has a critical role in engaging closely with local communities to promote awareness and campaign activities on various topics, including clean water, gender engagement, and climate change. These activities are particularly focused on women throughout the country. To effectively carry out this role, the LWU requires support in terms of community awareness tools and communication equipment, such as brochures, infographic handouts, and speakers. Ensuring the availability of these resources is essential for the LWU to effectively disseminate information and raise awareness during their interactions with local communities.

Summary

In short, the survey assessment results indicate that most offices have different climate change adaptation related projects or programs being implemented, which are effectively managed and implemented by their offices. However, half of the surveyed offices have not developed a database system for their sectors. Nevertheless, the majority of surveyed offices have coordination and institutional mechanisms in place to involve multiple stakeholders in relevant activities. Importantly, all offices have actively encouraged women to participate in consultations or capacity development program activities.

The qualitative assessment shows that most sectoral departments have institutional mandates and roles regarding climate change adaptation and DRM for their departments, especially MAF (DPC, DOA, DOF, NAFRI), MPWT (DHUP, PWTI), MONRE (DCC, DWR, DMH), LFND and LWU. Specific staff have also been assigned for climate change related work in their departments. Many offices such as DWR, DMH, NAFRI, EPF have also developed their own databases for sharing and consolidating information within their departments and sectors. However, insufficiency in financial capacity as well as lack of human capacity (both technical knowledge and better understanding of climate change) poses challenges for institutional arrangements in most departments. Therefore, most offices similarly note that developing the capacity of relevant staff with in-depth knowledge and understanding of climate change, improving data management and sharing systems, ensuring tools and equipment provisions for monitoring climate change and DRM work, and providing sufficient funding for activity implementation are the most needed for all sectors.

In terms of gender equality and social inclusion (GESI), the most relevant organizations in Lao PDR worked on this aspect including the Lao Women Union (LWU), Lao Youth Union (LYU), Lao Front for National Construction (LFND). Especially, the Department of Lao Women Development under LWU is actively engaged in promoting gender equality and preventing discrimination against women. The Department of Activity under LYU is responsible for youth-related programs and activities, including raising awareness and promoting environmental protection. While the Department of Ethnicity under LFND works for and represents the vulnerable and ethnic groups across the country. These departments have implemented different projects and activities related climate change adaptation and mitigation. However, they face challenges related to limited financial capacity, a lack of specialized staff with relevant backgrounds and practical experience in responding to disasters, and insufficient tools and equipment for awareness campaigns and insufficient funding to cover

the needs of prioritized districts and provinces. Due to budget constraints. Most GESI related departments emphasize the need for staff training, increased ownership of climate-related projects, and securing adequate budgets for successful project implementation. Additionally, the department reports a higher proportion of female staff and their active engagement in relevant projects and activities. Especially department of LWU requires support in terms of community awareness tools and communication equipment to effectively disseminate information and raise awareness during their interactions with local communities.

2.3 Individual Level Capacity

2.3.1 Individual Level Capacity Assessment

This section's assessment primarily focuses on individual capacity level across various sectors. This included evaluating both quantitatively and qualitatively technical knowledge and human capacity for implementing and managing climate change adaptation related activities as well as their training and capacity development activities received and required regarding climate change management under key sectors.

2.3.1.1 Survey Assessment Results

Out of 20 survey participants, approximately 45 percent indicated that the competence and knowledge of their staff on climate change topics, such as climate scenarios, modeling, CRVA, and provision of information on hazards, is relatively low (Figure 36: Staff competency in analysis of climate modelling and CRVA). Half of the respondents reported not having a capacity development program or plan in place for climate change areas (Figure 37: Existing capacity development program/plan for staff on climate change areas). Notably, approximately 67 percent of them indicated that the performance on capacity development programs is relatively effective (Figure 38: Overall effectiveness of sectoral offices in implementing capacity development programs). About 70 percent of them believed that their offices had not conducted a capacity needs assessment for the staff (Figure 39: Capacity need assessment conducting for staff). However, 45 percent of participants disclosed that their staff have a low level of competence in using climate change-related tools (Figure 40: Staff competency in climate related tools using). While 60 percent of respondents noted that staff were not adequately provided with training opportunities on climate change topics, such as climate change planning and climate risk and vulnerability assessments (Figure 41: Training provisions to the staff).

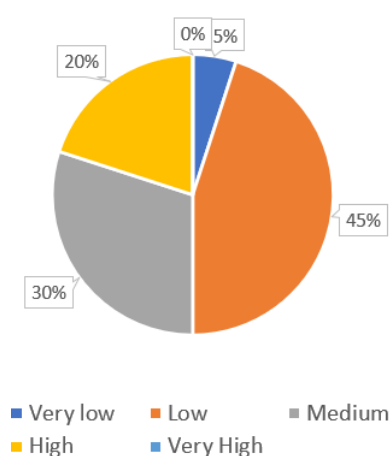


Figure 36: Staff competency in analysis of climate modelling, CRVA, and provision of information on hazards

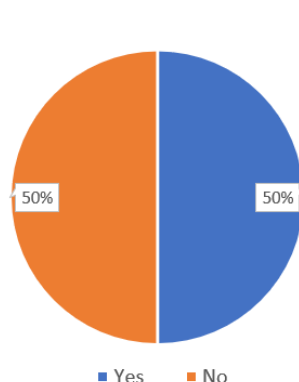


Figure 37: Existing capacity development program/plan for staff on climate change areas

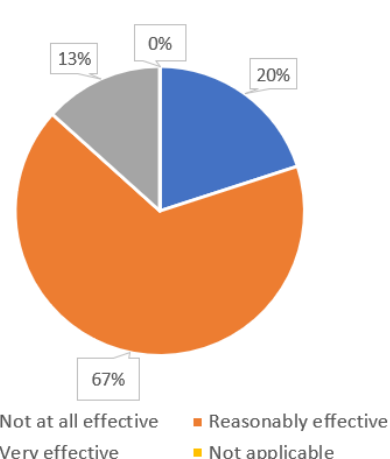


Figure 38: Overall effectiveness of sectoral offices in implementing capacity development programs

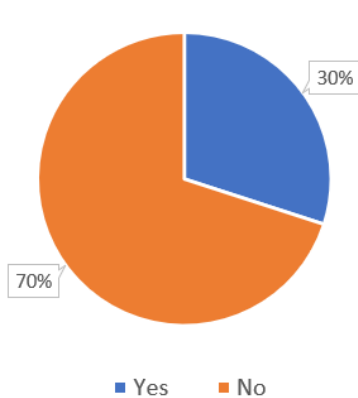


Figure 39: Capacity need assessment/analysis conducting for staff

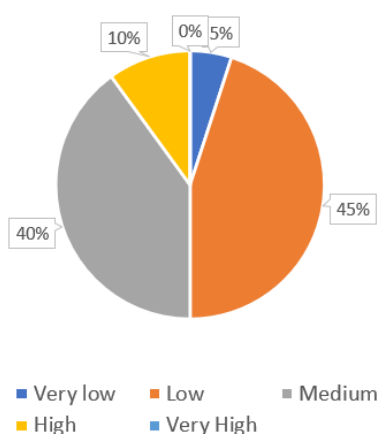


Figure 40: Staff competency in climate related tools using

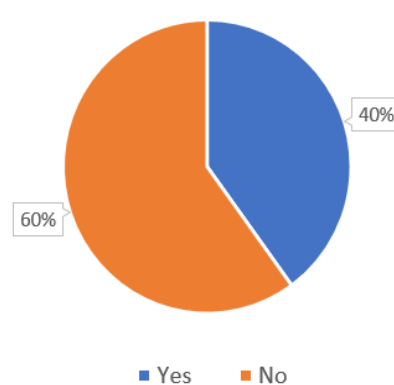


Figure 41: Training provisions to the staff on climate change adaptation

In terms of training and capacity building needs, approximately 70 percent of respondents disclosed that the most required training mode to improve the capacity of their staff is technical training, followed by 20 percent and 10 percent of respondents who mentioned the need for data management training and knowledge sharing and exchanging, respectively (Figure 42: Needed activities to improve staff capacity). Additionally, 75 percent of surveyed offices indicated that there has not been a training manual or toolkit on climate change in place in their offices (Figure 43: Existing training manual/toolkit on climate change). While half of them preferred 2-3 working days of training (Figure 44: Preferred number of training days). Notably, instructor-led classroom, mentoring and coaching, and workshop modes of training are the most preferred by surveyed participants, with 155, 140, and 126 scores given, respectively (Figure 45: Preferred training delivery modes).

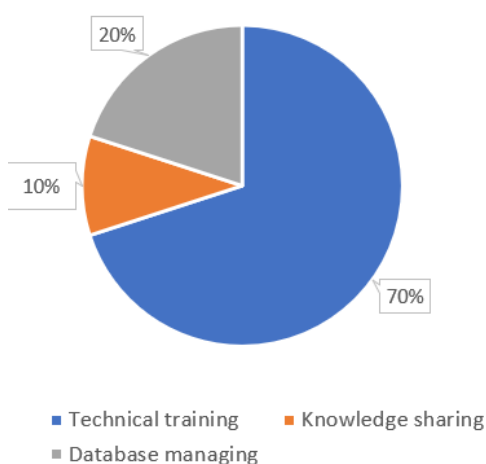


Figure 42: Needed activities to improve staff capacity

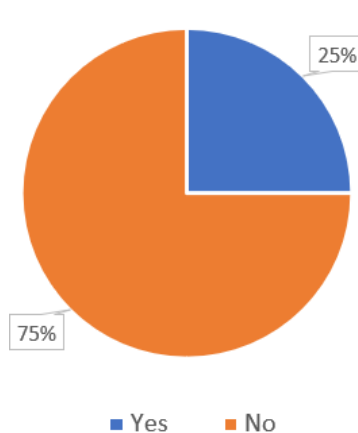


Figure 43: Existing training manual/toolkit on climate change

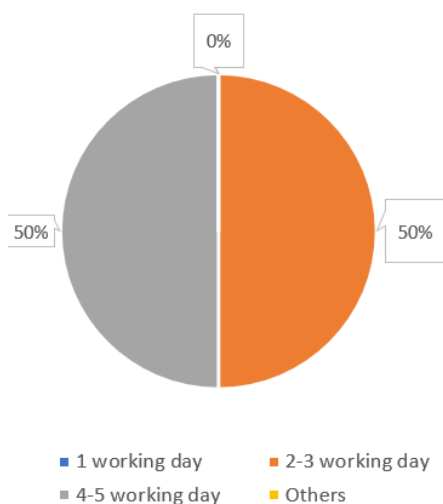


Figure 44: Preferred number of training days

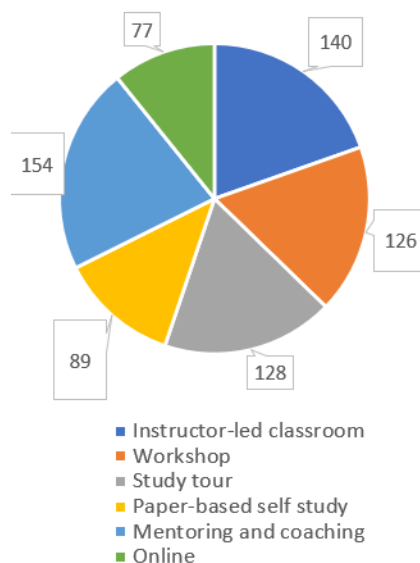


Figure 45: Preferred training delivery modes

When it comes to the level of climate change knowledge, most surveyed respondents indicated having basic knowledge on various climate change topics, particularly with the most ranked areas of climate change M&E, climate change adaptation, climate change basics, and climate change mainstreaming. Meanwhile, a minority of them reported being knowledgeable on different climate change topics, such as advanced climate change, CVRA, climate change mainstreaming, climate change adaptation and gender, and climate finance (Figure 46). Additionally, most respondents also ranked the most preferred climate change training topics, including advanced climate change, climate change adaptation and disaster risk management (DRM), climate change M&E/MRV, climate change adaptation, stakeholder engagement and inclusion, and climate change policies and plans (Figure 47).

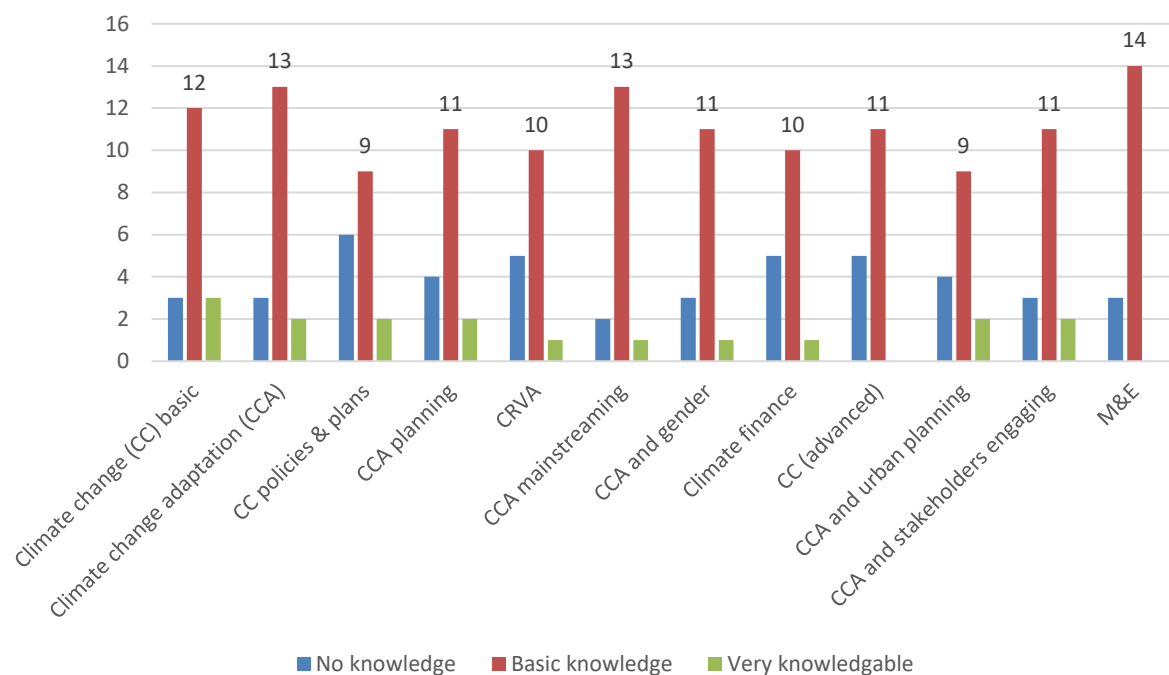


Figure 46: Level of staff knowledge on climate change topics

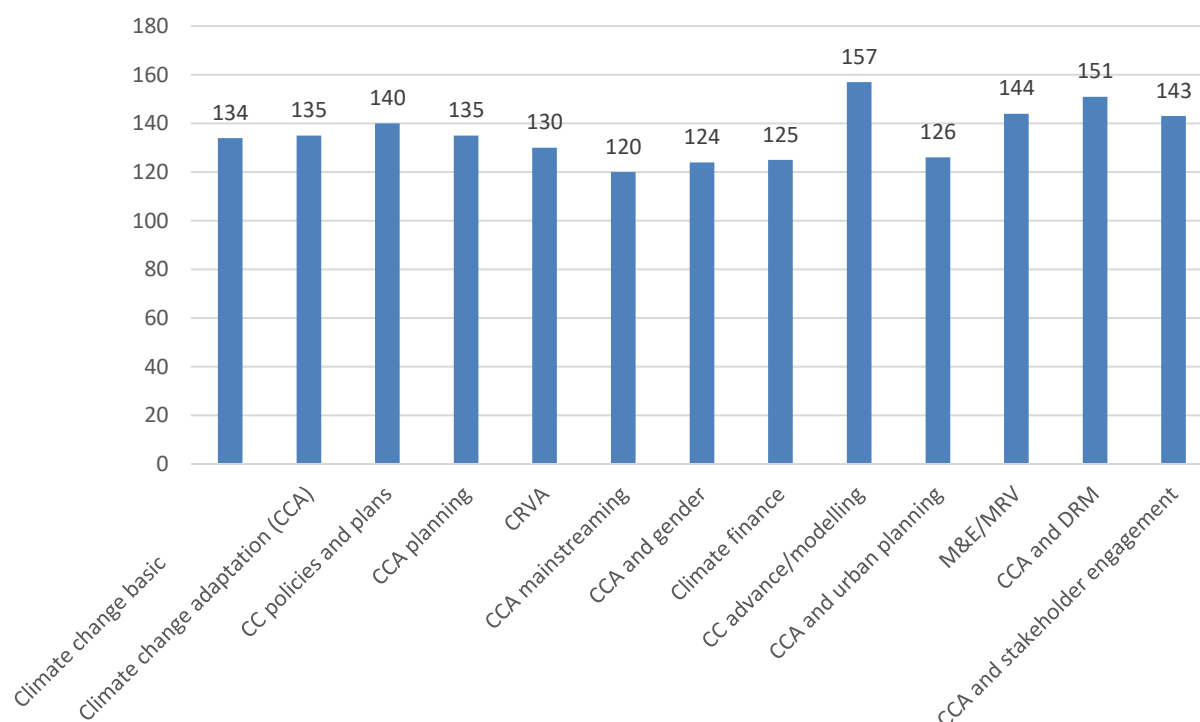


Figure 47: Preferred training areas and topics on climate change

2.3.1.2 Sectoral Capacity Assessment

2.3.1.2.1 Agriculture and Forestry Sector

Department of Planning and Cooperation, MAF

The staff members of the Department of Planning and Cooperation (DPC) under MAF have regularly participated in various training workshops related to climate change and disaster risk management. However, it is reported that there is no capacity development program, guidelines, or manuals on climate change developed under DPC, as no climate change-related projects are being implemented in DPC.

Despite this, the staff expressed interest in more in-depth training, particularly long-term or intensive courses, covering topics like M&E on climate change adaptation, database management, and so on, as most staff lack this knowledge. Although there have been relevant training workshops in the past, they lacked depth. Moreover, the staff suggests that improving the coordination mechanism with clear roles for staff, providing sufficient training opportunities covering best practice and lessons learned sharing on climate change adaptation planning, as well as ensuring a sufficient budget for capacity development programs, are critical for the sustainable capacity development of staff in DPC as well as MAF.

Department of Agriculture, MAF

The staff of the Department of Agriculture (DOA) have participated in climate change training workshops to some extent, but in-depth training in this area has been limited. They have attended various training sessions on climate change adaptation topics such as climate-smart agriculture (CSA). However, most of these training sessions are short to medium-term and primarily focused on agriculture and forestry.

It is noted that there is no existing capacity development program, relevant guidelines, or manual for climate change capacity development in particular. Additionally, no specific tools have been provided and no particular staff have been appointed for this work. These are still key gaps for staff capacity development. However, several guidelines on agriculture have been developed under DOA.

It is informed that most staff have a medium level of climate change knowledge and understanding as many of them have participated in various trainings on climate change in the past. However, some of them may not have an in-depth understanding of climate change adaptation, particularly regarding climate change causes and impacts, as well as data management on climate change. Staff interviewed expressed the need for receiving more training on climate change and disaster response, such as early warning systems for climate-related disasters and identifying and prioritizing adaptation measures for different phases – before and after disaster events.

Department of Livestock and Fisheries, MAF

The staff of the Department of Livestock and Fisheries (DLF) have participated in numerous climate change and disaster risk management training workshops organized by both projects and national government entities. They have also engaged in knowledge and experience exchange activities with different projects. Additionally, the DLF actively encourages the participation of women in training activities. However, similar to other departments in MAF, there has not been the relevant capacity development program and activity developed in DLF. Furthermore, aside from their guidelines for livestock and fisheries, there are no guidelines or toolkits on climate change adaptation for the livestock and fishery sector.

DLF suggests that to fill the capacity gap of staff, various capacity development activities should take place, including training provisions on climate change tools and approaches, such as climate risk assessment, monitoring and evaluating, as well as early warning system tools and equipment for the livestock and fisheries sector. Additionally, DLF proposes the appointment of particular staff under DLF for climate change projects and capacity development activities to represent DLF in coordinating and participating in training workshops. This can ensure the continuation of the staff's training participation.

Department of Forestry, MAF

In terms of individual capacity, the staff of the Department of Forestry (DOF) have participated in technical training to some extent, mostly focusing on climate change mitigation. However, interviewed staff note that they have not regularly participated in climate change adaptation in particular. It is also reported that DOF has strong human capacity experienced in climate change mitigation with support from various capacity development

programs conducted by mitigation-related projects, programs, and partners such as REDD projects. Several guidelines, manuals, and training toolkits have been developed for forestry and climate change mitigation through project support, but no adaptation-related guidance documents have been developed for the forestry sector.

It is reported that most staff under DOF have good basic knowledge and understanding of climate change because many of them have participated in various training events in the past. However, in-depth knowledge on climate change remains limited for DOF staff. Thus, staff highlight the need for training provisions on in-depth climate change topics as well as the necessity for experience exchange activities for high-level officials, such as study visits. Additionally, a climate change adaptation guideline is needed to be developed with detailed adaptation measures for the forestry sector since DPC still lacks this.

National Agriculture and Forestry Research Institute (NAFRI), MAF

As reported, staff members at NAFRI have regularly participated in various training workshops offered by different development partners and through project support, such as the 'Strengthening Agro-climatic Monitoring and Information Systems (SAMIS)' project with the Department of Meteorology and Hydrology, MONRE, and support from the Food and Agriculture Organization (FAO). Additionally, there is a component focusing on the capacity development of staff on meteorology and hydrology, as well as training programs for participating farmers, centered on climate-smart agriculture (CSA).

In addition to capacity building programs, NAFRI has developed a couple of guidelines and manuals related to climate change adaptation, such as the guideline on crop calendar development for farmers, the guideline on agricultural techniques on climate change for farmers, and the guideline on CSA approach. Furthermore, most staff have a better understanding and knowledge of climate change adaptation due to their participation in capacity development activities covering various topics on climate change research, data collection, climate risk mapping, and identifying agricultural ecology. This is particularly true for staff at the Rural Economy and Agriculture Research Center for Climate Change Adaptation of NAFRI, who have direct roles in climate change matters. Apart from receiving training, NAFRI staff have also provided different training programs for farmers, such as the recent capacity development activities on using information and crop varieties that are resilient to droughts.

Despite numerous training activities, NAFRI staff remain lacking in in-depth technical knowledge of climate change research and analysis for the agriculture and forestry sector, especially those who do not have an educational background in climate change. According to NAFRI staff, low skills in language and tool usage, limited financial support, and a lack of lessons learned from other countries are still key capacity gaps for the staff. Furthermore, while some guidelines have been developed, others related to M&E, coordination and reporting development, as well as technical training manuals on climate change risk management and planning for agriculture and forestry, are not yet in place and thus need to be further developed. Lastly, there is a need for training provisions on climate change impacts, risk management, and climate modeling development for the agriculture and livestock sector.

2.3.1.2.2 Urban Development Sector

Department of Housing and Urban Planning, MPWT

In regards to the Department of Housing and Urban Planning (DHUP), staff have participated in climate change-related training programs to some extent, although these opportunities have been infrequent, occurring roughly four times a year. Most of the training has been provided by the Ministry of Natural Resources and Environment. However, the department has participated quite frequently in climate change training for projects. According to interviews, staff have attended training workshops in various countries on topics such as GIS and spatial planning tools in the urban sector. Additionally, female staff have been encouraged to participate in relevant training to ensure balanced participation alongside male staff.

In terms of climate change adaptation, the department has received training on topics such as climate change

science and adaptation planning. Notably, capacity development activities have also been carried out for projects in DHUP. Interestingly, approximately 20-30 percent of the staff have a medium level of climate change knowledge, while around 70 percent of them have a basic knowledge of climate change. Moreover, DHUP has developed several guidelines and manuals, such as the Guideline on Building Construction and Designing in Risk Areas, and the Guideline on Urban Planning Development.

However, the capacity of staff in developing relevant policies and plans is still limited, as well as their capacity in handling the workload under the department. Staff interviewed also report a lack of particular skills among the staff, such as language proficiency, computer software proficiency, and report writing, which are considered challenging issues for DHUP. Accordingly, staff suggest that training topics should be provided for DHUP staff, covering database development and management on climate change, data analysis QA and QC. Furthermore, they add that ensuring the continuation of training provisions and assessing the knowledge and capacity of staff are also critical.

Department of Road, MPWT

The Department of Road (DOR) staff have participated in various training workshops and capacity-building programs on climate change conducted by different projects and government entities. Although the staff have been involved in climate change adaptation-specific programs and training to some extent, their knowledge of climate change adaptation is reported to be at a medium level for the staff. Numerous capacity development programs are being implemented through project execution, focusing on building the capacity to manage and respond to disasters.

DOR highlights the current absence of a capacity development program related to climate change and disaster management but indicates a plan to develop a program on this topic in the near future. Most training programs are conducted through project implementation or provided by other government entities and development partners. In some cases, DOR staff are involved in capacity-building programs through data collection activities at the local level with the support of projects within DOR. However, it is noted that most staff lack access to climate change knowledge and information as well as disaster risk management, hindering the uptake of climate change knowledge among staff in most departments of MPWT. Approximately 30 percent of staff in DOR are estimated to have a good understanding and knowledge of climate change. Additionally, one guideline on climate change planning for the road sector has been recently developed.

Moreover, unclear staff roles and a lack of continued training participation remain key gaps in enhancing the capacity of staff in the topic of climate change. Limited skills and capacity in language and particular software tools also pose challenges to capacity building. Furthermore, a scarcity of best practices and real case studies is noted as a gap in uptake climate change adaptation for staff in general. Therefore, staff interviewed assert that there is a need to address these challenges by providing training on various topics on climate change, including training on using particular programs and software for climate change risk assessment, technical approaches on climate change adaptation determinations, and climate change adaptation planning. Moreover, more training activities on climate change adaptation should be ensured to be provided regularly and frequently to the relevant staff, along with ensuring the continuation of staff participation in each training.

Public Works and Transport Institute, MPWT

In relation to the Public Works and Transport Institute (PWTI), staff have participated in various capacity development and training programs related to climate change, conducted by relevant projects and development partners such as MONRE, UNEP, and GGGI. Most staff members are well-trained in various topics, including climate change adaptation (EbA) concepts related to public works and transport. As PWTI is involved in climate change adaptation projects with MONRE that are currently being implemented, specific capacity development programs on climate change adaptation have been provided. Furthermore, efforts to promote gender inclusivity and women's empowerment within PWTI have been relatively enhanced. Despite a male-favoring staff ratio, female staff members are encouraged to participate in capacity development activities, with PWTI supporting their involvement in capacity building and training programs held by relevant projects.

Currently, there is one capacity development program developed regarding climate change adaptation with support from UNEP and MONRE through the project called 'Building Resilience of Urban Populations with Ecosystem-based Solutions in Lao PDR.' This program focused on building the capacity of relevant staff to use the ecosystem-based adaptation approach for the urban development sector and was developed with four academic institutes of Lao PDR. Guidelines and manuals regarding climate change adaptation have been developed under PWTI through this project. However, PWTI also has a priority plan to develop more guidelines in the near future with support from incoming projects.

However, a key gap under PWTI is the insufficient specialization of staff in climate change, as well as the lack of its own capacity development program. Currently, most knowledge and capacity development activities for staff depend on project and development partner support, both financially and technically. Additionally, the low level of skills in language usage, computer software, communication, and coordination when working with international partners or entities is another challenging issue. Therefore, staff suggests that enhancing technical capacity by providing knowledge and understanding on climate change, including basic knowledge on climate change, adaptation approaches, and adaptation planning for staff, is important to fill the gap. It is recommended to provide sufficient training events covering various topics on climate change for most staff, improve climate change information sharing and dissemination channels, and develop relevant guidelines and manuals for all staff. Furthermore, staff interestingly suggests that best practices on climate change adaptation should be applied as a case study, especially those involved in the public works and transport sector in Lao PDR.

2.3.1.2.3 Water Resources Sector

Department of Water Resources, MONRE

The Department of Water Resources (DWR) staff have consistently participated in climate change-related training workshops, including those focused on climate change adaptation, organized by various development partners and the department itself. The department has gained increasing familiarity with climate change adaptation due to its experience in implementing climate change adaptation projects. Moreover, most of their staff have attended climate resilience and disaster risk management (DRM)-related training workshops and activities through their own project implementation and collaboration with other government partners.

Currently, there are two climate change adaptation-related and water resources management projects underway: the UNDP's Integrated Water Resource Management and Ecosystem-based Adaptation (EbA) project, funded by GEF, which aims to promote integrated management of wetland sites in the Mekong River Basin to increase climate resilience in vulnerable communities in Savannakhet and Luang Prabang Provinces; and the Enhancing Integrated Water Management and Climate Resilience in Vulnerable Urban Areas of the Mekong River Basin project, implemented in collaboration with the UNDP and supported by the Korean Government. Both projects emphasize capacity development and include activities geared towards community engagement, awareness-raising about climate change adaptation, and knowledge-sharing within and beyond Lao PDR.

Importantly, DWR actively supports and encourages the involvement of female staff in training workshops, further enhancing gender equality and women's empowerment through the implementation of relevant projects. Additionally, several guidelines and manuals have been developed for the water resources sector, including Guidelines on Minimum Water Flow Calculation, Water River Basin Management Plan Development, and Water Resources Protection Zone Determination.

However, DWR continues to face financial constraints in capacity development, which remains a significant gap in enhancing the skills of staff responsible for water management and climate resilience-related work. Most financial support for capacity development comes from projects, which are limited to the project's duration. Interviews reveal that the department has received training on various topics from multiple projects, but lacks in-depth training on climate change adaptation topics such as climate risk vulnerability assessment (CRVA). Moreover, the lack of regular training participation and continuity of training provisions is another gap in enhancing the capacity of the relevant staff.

To address these issues, DWR staff strongly recommend intensive and in-depth training covering various climate change adaptation areas, particularly CRVA focusing on the water sector and community level. Ensuring sufficient funding provisions for training activities at different levels is also important, especially for the water resources sector at the community level. DWR staff also advocate for promoting staff to pursue higher degrees such as Master's or Doctoral degrees, as well as developing the capacity of the relevant staff to access scholarships from both internal and external funding providers, which should be a priority for this sector.

Department of Meteorology and Hydrology, MONRE

Under the Department of Meteorology and Hydrology (DMH), staff regularly participate in national, regional, and international capacity development activities and training workshops provided by projects and development partners. Numerous capacity development programs have been developed and delivered through project implementation, such as the Strengthening Agro-climatic Monitoring and Information System (SAMIS) project. This project trained national, provincial, and local DMH staff in agro-climatic and land resources information systems, enhancing institutional and technical capacity for data sharing, archiving, and analysis. The training activities included climatology (including seasonal forecasts), agro-meteorology, remote sensing, GIS, crop-yield forecasting, and the preparation of improved crop bulletins. Moreover, the department has been implementing the Climate Risk and Early Warning Systems (CREWS) since 2021. In terms of capacity development, the project has assisted DMH in enhancing their skills, improving the quality of hydromet forecasts, and developing early warning systems and flood forecasting models.

In terms of individual capacity, most DMH staff possess strong knowledge of climate change due to their participation in related training and workshops. The department is also well-versed in Disaster Risk Management (DRM) and climate resilience, as their work directly involves climate change and DRM, such as weather forecasting and early warning. Additionally, gender equality is a key consideration promoted by projects like the SAMIS project, ensuring high female participation in technical training and activities. It is reported that the DMH staff are well-trained and experienced, with approximately 60 percent of staff having expertise in related fields. Moreover, numerous guidelines, manuals, and toolkits have been developed through project implementation, including the Guideline on Applying Meteorology and Hydrology Tools, the Guideline on Weather Data Collection, and the Guideline on Weather Data Interpretation.

However, challenges exist at DMH concerning the capacity of staff in collecting data for weather forecasts, particularly due to the vast number of weather stations across the country. Collecting all data requires a significant human capacity in terms of quantity and quality, which may be lacking or insufficient in some provinces or districts. Despite these challenges, the DMH has clear mandates on meteorology and hydrology at all levels, with well-implemented roles and responsibilities such as early warning and weather forecast reporting. In terms of capacity building areas, DMH staff suggest that providing training on using tools such as weather forecast tools, GIS software tools, and modeling development tools on climate and weather is required for most technical staff. Moreover, since DMH works closely with local government entities in terms of weather data collection, developing the capacity of staff, not only within DMH but also among local staff, is needed in the short and long term. Importantly, the department also underscores the necessity of strengthening capacity of staff in specific areas that require improvement and advocates for enhanced knowledge on climate change through various activities such as training programs and advanced studies for master's degrees.

Department of Waterway, MPWT

The officials of the Department of Waterway (DOW) possess considerable experience and expertise in their respective fields, primarily because most staff members were previously part of the road and bridge department before the separation in 2008. Additionally, they have participated in various training programs and have established strong cooperation and coordination with multiple development partners through project implementation. Interviewed staff members expressed a good understanding of water management and familiarity with climate change, having attended training and dissemination workshops in the past. However,

there is a need for further expertise, capacity building, and financial support, as no training has been provided specifically for climate change adaptation to date.

With regard to gender participation, no projects under DOW have focused on gender equality. Nevertheless, the department is conscious of gender issues and has encouraged women's participation in past training and capacity-building activities. In terms of climate change adaptation, DOW staff have received some training on the subject. Capacity development programs, including the creation of training manuals and toolkits, have been supported by projects such as the Lao PDR Southeast Asia Disaster Risk Management Project, which provided technical training on water infrastructure design and facilitated overseas training and knowledge exchange programs. However, it is worth noting that the government allocates only a small annual budget for the department's capacity development.

In terms of individual capacity challenges, staff notes that the lack of continuity in staff training participation is still a key gap in the uptake of climate change knowledge. Moreover, staff turnover is also another challenging issue for sustainable capacity development for DOW. In general, DOW officials have a good understanding of climate change adaptation due to their participation in related training workshops in the past. Despite this, interviewed staff emphasize the importance of further understanding and capacity building to effectively collaborate with related projects.

Department of Irrigation, MAF

The staff of the Department of Irrigation (DOI) have actively participated in various training programs and capacity-building initiatives related to water and irrigation management, including climate resilience development. These programs have been provided by projects and other government institutes. The department is recognized for its strong human capacity, as staff members are well-versed in water management concerning irrigation development. This expertise is attributed to opportunities to attend relevant training workshops conducted by partners and government entities. The DOI also has a higher number of staff compared to other national departments, and female staff have been encouraged to participate in capacity development activities.

In addition to its human capacity, the DOI has developed numerous guidelines and toolkits, as well as provided capacity development programs and training to relevant sectors and communities. However, the government allocates a small annual budget for these initiatives, and the funding remains insufficient. Regarding climate change adaptation, an official stated that while ministry-level personnel generally understand climate resilience and disaster risk management (DRM), sub-national officials, especially at the district level, remain under-informed about these topics. Although the Ministry of Labour and Social Welfare and the Ministry of Natural Resources and Environment have invited DOI staff to climate change and DRM workshops, capacity development for sub-national government officials is still insufficient. Consequently, there is a growing need for climate change and DRM training, as well as information dissemination for sub-national government officials.

Furthermore, the lack of software, tools, adequate equipment, and on-the-job training provisions on using these tools still hinders the capacity development of staff under DOI. Despite ongoing discussions with technical departments in the past, no action has been taken due to a lack of government funding. DOI officials expressed the desire for financial support from development partners and the government for capacity-building and awareness-raising activities across all levels. Thus, these challenges should be addressed in the long run.

Officials acknowledge the need for more focused capacity-building initiatives related to climate change adaptation in the irrigation sector, guideline development, and training on climate change and irrigation, as existing training workshops offer only general information rather than in-depth climate change adaptation training specific to irrigation. Moreover, DOI staff also suggest that ensuring staff are able to regularly participate in both in-country and overseas training events should be enhanced. Promoting research and study capacity of staff on climate change adaptation and irrigation is also required, as well as piloting the climate-resilient irrigation scheme in this sector. Recent climate-related disasters such as floods have significantly impacted irrigation schemes, underscoring the need for capacity-building efforts for staff at all levels responsible for this sector.

Department of Energy Planning and Policy, MEM

As per the interview, DEPP staff regularly participate in capacity development activities and training workshops provided by projects and government entities such as the Department of Water Resources, Lao National Mekong Commission Secretariat, and others. Numerous capacity development programs have been developed and delivered within DEPP through its project implementation. However, most training activities have mainly focused on water management and disaster risk management rather than climate change. Some staff note that they have participated in climate change workshops several times conducted and provided by DCC, MONRE. When it comes to climate change adaptation, many interviewed staff are unfamiliar with adaptation and do not have a lot of knowledge about climate risk and vulnerability assessment (CRVA). This is assumed to be because only a few staff have had opportunities to participate in related training and dissemination workshops, as there is no climate change adaptation-related project being implemented for this department.

While there have been some capacity development programs that focus on using software tools such as GIS, modeling, and water level projection tools, it is also noted during the interview that some staff members of DEPP have a good level of proficiency in using the relevant tools and are competent in developing hydrological modeling and projections for the energy sector. However, many staff have a low level of understanding and knowledge on climate change, particularly in adaptation. This includes basic knowledge of climate change and advanced topics such as CRVA and climate change mainstreaming. Thus, the department proposed to receive more training on various topics, including modeling development and software tools for the energy sector, CRVA for the energy sector. The department also expressed interest in training topics on DRM, especially water management for preventing floods, as well as hydrological forecasting and early warning.

Department of Environment, MONRE

The staff of the Department of Environment (DOE) have occasionally participated in climate change training workshops organized by other projects and departments. Notably, they report that they have not regularly participated in climate change adaptation training workshops in the past, with only a few staff engaging in these events. As a result, DOE staff have a basic knowledge of climate change and are also unfamiliar with the concept and approach of climate change adaptation in comparison to other departments. This lack of regular participation in relevant trainings, capacity development programs, and climate change-related projects being implemented in DOE contributes to this situation.

Staff also report that DOE has not created training manuals or guidelines on climate change-related topics, as the department has not been directly involved in climate change work. Overall, DOE lacks opportunities to participate in and engage in capacity-building training and activities. Moreover, there is a limitation due to the lack of training programs and available training tools or manuals for DOE. Staff also interestingly raise the point that low language skills are also a gap in understanding climate change for most staff under DOE.

Interviewed staff suggest that more training opportunities should be provided for DOE, including training topics on climate risk and vulnerability assessment (CRVA) and climate change adaptation planning, as this knowledge would be beneficial for the environmental impact assessment reviewing work under DOE. Additionally, upgrading the language skills of staff is also reported as a necessary improvement by DOE staff.

2.3.1.2.4 Other Key Sectors and Departments

Department of Climate Change, MONRE

The staff at the Department of Climate Change (DCC) demonstrate a deeper understanding of climate change than those in other sectors, which can be attributed to numerous capacity-building activities provided by various projects in the past. These capacity-building and training activities are supported by various projects such as the "Building the Capacity of the Lao PDR Government to Advance the National Adaptation Planning Project," funded by GEF, and the GCF-funded project called "Building Resilience of Urban Populations with Ecosystem-based Solutions in Lao PDR," which have core components and activities on capacity development. Furthermore, DCC staff are well-versed in climate change adaptation, as they have regularly participated in related training workshops. Therefore, the staff's capacity in terms of knowledge and understanding of climate change is

relatively higher than that of other departments. Moreover, the involvement or participation of women in climate change capacity development activities has also been enhanced in the past through project objectives and activities.

Despite organizing capacity development training workshops on climate change at the national level, the DCC's limited budget prevents the implementation of in-depth capacity-building programs, and training typically consists of one-off workshops, with most capacity development programs relying on project support. Since systems for participants to practice what they have learned are not in place, knowledge retention from these workshops or programs is often inadequate. Although DCC has developed several capacity-building programs, there have not been formal guidelines or training manuals regarding climate change adaptation developed by DCC for both policy-making and technical level staff, such as the guideline on climate risk and vulnerability assessment (CRVA). There is a lack of dissemination of the existing and developed policies and plans for other sectors and at the local level.

Moreover, there are limitations on human capacity in both quality and quantity aspects within DCC. The department generally lacks specialized staff and experts with skills in using tools to address climate change across research, study, and analysis areas, such as CRVA and climate modeling and projection development. These capacity challenges can hinder DCC as well as MONRE in achieving national adaptation targets and plans addressing NDC and NSCC. Additionally, the low level of language skills and lack of educational background on climate change for some staff are also key gaps for implementing climate change work, according to DCC staff.

However, DCC has expressed interest in receiving more capacity building training on climate change adaptation, covering topics on Ecosystem-based Adaptation (EbA) and Nature-based Adaptation (NbA) approaches and best practices of this approach from other countries with similar contexts to Lao PDR. Moreover, training activities on climate change adaptation should be held regularly and participated in by the same staff, ensuring the continuation of the staff's participation. Lastly, language skills and project management capacity, including financial management and project planning, should be enhanced for staff who work directly with projects and development partners.

Department of Planning and Finance, MONRE

The staff members of the Department of Planning and Finance (DPF) have regularly participated in relevant training workshops on climate change, with most of these trainings being provided by projects and other departments such as DCC, MONRE. In terms of climate change adaptation, there have also been training activities recently held by DPF with support from the GCF Readiness funded project called 'Resilient Covid-19 Recovery and Transformational Pipeline Development to Boost Climate Change Action in Agriculture, Land and Water Sector in Lao PDR'. Notably, one of the primary focuses of this project's activities was on capacity development for staff in relevant sectors. Additionally, DPF staff report that the department actively supports female staff participating in climate change-related training workshops. However, it is reported that guidelines and manuals related to climate change adaptation have not been developed under DPF.

Staff interviewed also note that most staff under DPF have a medium level of climate change knowledge and understanding, as many of them have been involved in climate change training provided earlier by projects, especially in climate finance. Similar to DCC, low levels of language proficiency and in-depth understanding of climate change are reported as key gaps for individual capacity.

DPF staff propose that enhancing the capacity of staff should be a priority for DPF, focusing on the development of language skills of staff, providing more opportunities for climate finance training, as well as building capacity in accessing climate funds. Moreover, promoting further study at a higher degree level in climate change adaptation for those who work directly in this field is also important. Lastly, other skills in project management should be enhanced, including the ability in coordination, project financial management, report and email writing, and more.

Environment Protection Fund, MONRE

Similarly, the staff members of the Environment Protection Fund (EPF) have not regularly participated in climate change training workshops. Regarding climate resilience, staff have some understanding of this concept and have only participated to a limited extent in climate change adaptation training and meetings through projects. It is noted that there is no capacity development program developed under EPF. They have also been involved in the UNEP and MONRE project titled 'Building Resilience of Urban Populations with Ecosystem-based Solutions in Lao PDR' and act as the project's financial management entity. However, it is reported that staff have irregularly participated in the training activities of this project.

While there are no guidelines or training manuals specifically developed in EPF for climate change, most of the guidelines and manuals developed are related to financial accessing guidance of EPF. However, EPF has recently promoted the development of climate change-related guidelines and manuals through funds mobilized for the climate change activities of the Lao Women's Union, such as the development of the Guideline on Gender Participation Encouragement on Climate Change.

It is reported that most staff under EPF are assumed to have a low level of or basic knowledge of climate change. Staff also lack training opportunities compared to staff in other departments. Moreover, staff invited or participating in particular training events are not the same person, resulting in a lack of continuity in participation. Additionally, there is an insufficient number of technical staff with a relevant background in climate change within EPF, which represents a key gap in individual capacity development. Staff assert that training provisions on climate change, especially basic knowledge on climate change, are needed for EPF staff in the short and long term. Moreover, more opportunities for further study at a higher degree level in climate change should be provided through both government and project support.

Department of Activity, Lao Youth Union

The Department of Activity (DOA) staff have participated in various training programs and capacity-building initiatives related to disaster risk management (DRM) and reduction, provided by development partners and other government institutes. Recent training received includes programs by OXFAM about rescue and recovery provision for disasters, and by the Lao Red Cross focusing on early warning systems for floods. Additionally, policy-making level officials have regularly participated in consultation workshops for the National Disaster Management Committee (NDMC) to discuss national disaster management plans, organized by the Department of Social Welfare, MLSW, as the Deputy Director General of the Department of Activity is a member of the NDMC and the secretariat of this committee on behalf of the Lao Youth Union.

While staff under this department are well familiar with DRM, they are not well-versed in climate change adaptation compared to DRM due to fewer opportunities to attend relevant training activities on climate change. Moreover, the department has a lower number of staff compared to other departments, with no one having a relevant background in climate change. In the past, staff only received several trainings on climate change provided by other departments such as DCC. Regarding gender, female staff have not been encouraged to participate in particular capacity development activities. However, the department has one gender-related activity being implemented in collaboration with the Gender Development Association (GDA), which focuses on providing training on gender equality and social inclusion for the youth.

The staff have expressed interest in receiving more training on various climate change topics, including climate change impacts, causes, adaptation measures, and more. Additionally, they have proposed the implementation of a Training of Trainers (TOT) program as a key mandate of the department is to raise awareness in the public. Building trainers within the department would help enhance the effectiveness of awareness-raising activities. Furthermore, staff also require training on developing policies, strategies, and plans, especially in the context of climate change. Developing guidelines or manuals, such as a guideline on climate change planning for the youth development sector, is also needed for most staff to better understand and apply climate change knowledge. Lastly, providing training on proposal writing is crucial not only for the staff in the Department of Activity but also for other departments within the Lao Youth Union to develop their capacity to access relevant funds.

Department of Ethnicity, Lao Front for National Development

The staff of the Department of Ethnicity (DOE) have attended various training workshops and capacity-building programs on climate change, facilitated by different projects and government entities, with a particular focus on climate change mitigation. While the staff have some engagement with projects and activities related to climate change mitigation, such as REDD+ and carbon credit initiatives, their understanding of climate change adaptation ranges from basic to intermediate. Most staff members are reported to be relatively unfamiliar with the context of climate change adaptation and have not participated in activities or training focused on climate risk and vulnerability assessment (CRVA) or disaster risk reduction.

The DOE does have two staff members with an educational background in environmental studies who are responsible for managing environment and climate change-related projects. Additionally, several capacity development programs are underway, aimed at enhancing the ability to manage and protect the environment and natural resources. One such program, supported by MONRE, covers topics such as land management, pursuing a green and clean city initiative, and accessing funding. Initiated in 2018, this program is aimed to continue until 2025.

However, there is a noted lack of capacity development programs and training specifically tailored to climate change adaptation, such as CRVA and climate change mainstreaming. The DOE also recognizes a deficiency in best practices and concrete case studies on climate change adaptation strategies, including measures for flood and drought prevention, which would be beneficial for staff whose responsibilities include raising awareness at the local and community levels.

To overcome these challenges, staff members have emphasized the need for comprehensive training in climate change adaptation. This includes CRVA, technical approaches to adaptation strategies, adaptation planning and mainstreaming, and project proposal development. They recommend that such training should be provided regularly and frequently to ensure staff are well-versed in best practices and real case studies relevant to the local context of Lao PDR. Additionally, it is important to maintain continuity in staff participation across these training sessions.

Department of Development in Women, Lao Women Union

The Department of Development in Women (DDW) staff have participated in various climate change training workshops hosted by the national government and supported by different projects. During interviews, an official stated that despite the importance of climate change, the local population, particularly women, often lacks understanding of its significance. Within the DDW, those who are directly involved in climate change-related projects and activities, such as the staff in the Division of Women and Family Promotion, report a better understanding on climate change adaptation. However, staff members in other divisions do not share this level of knowledge or understanding, as they have had fewer opportunities to engage in climate change-related activities and training workshops.

The DDW has acknowledged a shortage of technical staff with expertise in climate change. Although they have participated in training workshops on the subject, these sessions were not comprehensive, and some information was not clearly conveyed. One official noted that while staff have attended dissemination and training workshops organized by other departments, there is a lack of best practices and a limited understanding of climate change mainstreaming, as well as how to effectively communicate climate change information to local communities.

Staff members have emphasized the importance of the DDW's role in working with local communities for awareness-raising and campaign promotion activities. Consequently, there is a need to provide appropriate tools and equipment for these activities and to enhance staff capacity in climate change awareness, such as developing brochures and other media materials for dissemination, and training staff to work with local communities on issues like flood prevention.

The DDW staff suggest organizing intensive climate change training and workshops on climate change adaptation for a broader range of DDW staff. In particular, there is a strong interest in receiving more training

on topics including climate change mainstreaming and sector-specific planning. Apart from this, the DDW is seeking a more active role in the implementation of climate change projects. Staff members note that while there are various climate change-related activities within the department, the DDW is not currently leading these projects at an operational level, and there is a call for the department to become a key implementer in projects related to climate change.

Summary

Overall, the quantitative analysis of individual-level capacity illustrated that half of the surveyed offices have not implemented a capacity development program or plan in place for their staff in the area of climate change. Furthermore, many of them were not adequately provided with in-depth training opportunities on climate change topics, such as climate change planning and climate risk and vulnerability assessments (CRVA). Most offices highlighted that the most required training mode to improve the capacity of their staff is technical training. They expressed the need for more training on advanced climate change, climate change adaptation and disaster risk management (DRM), climate change M&E/MRV, climate change adaptation, stakeholder engagement and inclusion, and climate change policies and plans.

The qualitative assessment showed that staff in most sectors and departments have participated in relevant climate change training activities. While many of them have their own capacity development programs and plans developed for their offices, some have not implemented a capacity development program, relevant guidelines, or manuals for climate change, such as MAF (DPC, DOA), MPWT (DOR), MONRE (DOE, EPF) and LYU. Most offices in the agriculture and forestry sector suggested the need for more in-depth training provisions, particularly long-term or intensive courses covering various climate change topics, such as CRVA, disaster response, and climate modeling development for agriculture. Similarly, most offices in the urban development sector required technical capacity development on climate change for their staff, including regular and frequent training provisions on climate change basic knowledge, adaptation approaches and planning, as well as providing best practices on climate change adaptation applicable for Lao PDR. The water sector and other key departments referred to the need for intensive and in-depth training covering various climate change adaptation areas, such as CRVA focusing on water sector, enhancing staff to further study at higher levels both in-country and overseas, as well as promoting research and study capacity of staff on climate change adaptation within key sectors and enhancing awareness raising capacity for staff of the civil society organizations.

3. RECOMMENDATIONS AND CONCLUSION

3.1 Recommendations

Table 7: List of recommendations

Enabling Environment	
1. Agriculture and Forestry	• Mainstream climate change into the policies and plans of the departments within this sector; • Improve coordination of departments within MAF and with other line ministries on climate change by developing the relevant coordination mechanism at both policy and technical levels; • Allocate sufficient budget for enhancing the climate change mainstreaming into the relevant policies and plans within agriculture and forestry sector; • Ensure providing sufficient budget for the relevant activities including climate related policy development; • Provide more fund for capacity development activities for staff who are responsible for policy development as well as including Training of Trainer (ToT) provisions for the relevant staff;

	• Enhance cooperation with international partners and organizations for the research and studies in order to uptake the applicable technology and best practices applying in Lao PDR – such as climate resilience varieties and climate smart agriculture techniques; • Develop capacity of staff, including training provisions on climate change adaptation for staff at both policy making and technical levels.
2. Urban Development	• Strengthen staff capacity who have been appointed as the focal contact for climate change related committees, especially training activities on advanced climate change adaptation; • Make clear roles and mandates on climate change among divisions and offices, includes clear roles and responsibilities on project implementation regarding climate change; • Ensure the continuation of the training provisions. This includes technical training on climate change and developing project concept note and proposal to access the relevant funds on climate change; • Develop the climate change related plans for departments – such as national adaptation plan for public works and transport sector; • Enhance the climate change mainstreaming into the relevant policies and plans of the sector; • Ensure sufficient budget provisions as well as capacity development in accessing international and national funding sources for the departments; • Enhance mandates development with regard to the climate change in divisions and offices within this sector.
3. Water Resources	• Develop plans related to climate change adaptation which include the development of the Emergency and Response Plan on Droughts and Floods in both short- and long-term for water sector in aligning with the development plans of relevant ministries; • Expand capacity of the early warning system, especially flood and hydrological related disaster alerts; • Improve capacity in reporting the climate and weather-related events in aspects of the quality and accuracy of the reporting; • Develop capacity of the staff for water sector, especially for the staff who work directly at the water gate and weather stations in the main rivers of the country, • Ensure continuing in training provisions and participation of staff on various topics – such as climate related disaster response and prevention, the climate resilience development for the hydrological and irrigation work, etc.
4. Other Key Sectors	• Ensure funding sufficiency provisions for the policy and plan development including mainstreaming climate change into the sectoral plans; • Improve the approval process of the requested budget from the relevant departments; • Develop staff capacity on climate change, especially training delivery on climate change adaptation and climate finance; • Develop guidelines and manuals on climate change mainstreaming into the sectoral plans, as well as providing training on climate change mainstreaming for the relevant staff in different sectors; • Disseminate the developed policies and plans on climate change such as climate change strategy and NDC to the various government entities;

	• Develop capacity of staff on advanced climate change, especially the training provisions on climate change adaptation planning and climate risk and vulnerability assessment (CRVA) for the development projects; • Develop a guideline on conducting CRVA for the relevant sectors. • Promote accessing the national and international funds as well as building capacity of staff in accessing those funds; • Develop guidelines and manuals on project concept note and proposal development and steps in accessing funds such as EPF.
Institutional Level	
1. Agriculture and Forestry	• Ensure sufficient tool and equipment provisions in monitoring climate change related work in order to provide timely alerts for farmers in case of emergency events; • Provide training for the relevant staff on climate change adaptation and project management for enhancing the effective project implementation; • Develop insurance mechanism for the agriculture sector. This can ensure the reparation cost for the farmers after disaster events; • Develop guidelines and manuals on climate change mainstreaming into the agriculture sector within the relevant offices; • Build capacity of the staff to have in-depth knowledge and understanding on climate change adaptation including research and studies on adaptation measures; • Ensure sufficient budget for offices in the climate change related activity implementation, especially research work on climate resilience for agriculture, forestry and rural development.; • Develop coordination mechanism for climate related projects to ensure regular sharing progress updates on project implementation as well as seeking synergies among project partners; • Ensuring sufficient budget in the project and activity implementation; • Build internal staff to become experts or specialists – such as climate change researchers for the agriculture sector. • Ensure women (including farmers) having access to training, receiving early warnings and knowing what to do in case of a flood emergency for agriculture sector.
2. Urban Development	• Ensure sufficient financial capacity in the project and activity implementation within the agriculture and forestry sector; • Develop capacity of the relevant staff on climate change as well as training provisions on project management and developing database system as well as improving data sharing platform; • Improve coordination mechanism among sectors, government entities and development partners involving in climate change initiatives; • Enhance ownership of offices in the relevant project and activity implementation such as capacity building programs and activities; • Encourage female staff within the relevant offices in participating in the capacity development and consultation activities on climate change adaptation.

3. Water Resources	• Increase financial capacity for water sector offices, such as funding in accessing wetland across the country; • Raise awareness among offices of water sector by developing dissemination tools, manuals, etc. on integrated water resources management (IWRM) and climate resilience; • Develop capacity of the relevant staff on various topics covering climate resilience and meteorology and hydrology. These include tool utilizing in data collection and managing the database system as well as monitoring tool utilizing for meteorological and hydrological work; • Ensure sufficient provisions on tool and equipment on monitoring the water levels and irrigation schemes at all levels; • Ensure sufficient budget for implementing programs, projects and activities within relevant departments of water sector; • Provide women's and other vulnerable groups such as Lao Women Union and Lao Youth Union with training, resources and the authority to engage in water resources management and climate change activities.
4. Other Key Sectors	• Develop capacity of staff in project management and finance as well as knowledge on climate finance mechanism • Develop database or information management system on climate change adaptation within the offices responsible for climate change; • Provide sufficient and regular training events on the particular topics on climate change adaptation; • Improve staff turnover issues by ensuring the continuation of the training participation of staff within offices; • Improve internal processes and procedures for project approval within departments which causes a delay in project and activity implementation; • Encourage other sectors involving in the climate change activities, especially the private sectors and external civil society organizations; • Encourage female staff members in the project activities related to climate change as well as increase female staff ratio in the particular roles and positions on climate change within the relevant offices. • Increase female representation in climate change related committees from the relevant sectors, as also support women's contributions to climate change activities.
Individual Level	
1. Agriculture and Forestry	• Provide more in-depth training, particularly long-term or intensive courses, covering various topics like M&E on climate change adaptation, climate modelling, database management, climate change and disaster response – such as early warning systems for climate related disasters and adaptation measure identifying and prioritizing for different phases – before and after disaster events; • Develop capacity development plans and programs as well as technical training manuals on climate change risk management and planning for agriculture and forestry sector; • Improve coordination mechanism with clear roles for staff, providing sufficient training opportunities, covering best practice and lessons learned sharing on climate change adaptation planning;

	• Ensure sufficient budget for capacity development program in order to ensure the sustainable capacity development of staff; • Provide practical and on-the-job training for staff, including training provisions on climate change tools and approaches utilizing – such as CRVA, M&E, as well as early warning system tools and equipment for livestock and fisheries sector; • Appoint particular staff for climate change projects and capacity development activities as well as participating in the training workshops. This can ensure the continuation of the training participation of staff; • Provide experience exchange activities for high-level officials such as study visits in the country or overseas; • Develop a guideline on identifying climate change adaptation measures and M&E for the agriculture and forestry sector.
2. Urban Development	• Provide training topics covering database development and management on climate change, data analysis as well as ensure continuation of training provisions and assessing knowledge and information of staff; • Build technical capacity of staff by providing on-the-job training on various topics, including training topic on using particular programs and software on CRVA, technical approach on climate change adaptation determines, and climate change adaptation planning; • Ensure capacity building activities are provided regularly and frequently to the relevant staff; • Providing sufficient budget on capacity development activities including toolkit and training manual development for staff; • Improve climate change information sharing and dissemination channels for staff within offices; • Disseminate best practice on climate change adaptation for urban development sector for staff as a case study.
3. Water Resources	• Ensure providing intensive and in-depth training, covering various climate change adaptation areas such as CRVA focusing on water sector and community level; • Ensure sufficient funding provisions for training activities at different levels, especially when it comes to water resources sector at community level; • Promote staff to further study in higher decrees such as Master' Decree or Doctoral Decree as well as developing capacity of the relevant staff in accessing the scholarship from both internal and external funding providers; • Develop the capacity of staff in the short and long-term for collecting and reporting hydrological data in both quantity and quality aspects; • Ensure continuation of training provisions in order to ensure the uptake of climate change knowledge; • Seek financial support from development partners and the government for capacity-building and awareness-raising programs and activities for water sector; • Provide on-the-job training on utilizing software, tools and adequate equipment for the water sector.
4. Other Key Sectors	• Provide more capacity building training on climate change adaptation, covering topics on climate change basic knowledge, Ecosystem-based Adaptation (EbA) and Nature-based Adaptation (NbA) approach and best

	practices of this approach from other countries which have similar country contexts to Lao PDR; • Ensure regularly participation of staff as well as continuation of training provisions; • Improve language skill and project management capacity of staff, including financial management and planning of the project, report and email writing for those who work directly with projects and development partners; • Provide more opportunities for staff on climate finance training as well as capacity on accessing climate funds; • Promote staff in further study in higher decree on climate change adaptation for those who work directly for climate change; • Provide in-depth and advanced training opportunities for staff, including training topics on CRVA, climate modelling, etc.
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Source: Author

3.2 Conclusion

In general, the capacity of most sectoral offices/departments in the **enabling environment** is found to be significantly high. Many offices have established various legal and policy frameworks, such as the Law on Forestry, Law on Water and Water Resources, Law on Disaster Management, Law on Waterway, Law on Irrigation, Law on Environment Protection, Decree on Climate Change, National Strategies on Forestry, Agriculture, Climate Change, Water and Water Resources, River Basin Management Plans, and Policy on Sustainable Hydropower Development, among others. Some offices have successfully integrated climate change into their policy framework, including DCC, DOA, DOF, DHUP, DWR, and DMH. However, other offices still face financial resource constraints for developing and implementing climate change-related policies and plans, and others lack technical staff and adequate technical knowledge among existing staff, posing challenges for mainstreaming climate change adaptation into sectoral plans. Additionally, most offices have not established financial mechanisms. Therefore, funding for capacity development activities on climate change is still significantly required for sectoral offices. Nevertheless, capacity development, including training activities on various topics on climate change adaptation and planning for the relevant staff, is needed.

When it comes to **institutional-level capacity**, most sectoral offices, such as DPC, DOA, DOF, NAFRI, DHUP, PWTI, DCC, DWR, and DMH, have institutional mandates and roles concerning climate change adaptation and DRM for their departments. Some specific staff have been assigned for climate change-related work in certain departments. National offices have clear roles and mandates for their sector work and have developed cross-sectoral coordination mechanisms, such as the National Disaster Management Committee, National Environment Committee, Sectoral Working Group on Agriculture, Forestry, and Rural Development, and Technical Working Groups on Climate Change, among others. Many offices, such as DWR, DMH, NAFRI, and EPF, are making progress in developing database systems and platforms (websites) for sharing and consolidating information within their departments. However, insufficiency in financial capacity, as well as a lack of human capacity (both technical knowledge and a better understanding of climate change), pose challenges for institutional arrangements (coordination and M&E) in most departments. Thus, developing the capacity of relevant staff with in-depth knowledge and understanding of climate change, improving data management and sharing systems, ensuring tools and equipment provisions for monitoring climate change and DRM work, and providing sufficient funding for activity implementation are the most needed improvements for the sectoral offices.

Regarding **individual-level capacity**, staff in most sectors have participated in relevant climate change training activities. While many of them have their own capacity building programs and plans supported by projects, some have not established capacity development programs, relevant guidelines, or manuals for climate change planning and mainstreaming, such as DPC, DOA (MAF), DOR, DOE, DEPP, EPF, and DOA (LYU). Insufficient financial resources for capacity development remain a challenge, as most financial support comes from projects

with limited durations. Challenges such as lack of regular capacity development trainings and continuation of staff participation in trainings, staff turnover, scarcity of training opportunities, limited staff with in-depth knowledge and expertise in climate change adaptation and planning, as well as equipment deficiencies for staff, persist.

Most offices in agriculture and forestry have expressed the need for more in-depth training provisions, particularly long-term or intensive courses covering various climate change topics such as CRVA, disaster response, and climate modeling development for agriculture. Similarly, most offices in the urban development sector require technical capacity development for their staff, including regular and frequent training provisions on climate change basic knowledge, adaptation approaches, and adaptation planning, as well as providing best practices on climate change adaptation applicable for Lao PDR. The water sector and other key departments have indicated the need for intensive and in-depth training covering various climate change adaptation areas, such as CRVA focusing on the community level and water sector, enhancing staff to further study at higher levels both in-country and overseas, as well as promoting research and study capacity of staff on climate change adaptation within key sectors.

In conclusion, this assessment underscores the importance of evaluating the current capacity of stakeholders involved in climate change adaptation. Several factors and conditions contribute to the gaps and challenges in the capacity for developing and implementing climate change adaptation-related policies and plans in Lao PDR, as well as integrating them into the sectoral plans. To enhance the enabling environment, institutional-level and individual-level capacity for the relevant sectors, essential actions on capacity development need to be taken, as indicated in the recommendation section. This includes addressing the gaps and challenges in the capacity for developing and implementing climate change adaptation-related policies and plans and integrating them into the sectoral plans. Furthermore, improving the institutional and individual capacity for the relevant sectors is essential to effectively address the impacts of climate change.

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Appendix 1: List of Interviewees and Data Collection Workshop Participants

No	Name and Surname	Gender	Position	Organization
1	Teuanchit Alounlasy	Female	Deputy Director General	Department of Climate Change, MONRE
2	Souphaxay Komany	Male	Director of Division	Department of Climate Change, MONRE
3	Sakounsit Saengkhamyong	Male	Deputy Director of Division	Department of Climate Change, MONRE
4	Vannavong Manivong	Male	Senior Technical Official	Department of Climate Change, MONRE
5	Bouathong Theothavong	Male	Senior Technical Official	Department of Climate Change, MONRE
6	Khampheth Soneniti	Male	Senior Technical Official	Department of Climate Change, MONRE
7	Phonesouk Phommathong	Female	Senior Technical Official	Department of Climate Change, MONRE
8	Sounita Phichit	Female	Senior Technical Official	Department of Climate Change, MONRE
9	Phimmaly Thammavong	Female	Climate Associate	Global Green Growth Institute (GGGI)
10	Amnouy Hanethongxay	Male	Technical Official	Department of Planning and Finance, MONRE
11	Saengphasouk Xayyavong	Female	Deputy Director of Division	Department of Water Resources, MONRE
12	Saengchanh Sinbandith	Female	Technical Official	Department of Water Resources, MONRE
13	Saengchanh Silattana	Female	Director of Division	Department of Meteorology and Hydrology, MONRE
14	Jeeyong Vongsy	Male	Technical Official	Department of Environment, MONRE
15	Veunxay Saengkhamyong	Female	Technical Official	Environment Protection Fund, MONRE
16	Vansath Sisadeth	Male	Deputy Director of Division	Lao National Mekong Committee Secretariate, MONRE
17	Anoulak Volasak	Male	Deputy Director of Division	Department of Planning and Finance, MPWT
18	Saengxayyo Lathsavong	Male	Technical Official	Department of Road, MPWT
19	Mixaysak Soukhaseum	Male	Deputy Director of Division	Department of Waterway, MPWT
20	Adisak Sitthideth	Male	Deputy Director of Division	Public Works and Transport Institute, MPWT
21	Saneha Panyasavath	Male	Technical Official	Department of Housing and Urban Planning, MPWT
22	Chanphengxay	Female	Technical Official	Department of Planning and Cooperation, MAF
23	Khayphone	Female	Technical Official	Department of Planning and Cooperation, MAF
24	Vilayphone Thipphayodkeo	Female	Deputy Director of Division	National Agriculture and Forestry Research Institute, MAF
25	Vilachit Vodethphayboun	Male	Technical Official	National Agriculture and Forestry Research Institute, MAF

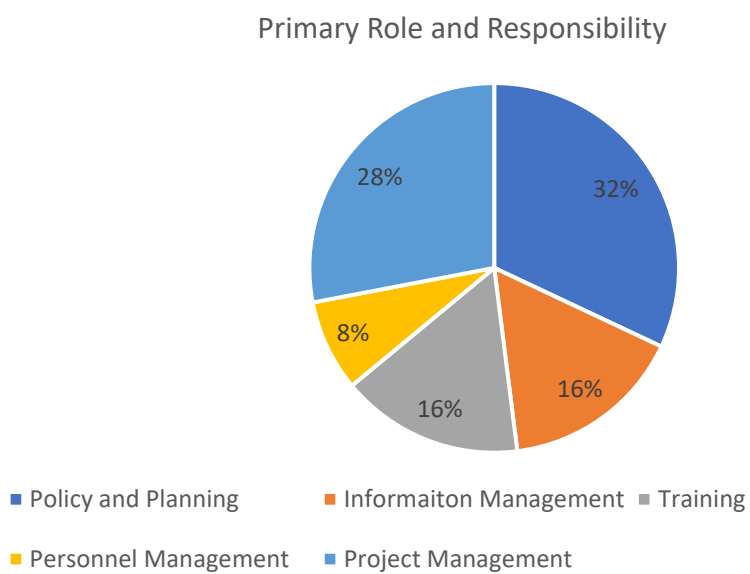
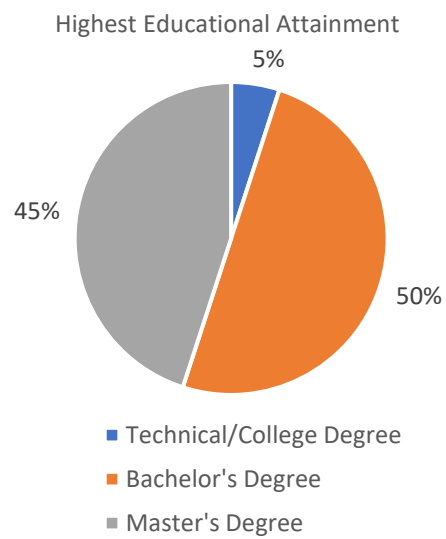
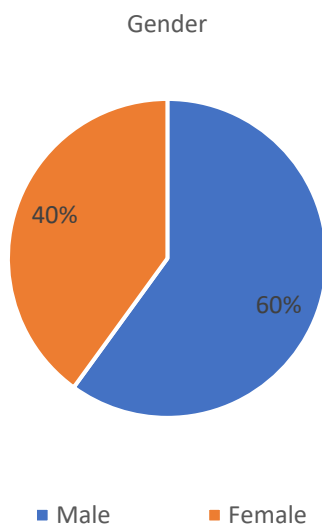
No	Name and Surname	Gender	Position	Organization
26	Litsana Thongsanguan	Male	Deputy Director of Division	Department of Agriculture, MAF
27	Lamngeun Phaengchanthalath	Female	Technical Official	Department of Agriculture, MAF
28	Soulivan Volavong	Male	Deputy Director of Division	Department of Irrigation, MAF
29	Bouakeo VongAmnath	Male	Deputy Director of Center	Department of Livestock and Fisheries, MAF
30	Thongkhoun	Male	Technical Official	Department of Livestock and Fisheries, MAF
31	Olathay Duangvilaysak	Female	Technical Official	Department of Energy Business, MEM
32	Amphaphone Kimanivong	Female	Technical Official	Department of Energy Business, MEM
33	Phansone Viphavanh	Male	Deputy Director General	Lao Youth Union
34	Phonesak Chanthavong	Male	Deputy Director of Division	Lao Youth Union
35	Soulivanh Keokhaomany	Male	Director of Division	Lao Youth Union
36	Khamnouan Sivilay	Male	Deputy Director of Division	Lao Youth Union
37	Xaysavath Souvanmixay	Male	Technical Official	Lao Youth Union
38	Manopaphath Phitsamay	Male	Director of Division	Department of Energy Planning and Policy, MEM
39	Chansavanh keovixay	Female	Deputy Director of Division	Department of Energy Planning and Policy, MEM
40	Keoudone Phamay	Male	Technical Official	Department of Energy Planning and Policy, MEM
41	Bounmee Keovongsa	Male	Technical Official	Department of Energy Planning and Policy, MEM
42	Xayyaseum Thongbay	Male	Technical Official	Department of Energy Planning and Policy, MEM
43	Phengdy Vilayvanh	Female	Deputy Director of Division	Department of Ethnicity, Lao Front for National Development
44	Oulaylath Sinthilath	Female	Deputy Director of Division	Department of Ethnicity, Lao Front for National Development
45	Songthao Phialuang	Male	Deputy Director of Division	Department of Ethnicity, Lao Front for National Development
46	Nimala	Female	Director of Division	Department of Development in Women, Lao Women Union
47	Phouvannasinh Phongsa	Male	Climate Change Consultant	GGGI
48	Sombane Vannavongsy	Male	Climate Change Consultant	-
49	Phouthasone Khouangvicith	Male	Consultant	-
50	Sitthikone Mounlamai	Male	Consultant	-

Appendix 2: List of Survey Respondents

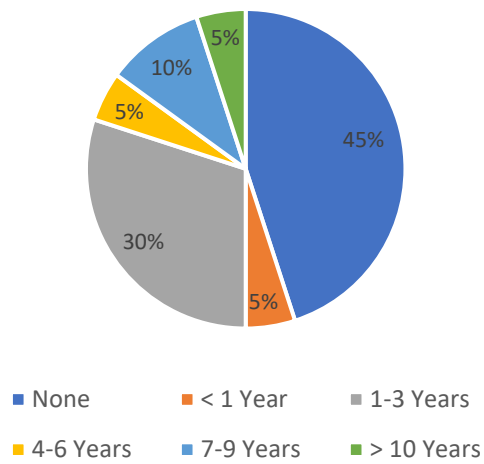
No.	Name and Surname	Gender	Position	Organization
1	Saengchanh Silattana	Female	Director of Division	Department of Meteorology and Hydrology, MONRE
2	Bouathong Theothavong	Male	Senior Technical Official	Department of Climate Change, MONRE
3	Jeeyong Vongsy	Male	Technical Official	Department of Environment, MONRE
4	Vilachit Vodethphayboun	Male	Technical Official	National Agriculture and Forestry Research Institute, MAF
5	Saengphasouk Xayyavong	Female	Deputy Director of Division	Department of Water Resources, MONRE
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19	Khayphone	Female	Technical Official	Department of Planning and Cooperation, MAF
20	Olathay Duangvilaysak	Female	Technical Official	Department of Energy Business, MEM

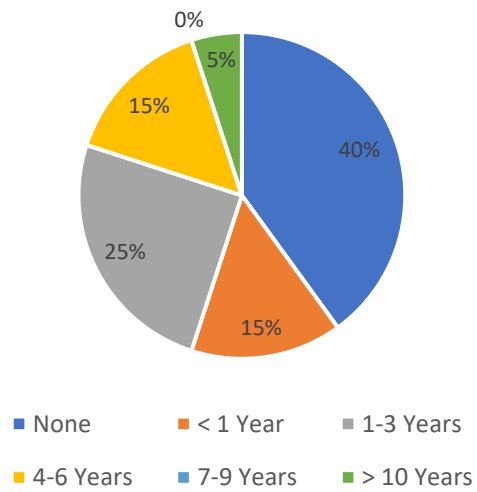
Appendix 3: Survey Questionnaire Data Analysis



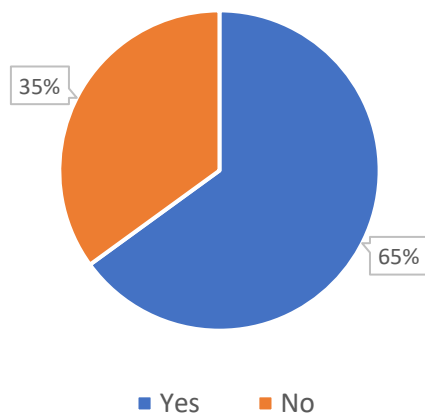
Climate Change Experience



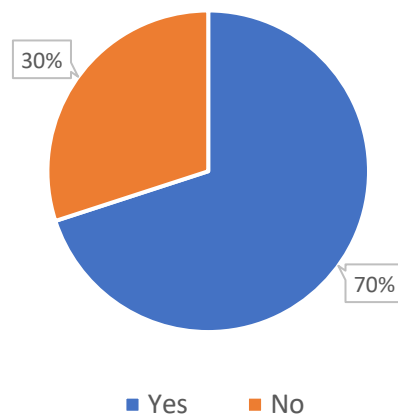
Climate Change Adaptation Planning Experience



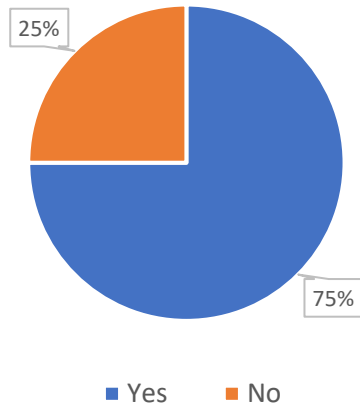
1. Are there any existing policies/strategies of your department/office related to climate change/adaptation?



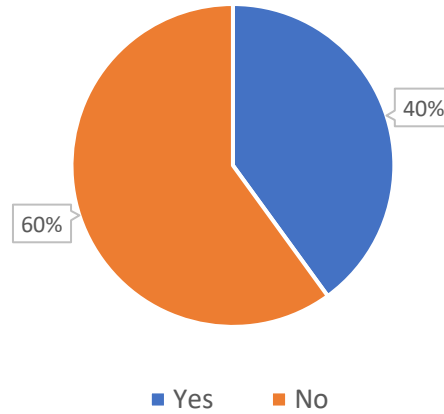
2. Are there legislation instruments including laws and decrees developed for your sector?



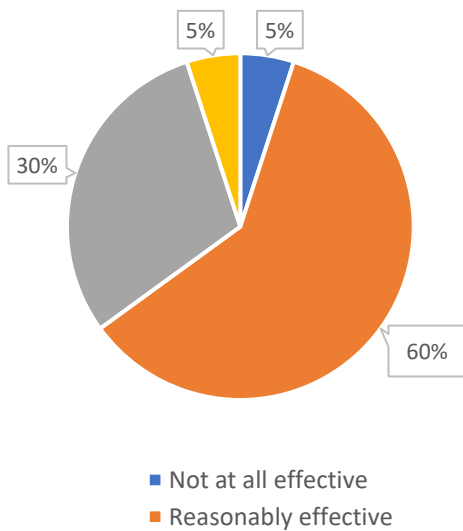
3. Has climate resilience/adaptation been mainstreamed into the main policies, plans or strategies of your sector?



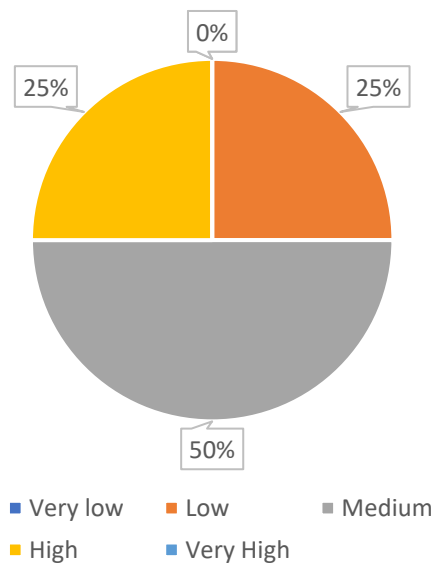
4. Are there clear policies/guidelines for mainstreaming climate change-related activities in your department/office?



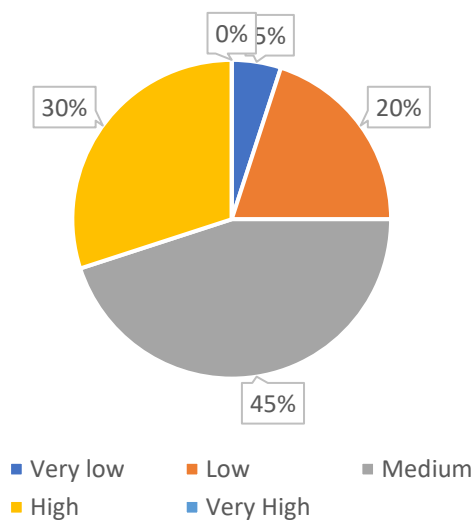
5. How would you evaluate the overall effectiveness of your department/office in implementing policies and strategies related to climate change?



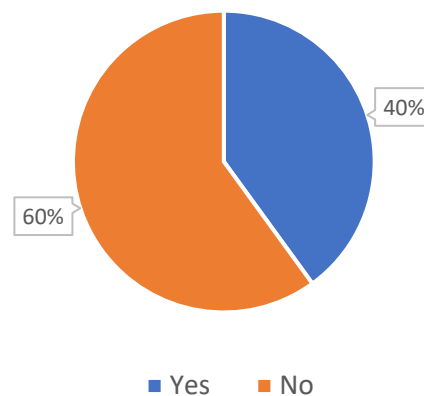
6. To what extent are the key officials and staff in your department/office knowledgeable and competent in planning and implementing climate change policies and plans?



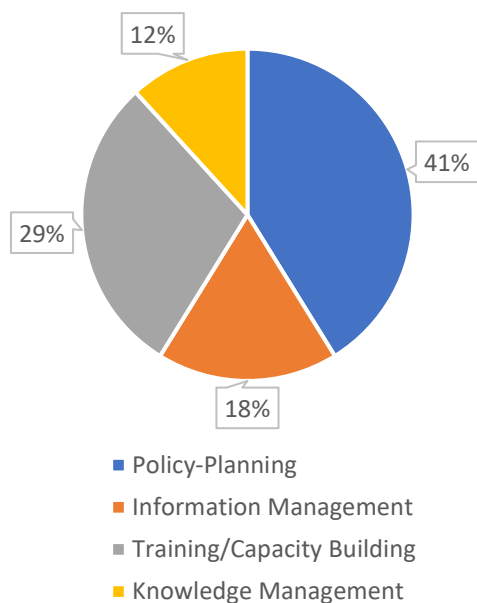
7. To what extent are policies, plans and strategies related to climate change clearly communicated/disseminated across the departments/offices to all personnel?



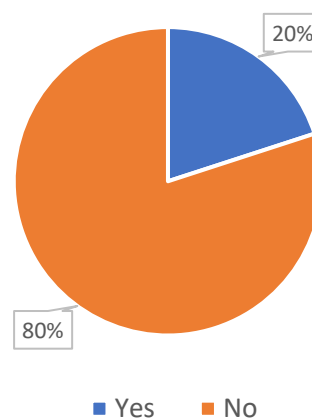
8. Is there a budget allocation for climate change related activities?



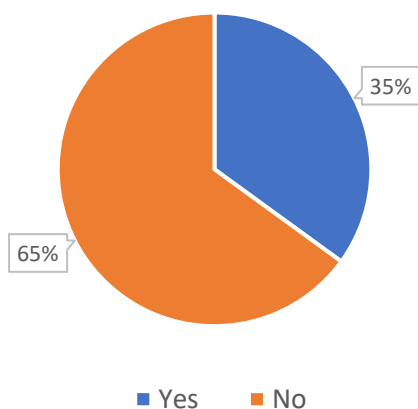
9. How are these budgets allocated? Check all that apply.



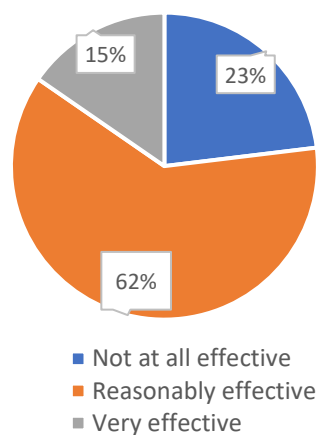
10. Is allocated budget sufficient to carry out planning and implementing activities related to climate change (adaptation/resilience building)?



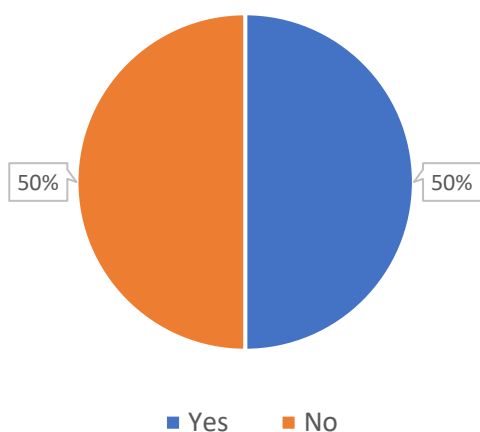
11. Is there a budget allocation for capacity building program on climate change planning/adaptation?



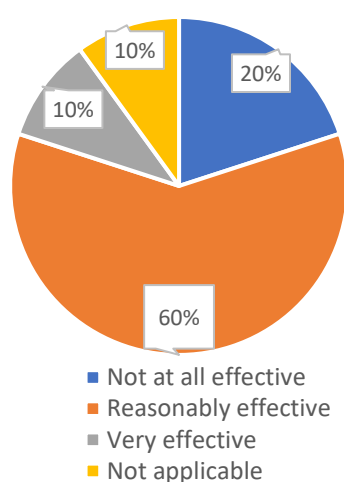
12. How would you evaluate the overall effectiveness of your department/office in managing budget allocated to the capacity building program related to climate change adaptation?



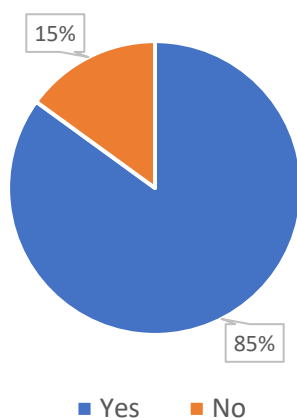
13. Are there climate change/adaptation related programs, projects or activities being implemented under your department/office?



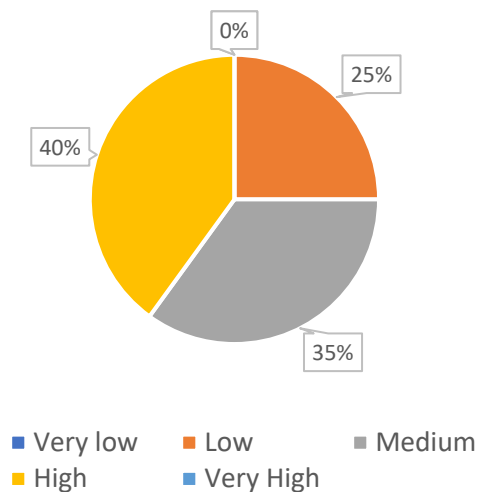
14. How would you evaluate the overall effectiveness of your department/office in managing projects related to climate change/adaptation?



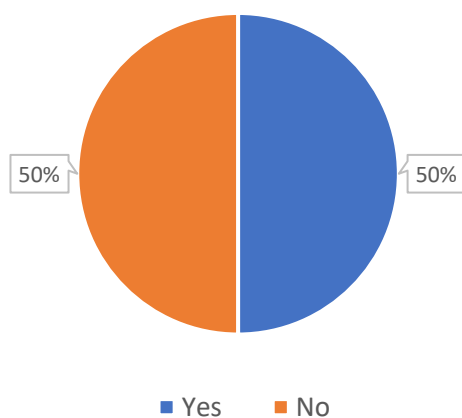
15. Do you think that the staff in your office is capable of effective implementation of projects and activities related to climate change?



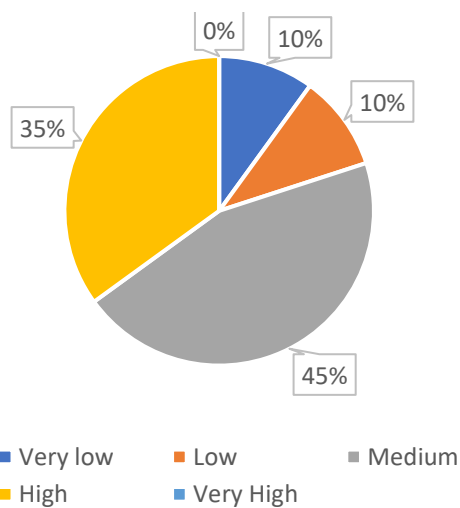
16. To what extent are the key officials and staff in your department/office competent in implementing projects and activities related climate change?



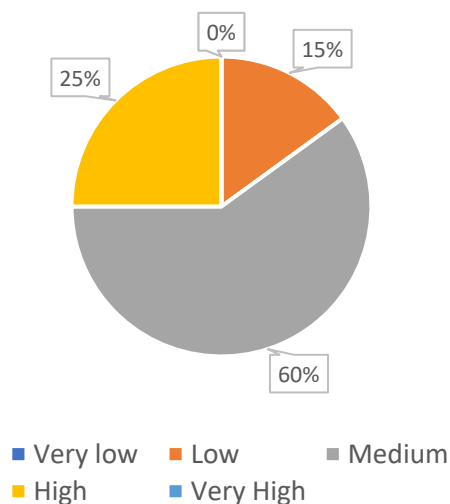
17. Is there a database/repository system for the data collection, consolidation and dissemination/sharing of the knowledge products from projects on climate change?



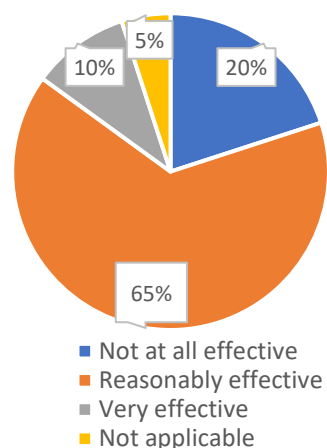
18. To what extent does your department have access to knowledge products on climate change (brochures, manuals, guides, etc.)?



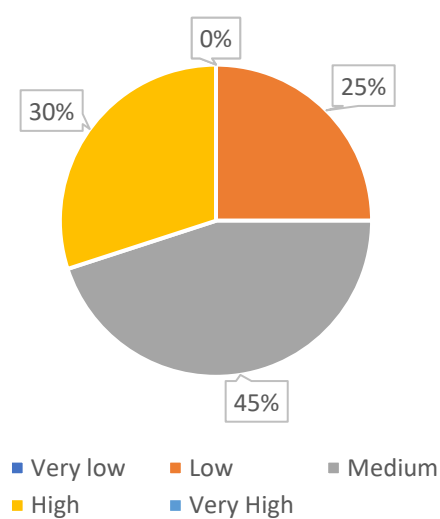
19. In your opinion, to what extent can your department/office access to and manage information or database on climate change to support decision-making?



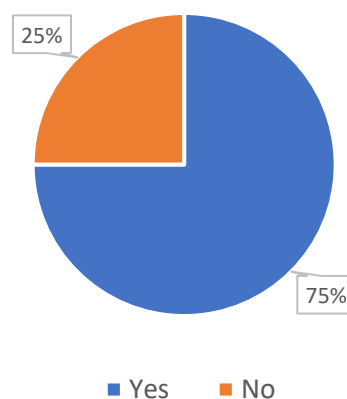
20. How would you evaluate the overall effectiveness of your department/office in managing knowledge and information related to climate?



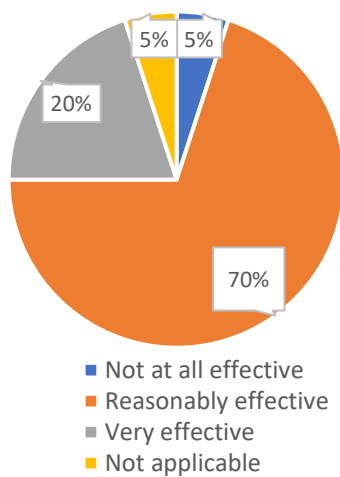
21. To what extent are the key officials and staff in your department/office knowledgeable and competent in managing knowledge and information, database and sharing related climate change?



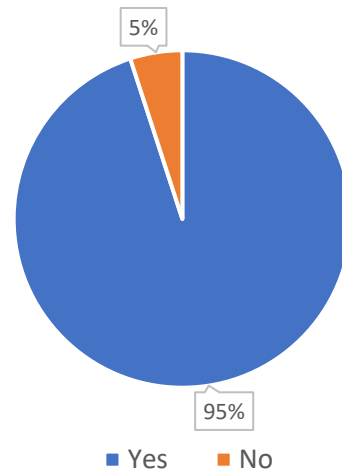
22. Are there institutional mechanisms in place for the involvement of multiple stakeholders (e.g., private sector, academia, CSOs and communities) for climate change related activities?



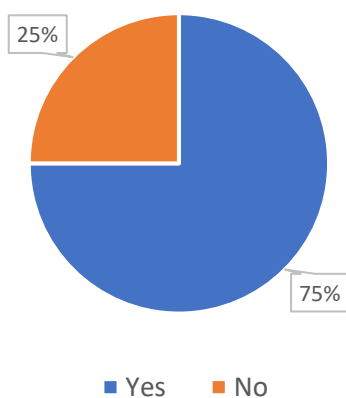
23. How would you evaluate the overall effectiveness of your department/office in coordination with other national/local government agencies related to climate change?



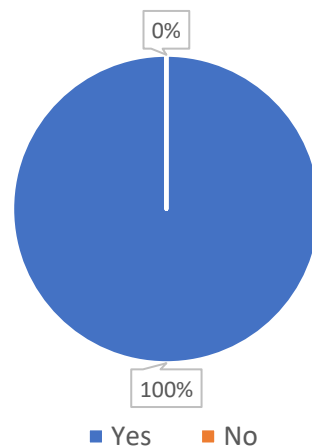
24. In your opinion, do you think staff in your department/office are knowledgeable or competent in coordination and partnering with other stakeholders related climate change?



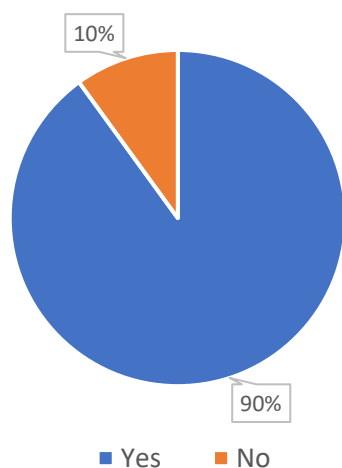
25. Are civil society organizations (such as Lao women union, Lao youth union, etc.) included in the consultation process or activities on capacity development programs/workshop related to climate change?



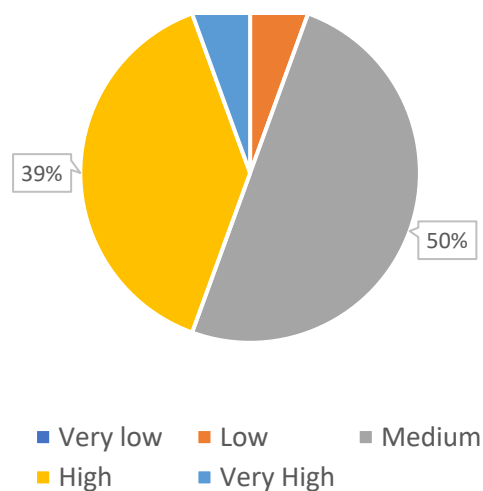
26. Are women staff in your department/office encouraged to participate in the consultation or capacity development program activities?



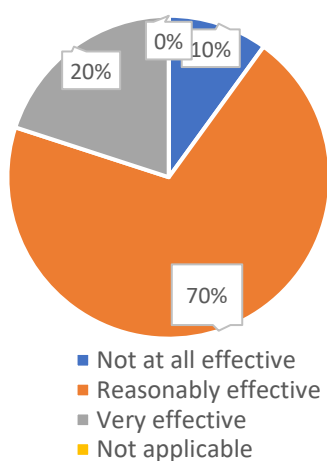
27. Is gender inclusiveness/responsiveness mainstreamed in your main sectoral policies or plans?



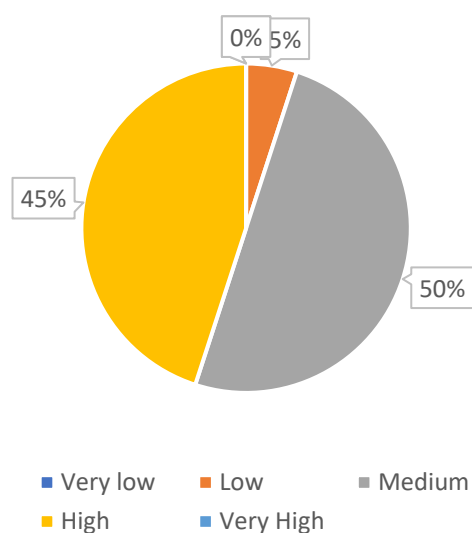
28. To what extent has gender been mainstreamed into your main policies, plans or strategies?



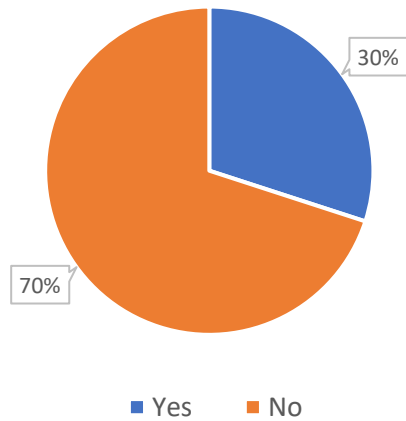
29. How would you evaluate the overall effectiveness of your department/office on promoting participation of women and vulnerable groups in climate change planning/activities?



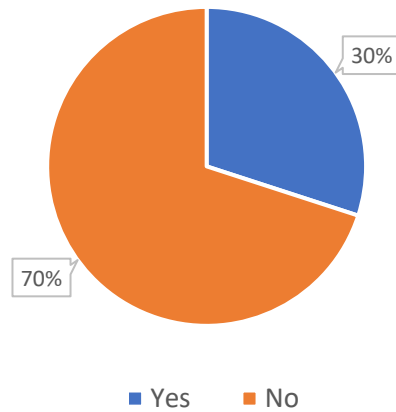
30. To what extent do you think the staff in your office are knowledgeable and competent on women/vulnerable groups participation promoting in the climate change planning activity/process?



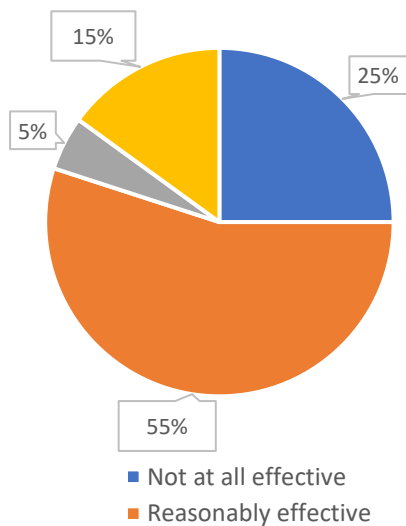
31. Is there an existing M&E system/mechanism in place for climate change activities in your office?



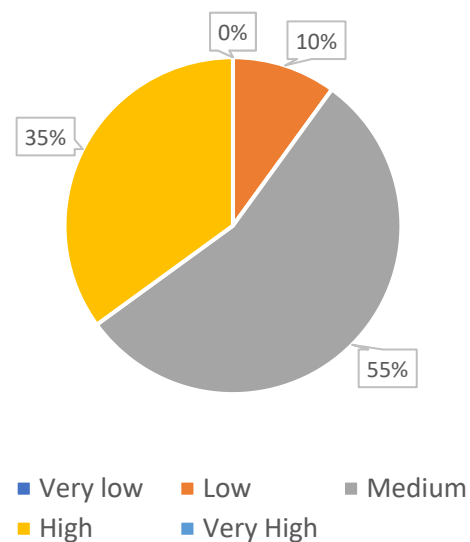
32. Is there guideline providing for M&E of climate change activities in your office?



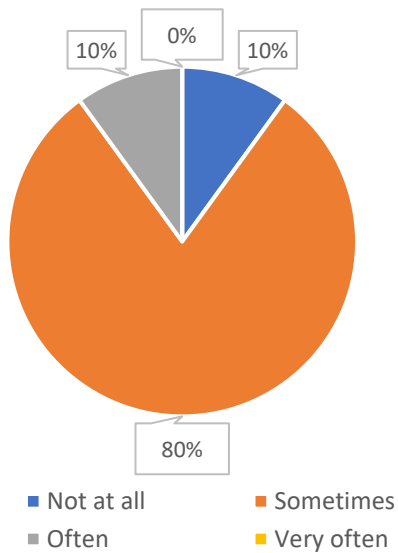
33. How would you evaluate the overall effectiveness of your office on performing M&E related to climate change planning?



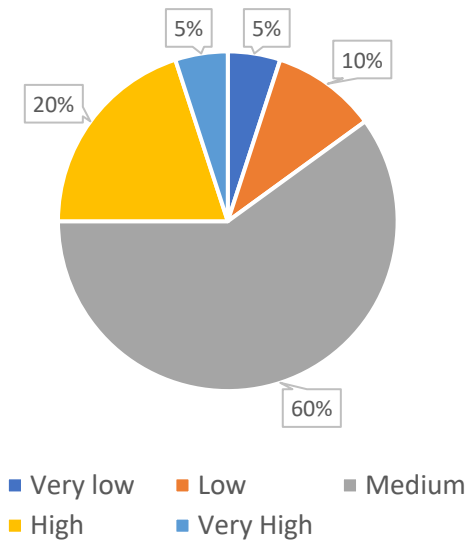
34. To what extent are the staff knowledgeable and competent in M&E of programs and projects, monitoring of financial resources allocated to activities?



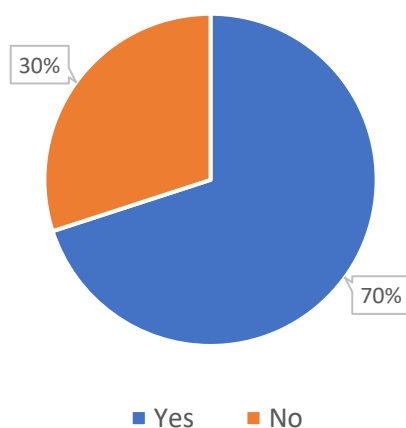
35. How often are your staff provided with adequate training opportunities on M&E related to climate change activities?



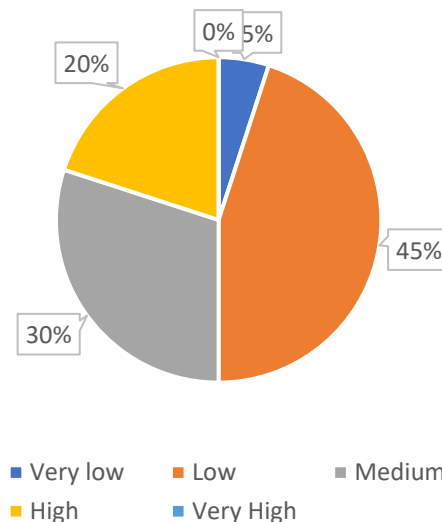
36. To what extent can your department manage and provide climate information on climate vulnerability, hazards and impacts to support decision-making on adaptation planning?



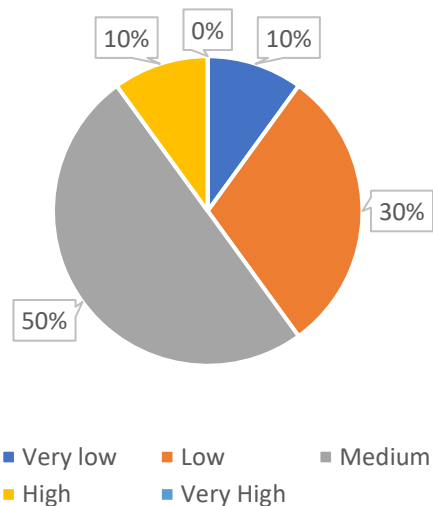
37. Does your department/office have the staff capacity and operational procedures to provide information on climate vulnerability, hazards and impacts to support decision-making on adaptation?



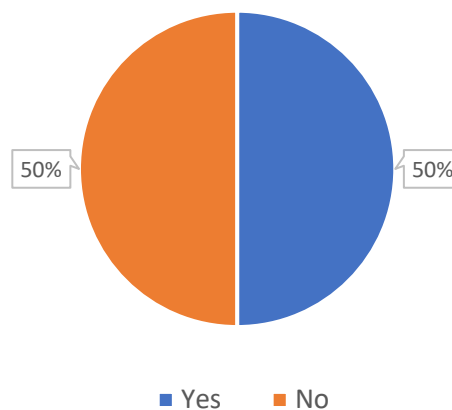
38. To what extent is the staff knowledgeable, adequately qualified and competent in analysis of climate scenarios, modelling, CRVA, provision of information on hazards and impacts to support decision-making?



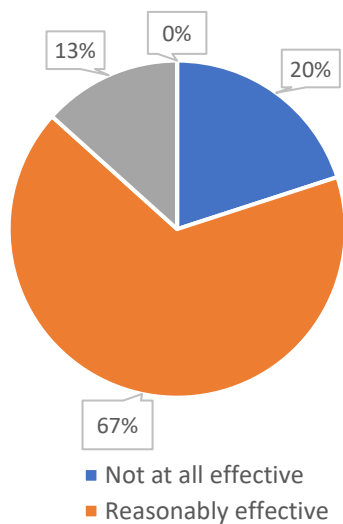
39. In your opinion, please you identify the following level of technical capacity and knowledge of your staff (such as GIS vulnerability assessment, etc.)?



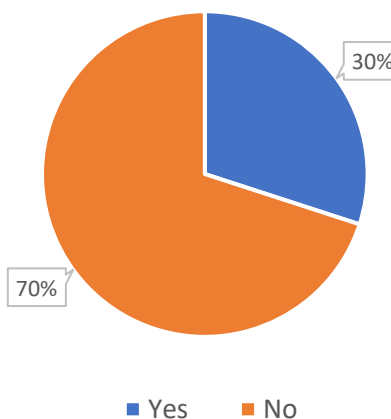
40. Do you think that your department/office has a capacity development program/plan in place for staff and key personnel climate change areas?



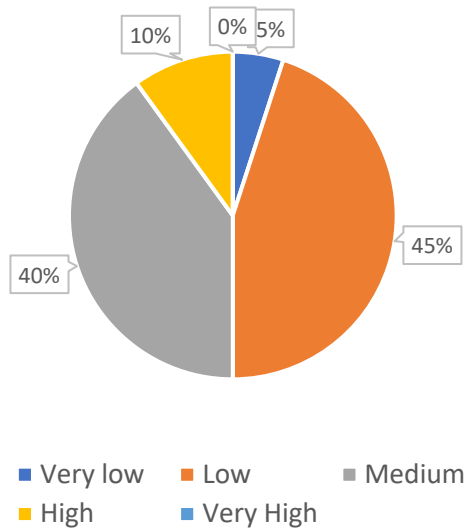
41. How would you evaluate the overall effectiveness of your department in implementing capacity development programs related to climate change adaptation?



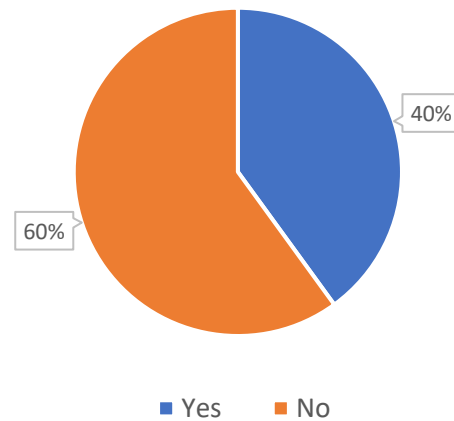
42. Does your department/office conduct need assessment/analysis to identify capacity gaps and required capacity of personnel?



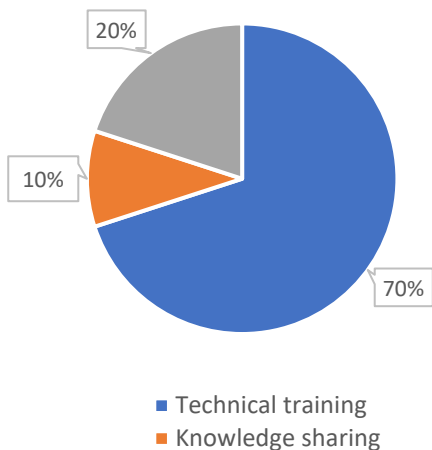
43. In your opinion, to what extent are the staff in your department/office competent on knowledge and tools on climate change (such as climate risk data collection tool, survey tool, vulnerability assessment tool)?



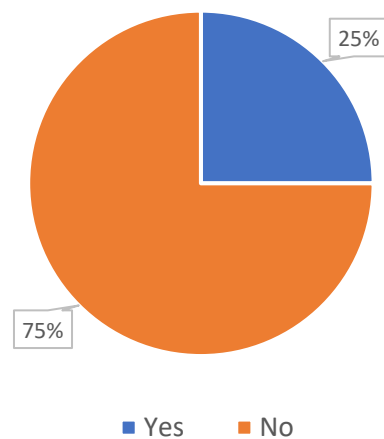
44. Do you think that the staff are provided with adequate training opportunities on climate change planning, such as climate risk and vulnerability assessment, etc.?



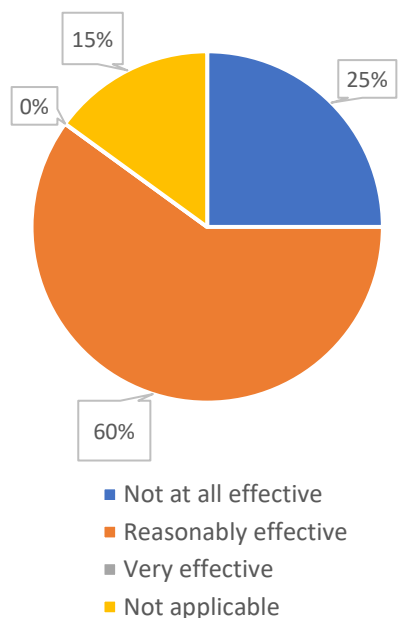
45. In your view, what actions are most needed to improve capability of your staff? Check all that apply.



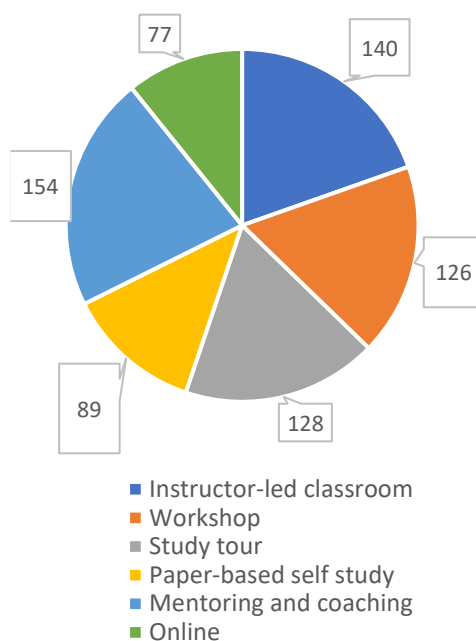
46. Is there an existing training manual/toolkit in place for climate change activities in your office?



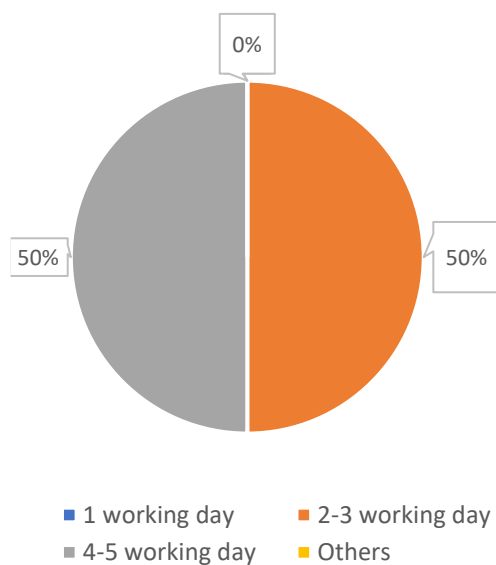
47. How would you evaluate the overall effectiveness of your department/office in delivering/providing training on climate change?



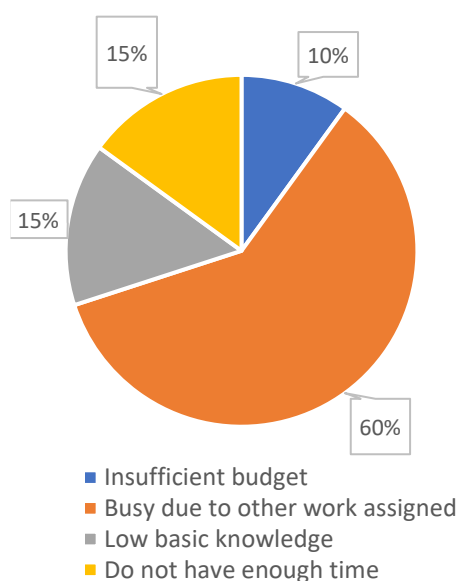
48. Please rank the following modes of training delivery according to your personal preference: (From 1-10, 10 being the most preferred and 1 being the least preferred) – In sum score



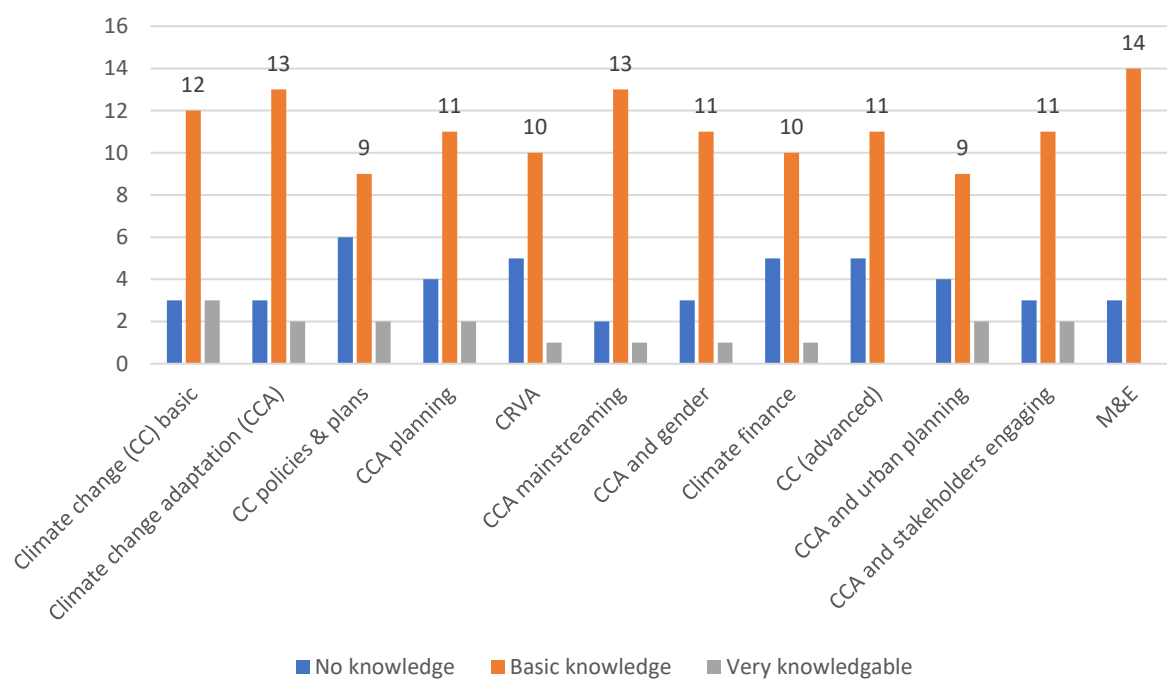
49. What would be the ideal training schedule for you to participate in?



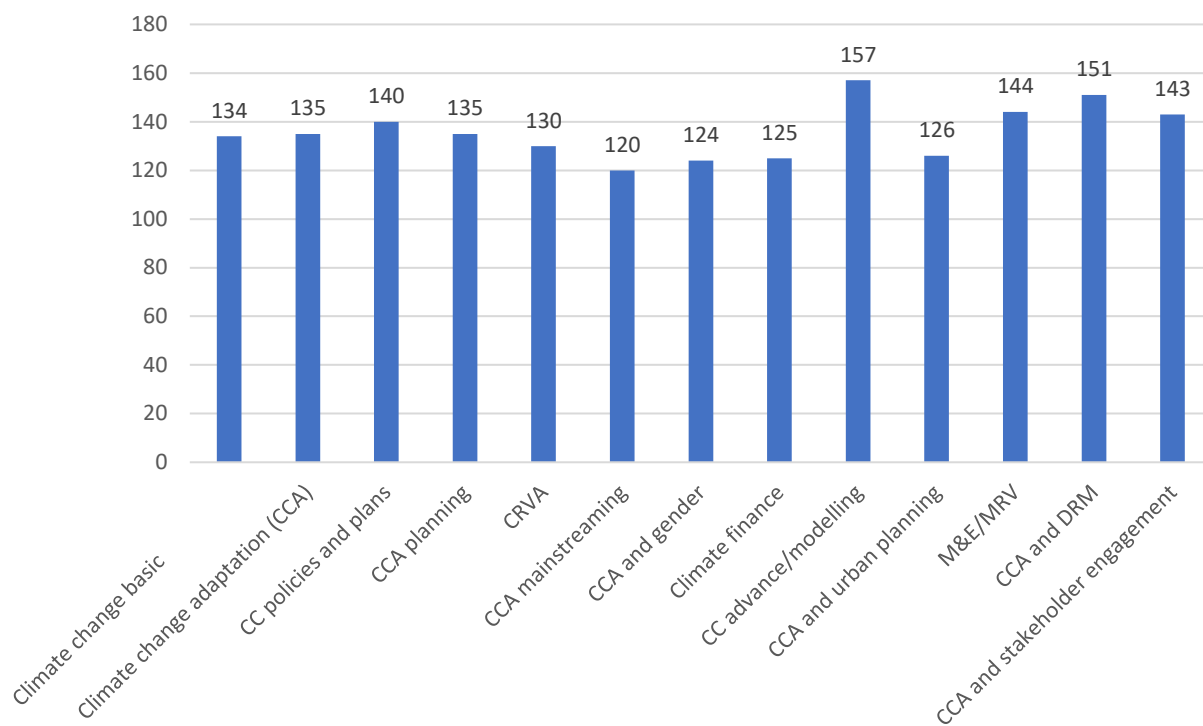
50. What challenges do you think would prevent you from attending/participating in a training activity?



51. Please indicate your level of knowledge of the following content/training areas by checking the appropriate boxes below (Note: Y-axis refers to the scores chosen or given by participants):



52. Please rank the following training areas/topics according to your personal preference



Appendix 4: A review of sectoral policies and plans, climate change consideration and indicators

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
Agriculture and Forestry	Agriculture Development Strategy to 2025 and Vision to 2030	The Strategy include four key programs namely food security; food exporting; forest management; and urban development and poverty reduction, which defines clear Vision, Objectives and Goals in developing the sector and agricultural production until 2025 and the vision to 2030, aiming to ensure food security, producing comparative and competitive potential agricultural commodities, developing clean, safe and sustainable agriculture and shift gradually to the modernization of a resilient and productive agriculture economy, linking with rural development contributing to the national economic basis. ⁷⁹	The Strategy significantly mentions challenges made by the climate change impacts – such as floods, draughts, outbreak of pest/plants disease, soil erosions and degradation and others) as these still threaten and have high risks on agriculture production in Lao PDR. Notably, the Strategy has several sections mentioned climate change adaptation and disaster risk management. Especially, the two overarching goals of the strategy are to improve food production and agricultural commodity production. While several interventions and measures for implementation are set out related to disaster risk management, including: i) Develop plan of action in DRM for the agriculture and forestry sector, integrate priority actions into the agriculture sectoral development plan at all levels; ii) Strengthen institutional capacity on climate resilience and DRM, including creating risk profile/ mapping, planning, and coordination mechanism; iii) Improve infrastructure for agriculture production that is resilient to climate related disasters particularly drought	The Strategy defines clear supporting programs, action plans and projects from 2020-2025 which includes totally 9 action plans and 62 projects – focusing on agriculture land development, infrastructure development, clean agriculture development food crops research action plans, and so on). Additionally, it indicated the implementation, monitoring and evaluation (M&E) mechanism. However, the Strategy does not establish indicators in each strategic programs, action plans and projects including climate change related indicators.

⁷⁹ GoL (2015). Agriculture Development Strategy to 2025 and Vision to 2030: MAF

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
	National Forestry Strategy to 2020	Since 2005, Lao PDR has been working on the National Forestry Strategy. The overall objective of the Strategy is to contribute to achieve the indicative targets of the national socio-economic plans, to provide goods and services to the economy and the society, to reduce dependence and to contribute to the implementation of the National Growth and Poverty Eradication Strategy (NGPES). This strategy categorizes forests into production, conservation, protection, regeneration, and degraded forests. It set goals for the forestry sector, such as stabilizing shifting cultivation by 2005, eradicating it by 2010, and improving forest cover and quality. Recognizing forestry as a key sector in addressing climate change in Lao PDR, the strategy	including irrigation system, water gates, weirs, water pump stations, and water management, and iv) Conduct research/ studies to identify areas or types of soil appropriate for growing seeds and plants that are resilient and adaptable to climate change. The Strategy mentions various challenges and issues faced by forestry sector covering the issues on forestry and land use, land use change and underlying causes, and so on. However, the Strategy does not mention the climate change impacts and threats on the forestry section. Particularly, it does not mention the climate change adaptation or Disaster Risk Reduction actions at all. As the forestry section directly relates to the climate change mitigation. Thus, this Strategy intends to directly foster the development of carbon sinks and maintain it thereafter, which is expected to mitigate the risk of floods, prevent land degradation through the conservation interventions. Notably, this Strategy does not refer to the direct mitigation action plan or programs such as the reduction measures in Greenhouse Gases (GHG) emissions through REDD+ programs.	The priority policy, programs and actions are defined in the Strategy, including specific programmes and actions of land and forest use, production forest, Non-Timber Forest Products (NTFPs), tree plantation development, harvest plan, wood processing industry, bio-diversity conservation, protection forest and watershed management. Whereas there are no clear indicators defined for the programs and actions as well as climate change adaptation related actions and indicators.

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
	Plan of Action for Disaster Risk Management (DRM) in the Agriculture and Forestry Sector (2022-2025)	aims to increase forest cover to 70% of the country's land area by 2025.⁸⁰ The Plan of Action for DRM in the Agriculture and Forestry Sector is a part of the Agriculture and Forestry Development Strategic Plan to 2025 and the Vision to 2030. The Plan of Action identifies measures and mechanisms for DRM in the agricultural subsector including agriculture, livestock, fisheries, irrigation, forestry, and other related activities. It also supports the priorities and goals of the Five-Year Agriculture, Forestry, and Rural Development Plan (2021-2025) emphasizing on DRM to help strengthen capacity in prevention, mitigation, and preparedness, and build back better in recovery.	The Plan inherently addresses climate change. Regarding adaptation, the Plan is directly followed the framework outlined in the National Strategy on the Disaster Risk Reduction (2021-2030) which was developed within the Sendai Framework for Disaster Risk Reduction (2015-2030) to make Lao PDR resilient to disasters and climate change with sustainable resource management and climate change adaptation initiatives. Notably, the Plan of Action focuses more on DRM interventions than climate change adaptation. As it is primarily designed in line with the Sendai Framework for DRR and divided into a framework of four priority areas with 12 focused areas and 54 activities. The priority areas include i) Understanding disaster risks related to agriculture and forestry; ii) Strengthening disaster risk governance to manage disaster risk in the agriculture and forestry sector; iii) Investing in disaster risk reduction to build resilience in all areas of agriculture sector; and iv) Strengthening the agriculture sector in preparedness for disaster effective	Despite the DRM interventions and activities are clearly identified in the Plan of Action, the key indicators and means of verification to measure the progress of DRM activities are not developed for the four priority areas. The Plan only mentions that specific indicators will be formulated separately in the M&E Plan that will be supported as part of the implementation of the Plan of Action. The M&E Plan will serve as a guide for measuring the progress of the DRM in the agriculture sector. While results-based data and information on effectiveness and efficiency will be reported to the Government, donors and project implementers.

⁸⁰ GoL (2005). National Forestry Strategy: MAF

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
	Five-Year Development Plan for Agriculture, Forestry and Development (2021-2025)	The Plan promotes agricultural production to guarantee food security and nutrition, to produce quality and diverse agricultural products with objectives are "to ensure food security, to produce food and agricultural products that is clean, safe and sustainable based on industrialization and modernization Rural Development and Forestry Development". More specifically, the Plan aims to achieve the growth rate of the agricultural and forestry products including processing by 2.5% per year, accounting for 15.3% of GDP, contributing to the growth of the economic structure at the level of 4% per year to ensure the security of food supply. It also sets the target to produce 3.5-4 million tons of rice per year (of which 2.5 million tons of guaranteed rice), aiming to increase the consumption of meat, fish and eggs by an average of 73 kg per person per year, by ensuring the growth of livestock at an average of 3-4% per year and the growth of fish farming at the level of 3-	response and to build back better in recovery, rehabilitation and reconstruction. This Five-Year Plan inherently sets out 6 priority actions with regard to climate change and DRM, including: i) Develop DRM Action Plan at the district and village levels ensuring better response and recovery of drought and flood as well as pests and diseases, ii) Conduct research/studies to better understand and to be able to predict disasters that may occur in each season across the country, iii) provide capacity building and introduce the use technologies for agriculture to enhance farmers' adaptation to climate change, iv) develop or improve climate early warning system for farmers to better prepared and responded to disasters including pests and animal diseases, v) promote diversified and integrated farming system, and link it to market by promoting value chain of potential produces, and vi) create climatic and agro-ecological maps for participatory land-use planning that helps identify types of land appropriate for a specific type of agriculture in each region/ location to better inform decision making and planning for agriculture, forestry, and rural development.	Notably, the Plan also develops a wide range of specific targets and indicators in four programs and 13 priority actions. Some great examples of the indicators regarding DRM and climate resilience enhancing include research and developing techniques to manage the use of suitable sloping land related to soil improving to adapt to climate change and acceptable to farmers in the northern provinces for 60%; Develop soil, water and fertilizer management models for crops in areas at risk of droughts and climate change in 5 provinces in the central and southern regions to achieve 60% by 2025. Regarding the irrigation development, to ensure having a modern model of agricultural production among provinces for the production of agricultural products – By 2025, a total of 454,800 hectares of irrigation areas increased – of which 170,000 hectares in the dry

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
		4% per year. Aiming for an average export value of agricultural products of 1.200 million dollars per year; 70% forest cover by 2025 and build 69 urban areas in the country. ⁸¹		season and 284,800 hectares in the rainy season, and so on.
Urban Development	Vision towards 2035 and National Strategy on Housing and Urban Development (2024-2030) and Action Plan (2024-2025)	The Strategy aims to provide clear vision and strategy as a guideline for planning public investments for future urban planning and development. It defines the vision of " <i>developing housing and urban development to be sustainable, attractive and modern</i> ". In order to achieve the vision, it focuses on four strategic areas, including: i) Developing and improving of related laws and legislation, as well as setting policies to promote and manage the urban development as a priority; ii) Enhancing the capacity of the organization of the infrastructure and urban development sector; iii) Seeking sources of funds for the development of housing, infrastructure and urban planning to be sustainable and resilient; and iv) Transforming urban	The Strategy highlights responses to climate change impacts, in line with Sustainable Development Goals. Under urban planning targets, it also mentions urban design in line with the concepts of green cities, environmental sustainability, and climate resilience. Specifically, it defines an extensive range of interventions and activities with regard to resilience enhancing, including developing standards and techniques for the construction, and maintenance of infrastructure related to the integration of standards for ensuring climate resilience; enhancing research and transferring of technologies and techniques for adaptation and building resilience to climate change; promoting the development of multimodal transportation system, infrastructure, urban design that is resistant to climate change and disasters; and improving and building urban drainage systems and prevent floods in cities, along with	The Strategy defines clear strategic areas, focused programs and prioritized activities. Although it does not establish indicators to measure the progress of each developed activity, it defines clear targets to be achieved for each strategic areas – some instances with regard to the climate resilience enhancing include developing housing in controlled direction to be safe, sustainable and accessible to all at least 2 projects from 2024 onwards; developing urban infrastructure and environment in a green and sustainable way for at least in 2 cities and 3 districts and 10 landfills; and improving of Urban Master Plans of 45 district to achieve 100% by 2030.

⁸¹ MAF (2021). 5-Year Development Plan for Agriculture and Forestry Sector (2021-2025)

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
	Five-Year Development Plan (2021-2025) for the Public Works and Transport Sector	management and administration in a modern direction (Smart City). ⁸² The Plan sets out a logical policy framework structure to contribute achieving the 9 th NSEDP, with the updated Vision 2030 of the sector: <i>“Develop Public Works and Transport Sector to be a leading, specific priority, highly effective, modern, safe, Climate Resilience, integral and sustainable sector”</i> . ⁸³	the protection of protected areas (lakes, riverbanks, and wetlands) to ensure that cities have good ecosystems and resilience to the climate change. The Plan sets 10 Overall Goals for the public works and transport sector. In particular, the Goal 4 – climate resilience focuses on developing the public works and transportation to be stable and resilient to disasters. This goal aims to improve the quality and resilience of infrastructure developing for climate resilience to ensure that public works and transport networks are built and maintained with the standards that provide safe and reliable facilities in all weathers. ⁸⁴ While the Goal 6 is related to the Sustainable Urban Development and in line with the National Strategy on Housing and Urban Development – which focused on developing integrated infrastructure in urban areas to be safe, green, environmentally sustainable, resilient and integrated with regional and internal connectivity, and following criteria ensuring empathy with local characteristics while balancing	Under the 10 Goals, the Plan establishes clear indicators over 11 programs and 59 priority activities, especially the program 6: Development of Smart City Plan with environmentally friendly; and program 8: Development of resilient infrastructure to prevent climate change impacts – which are directly related to climate change, some examples of specific indicators include at least 5 Master Plans of 5 towns to be reviewed and amended; Implementing urban development projects in 3 cities and city along the Mekong Subregion (GMS) Corridor to complete in 4 cities to improve urban infrastructure and environment; Vientiane Capital and 3 Municipality with at least 4 cities along the GMS Corridor to develop standardized garbage

⁸² GoL (2022). Vision towards 2035 and National Strategy on Housing and Urban Development towards 2030

⁸³ MPWT (2021). 5-year Development Plan for Ministry of Public Works and Transport (2021-2025)

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
			development between urban and rural areas, reducing environmental pollution, greenhouse emissions, waste, and the impacts of climate related disasters.	disposal landfills; Garbage disposal services in Vientiane Capital, 3 Municipality with at least 4 cities along the Mekong subregion to cover more than 80% for general waste and infectious and hazardous waste; and creating at least 4 legislations on smart city.
Water Resources	Vision towards 2040 and National Strategy on Water and Water Resources Management and Utilizing towards 2030	The Vision and the Strategy is defined based on the strategic guidelines of the country's NSEDP. The vision is focused on <i>"Management and use of water and water resources according to the principle of integrated management, ensuring good quality and sufficient quantity to meet the consumption and sustainable development as well as reduce the damage caused by water"</i> . To achieve the vision, the Strategy defines plans, goals and detailed activities – which include key strategic areas: (1) integrated watershed management; (2) managing the database-information system for water and water resources; (3) water and water resources protection and restoration; (4) groundwater management; (5) water use related to water infrastructure; (6) creation of financial mechanisms; (7) human resources development;	The Strategy significantly identifies challenges and issues faced by the water sector, including the climate change impacts. It also defines 17 targets, 28 focused programs and 82 activities over 8 strategic areas – of which four areas are directly involved climate change including areas of developing of the integrated water resources management (IWRM) and river basin management plan; protection and restoration of water and water resources; improvement of water related infrastructure and early warning systems; and human resources development. Some sample interventions and activities related to the climate change adaptation include the enhancing the study and assessment of the climate risk and vulnerability assessment (CRVA) of water areas and water resources such as wetlands, peatlands and aquatic biodiversity; improving the irrigation systems to be more resilient to climate	The Strategy also establishes clear and specific indicators for each developed activity. Some great examples regarding climate change indicators include developing and improving of at least four legislation documents on river basin management; developing of at least 18 River Basin Management Plans (RMP) in small, medium and large-scale; identifying 10 water protection zones; expanding 14 more meteorological and hydrological stations across the country; conducting CRVA in at least 12 river basins across the country; establishing at least two early warning centers. Notably, the Strategy also indicates the timeframe, main responsibility party as well as the estimated budget for each activity to be implemented.

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
		(8) Cooperation with the international community. ⁸⁵	change and disasters; providing training in IWRM and climate change adaptation.	
Other key sectors	The Strategy on Climate Change and Health Adaptation (2018-2025) ----- Five-Year Development Plan for the Energy and	In terms of climate change, health sector in Lao PDR is one of the most progressive sectors on climate change integration into its policies. Key achievement of this sector on climate change mainstreaming included the development and endorsement of the Strategy on Climate Change and Health Adaptation (2018–2025) and Action Plan (2018 – 2020) in 2018. The overall objective of the Strategy is to “promote the capacity of the public health sector and community to protect and prevent the people health from climate change”. It also indicates different components, main activities, timeline, main responsibilities and financing needed for the health sector.⁸⁶ ----- The Plan emphasizes on the contribution to the 9th NSEDP. It sets out the vision: “The	This Strategy is developed according to the 2015 Operational Framework for Building Climate Resilient Health Systems of the World Health Organization and inherently addresses climate change adaptation, which consists of 6 strategic directions and 10 components, including: 1) Enhancing leadership and governance; 2) Building strong organizational and staff capacity; 3) Improving health information system and climate change; 4) Building climate resilience and sustainability of technology and infrastructure; 5) Improving health service provision; and 6) Financing public health and climate change. ----- The Plan sets out 11 priority targets to be implemented and achieved over 5 years. While the climate change is also	Unlike other strategies and plans, this Strategy clearly identifies specific indicators and means of verification over 10 components and 44 priority activities. Some examples of collective indicators include: 100 staff participated in the training on health and climate change per year (50% are female staff); include at least 8 hours of teaching-learning courses on climate related health in the National University of Health Sciences; create and update at least 5 technical guidelines on the diagnosis, investigation, control, prevention and treatment of diseases; organize training sessions on health and climate change at least 3 times/year; produce 10,000 posters/ brochures targeting communities, and so on ----- Although targets and activities are indicated in the Plan, the clear indicators are not defined

⁸⁵ GoL (2023). Vision towards 2040 and National Strategy on Water and Water Resources Management and Utilizing towards 2030

⁸⁶ MoH (2017). Strategy on Climate Change and Health Adaptation to 2025

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
	Mining sector (2021-2025)	<i>development of the energy sector is a priority and mining is important on the basis of consistency with the overall development trend in the region and internationally, contributing significantly to the increase of an income, with the pace of quality growth according to the goals of sustainable and green development."</i> The Plan is also developed according to the overall trend of development and in line with the potential of the sector by defining in detail the expectations and focus areas of the energy and mining sector.	significantly considered in the Target 5: promoting clean energy in transport sectors; Target 6: promoting energy saving and efficiency; and the Target 8: developing management policy on mining sector in the sustainable and green manners.	including climate change related indicators in particular.
	Vision towards 2040 and Strategy on Mining Development towards 2030 (Under approval)	The vision focuses on "Developing geology and mining in the direction of turning it into a modern industry and using the potential of mineral resources in a transparent, professional, economical, efficient and highly effective manner, according to the goal of green and sustainable development". While the Strategy is developed based on the lessons learned and the remaining issues over the past 10 years, aiming to develop the Strategy as the directive guide for the mining sector in developing the basic infrastructure in the production of	The Strategy defines 6 key targets for the mining sector to be implemented and achieved – of which there are two targets involving the climate change consideration, including the Target 2: developing of management policy of mining sector in the sustainable and green manners; and Target 6: mainstreaming Sustainable Development Goals (SDG) and Green Growth into the development plan of the mining sector.	Like the Five-year Development Plan, clear indicators are not yet developed in this Strategy.

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
	National Master Plan for Land Allocation	minerals in the country to supply the domestic demand and export goods. National Master Plan for Land Allocation is approved in 2018, which is another important piece of legislation on land management with clear scope, categories and use of lands to manage, protect, develop and use lands in accordance with sustainable practices. This National Master Plan defines land to be reserved and conserved to be forestland covering 70% of the country's land area, including wetland. The designated land consists of Protection Forest, Conservation Forest and Production Forest, including forest plantation. Land allocation and land use planning is aimed to be implemented at multi-levels, based on the National Master Plan for Land Allocation, and coordinated with all relevant stakeholders. ⁸⁷	Presently, Ministry of Natural Resources and Environment (MONRE) is translating this National Master Plan into plans at the sub-national level that will cover an integrated management of natural resources and environment including climate change. Participatory sustainable forest management – especially bringing rights and responsibilities closer to forest resources has seen some progress. The revised National Forestry Strategy incorporated with the National Master Plan for Land Allocation will also be enhanced efforts in promoting climate resilience and establishing a clear link between adaptation co-benefits and climate mitigation efforts.	However, the clear indicators related to climate change are not defined yet in this Plan.
	National REDD+ Strategy (NRS) to 2025 and Vision towards 2030	The overall objectives of the NRS are to determine directions for the development of REDD+ and develop these into action plans	Since the Strategy inherently focuses on climate change mitigation, thus the climate change adaptation is not mentioned well in the Strategy.	The specific indicators related to climate change adaptation are not defined in this Strategy.

⁸⁷ GoL (2018). National Master Plan for Land Allocation

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
	----- National Strategy on Transport ----- Natural Resources and Environment Strategy (2016-2025)	and projects for implementation in each period, aiming for reducing emissions from deforestation and forest degradation, along with promoting restoration and plantation to increase CO² absorption, and contributing to the NSEDP and livelihood improvement.⁸⁸ ----- The Strategy aims to transform Lao PDR from a land-locked to a land-linked country by providing efficient and reliable transport infrastructure and facilities, particularly transit transport routes, and; facilitating cross border transport of goods and people mobility between and among neighbors and countries in the region. It also emphasizes inclusive development by narrowing the gap between urban and rural areas. ----- The National Environment Strategy is formulated to provide a vision and strategic direction for the development and management of natural resources and environment, and to ensure sustainable social economic development, and build capacity	----- The Strategy mentions disaster prevention, readiness and preparedness. Notably, the reduction measures on GHG emissions are not addressed well in the policy. ----- One of the themes of the Strategy is strengthening the capacity of Lao PDR on Climate Change Adaptation and Mitigation and Disaster Risk Reduction.	----- Climate change adaptation indicators are not defined yet. ----- Clear climate change adaptation indicators are not defined yet.

⁸⁸ GoL (2021). National REDD+ Strategy (NRS) to 2025 and Vision to 2030

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
	National Disaster Risk Reduction Strategy	for climate change adaptation and mitigate the risks of natural disasters. This Strategy is endorsed in 2020 aims to expand the application of the Disaster Management Law, enacted in 2019, and to execute regional and global disaster risk reduction policies and strategies. It takes into account various natural disasters like floods, droughts, landslides, fires, and disease outbreaks.⁸⁹ According to the strategy, the National Disaster Management Committee (NDMC) is required to be established at all levels in order to task with coordinating early warning, preparedness, emergency response, and recovery activities. Moreover, the Disaster Management Fund has been established at all levels in response to the emergency events.	Inherently addresses DRM and climate resilience building	No specific indicators on climate change adaptation
	The Renewable Energy Development Strategy of the Lao PDR 2011	The Renewable Energy Development Strategy acknowledges the importance of renewable energy sources and their development. It sets a goal of increasing the share of renewable	There is no mention of climate change adaptation in the Strategy. It inherently promotes the climate change mitigation	

⁸⁹ GoL (2020). National Disaster Risk Reduction Strategy to 2030: MLSW

Sector	Relevant Policies, Strategies and Plans	Description	Climate Change Considerations	Adaptation Indicators
		energy to 30 percent and replacing 10 percent of transport fuels with biofuels by 2025.		

Appendix 5: Recent and on-going climate change adaptation projects and activities

Name/Responsible/ Institution/Donor/Budget	Main objectives	Key project components and activities
Ongoing and incoming initiatives		
- Project title: Building the Capacity of the Lao PDR Government to Advance the National Adaptation Planning Process; - Executing entity: Department of Climate Change, Ministry of Natural Resources (MONRE); - Implementing entity: UNEP - Duration: 48 months (2021-2024) - Budget: US\$3,552,969 - Donor: GEF - Status: On-going	The objective of the project is to strengthen the institutional and technical capacity of stakeholders and the government in Lao PDR to advance the NAP Process". The implementation focus of the project will be on: - strengthened coordination capacity building at both national, sectoral and subnational levels; - building the climate change adaptation knowledge and information system; - mainstreaming climate adaptation into national development policies, planning and budgeting and improving access to domestic and international finance; - ensuring knowledge development and learning through iterative monitoring and review;	1. National climate change scenarios, planning tools and training courses established to promote iterative adaptation planning in the future; 2. Nationally agreed gender-sensitive adaptation targets and modalities mainstreamed into national, sectoral and provincial strategies; 3. Strengthened central to sub-national government planning linkages on setting adaptation targets and monitoring progress on those targets; 4. Enhanced access to adaptation finance that delivers the country's adaptation targets effectively, and 5. Private sector engagement in adaptation that will both provide support for the agenda and investment to meet some of its challenges.
- Project title: Advancing Lao PDR's National Adaptation Plan (NAP) through Climate Change Vulnerability Assessments for Disaster Risk Management; - Executing entity: Department of Climate Change, Ministry of Natural Resources (MONRE); - Implementing entity: UN-Habitat - Duration: 36 months (under finalisation)	The main objective of this GCF support program is to establish integrated adaptation planning and monitoring systems to enable climate resilience across sectors, as well as strengthen impact and catalyze the scale of public and private adaptation finance, based on strong climate rationale and active stakeholder engagement	1. Improving climate change impacts, exposure and vulnerability understanding at all levels; 2. Reducing vulnerability to impacts of climate change by building adaptive capacity and resilience; 3. Addressing the gaps/barriers identified in the Lao First National Communication to the UNFCCC, 8th National Socio-economic Development Plan (2016-2020) and other national strategy documents; 4. Facilitating the integration of climate change adaptation into relevant new and existing policies,

Name/Responsible/ Institution/Donor/Budget	Main objectives	Key project components and activities
- Budget: US\$1,998,869 - Donor: Green Climate Fund (GCF) - Status: In-coming		programs and activities, and strategies within all relevant sectors; 5. Integrating adaptation-planning activities into specific or broader resilience planning to increase awareness and information on climate change adaptation across government actors.
- Project title: Support for Mainstreaming Climate Change Adaptation into Sectoral Planning in Lao PDR; - Executing entity: Department of Climate Change, Ministry of Natural Resources and Environment (MONRE); - Implementing entity: Global Green Growth Institute (GGGI) - Duration: 24 months (under finalization) - Budget: US\$1,000,000 - Donor: Green Climate Fund (GCF) - Status: On-going	The program aims to enhance Lao PDR's climate resiliency through the integration of adaptation at the sector level	This program would significantly contribute to NAP process through key activities including identifying, designing and implementing adaptation investments in line with national priorities as knowledge on key vulnerabilities will be generated and coordination mechanism will be established for an effective action planning and implementation for resilience.
- Project title: Building Resilience of Urban Populations with Ecosystem-based Solutions in Lao PDR; - Executing entity: Department of Climate Change, Ministry of Natural Resources and Environment (MONRE); - Implementing entity: UNEP - Duration: 5 years (2021-2024) - Budget: US\$11 mil. - Donor: Green Climate Fund (GCF) - Status: On-going	The project objective is to implement an integrated approach to flood management to build the climate resilience of local communities living in four major cities in Laos, namely Vientiane, Paksan, Savannakhet and Pakse.	The project includes three main components: 1. strengthening technical capacity and knowledge management for EbA; 2. developing city-level flood management strategies; and 3. implementing urban EbA interventions in three cities located along the Mekong River.
- Project title: Building Climate Resilience of Urban Systems through Ecosystem-	The project objective is to reduce the vulnerability of poor urban communities in Asia-Pacific LDCs to	The four-year project has three main components for:

Name/Responsible/ Institution/Donor/Budget	Main objectives	Key project components and activities
based Adaptation (EbA) in the Asia-Pacific region - Executing entity: Department of Climate Change, Ministry of Natural Resources and Environment (MONRE); - Implementing entity: UNEP - Duration: 48 months (2020-2023) - Budget: US\$1,000,000 - Donor: GEF - Status: On-going	climate change impacts using Ecosystem-based Adaptation (EbA) in Oudomxay and Phongsaly Province.	1. institutional strengthening and capacity building of city management authorities in pilot cities to plan and implement urban EbA; 2. demonstrating urban EbA interventions in pilot cities; and 3. disseminating knowledge and raising public awareness on urban EbA in pilot cities.
- Project title: Strengthening Agro-climatic Monitoring and Information Systems (SAMIS) to Improve Adaptation to Climate Change and Food Security in Lao PDR Project - Executing entity: Department of Meteorology and Hydrology (DMH), MONRE and the Department of Agricultural Land Management (DALAM), MAF; - Implementing entity: FAO - Duration: 2017-2022 - Budget: US\$22,000,000 - Donor: GEF-LDCF - Status: On-going	The project aims to address monitoring, observation, analysis, data storage, and development of value-added information products, promote sharing and better inform agricultural decision making	The project includes three components: 1. strengthening agro-climatic monitoring, analysis, communication, and use of data and information for decision making in agriculture and food security; 2. strengthening institutional and technical capacity for monitoring and analysis of agricultural production systems and development of Land Resources Information Management System; 3. knowledge management dissemination and application of information at local level including integrating lessons learned into planning
- Project title: Change Change and Health Adaptation Plan (H-NAP) - Executing entity: Department of Hygiene and Health Promotion, Ministry of Health; - Implementing entity: WHO	The Health Sector is quite progressive on the climate change integration in the sectoral plan. With the support of WHO, the sector aimed to develop its own Health – National Adaptation Plan (H-NAP) which led by the MoH with WHO support, aiming to integrate into the NAP moving forward.	This project directly contributes to the NAP process for Lao PDR

Name/Responsible/ Institution/Donor/Budget	Main objectives	Key project components and activities
- Duration: 2020-2023 - Budget: - - Donor: WHO - Status: On-going		
- Project title: Integrated Water Resource Management and Ecosystem-based Adaptation (EbA) - Executing entity: Department of Water Resource, MONRE; - Implementing entity: UNDP - Duration: 2022-2026 - Budget: 6,000,000 - Donor: GEF - Status: On-going	The project was funded by GEF with an aim to promote integrated management of the wetland sites in the Mekong River Basin for increased climate resilience of Savannakhet Province and Luang Prabang communities vulnerable to floods and droughts, which are expected to worsen under future scenarios.	The project will increase the resilience of communities in two particularly vulnerable areas through: 1. Strengthened national and provincial capacities for Integrated Catchment Management and integrated urban Ecosystem-based Adaptation for climate risk reduction; and 2. The introduction of community-based water resource and ecological monitoring systems in the Xe Bang Hieng river basin.
- Project title: Enhancing Integrated Water Management and Climate Resilience in Vulnerable Urban Areas of the Mekong River Basin - Executing entity: Department of Water Resource, MONRE; - Implementing entity: UNDP - Duration: 2021-2025 - Budget: 1,593,000 (USD) - Donor: Republic of Korea - Status: On-going	Project objective is to strengthen the climate and disaster resilience of people and communities in vulnerable regions of Lao PDR and Cambodia – Particularly for Lao PDR in two vulnerable areas of Xe Bang Fai river basin in Khammouane Province and Xe Don river basin in Champasak Province – through improved climate risk and vulnerability assessment and developing an integrated water resource management (IWRM) approach	There are three main components including: 1. Conducting inclusive assessment of water-related climate risks completed in the priority river basins. 2. Enhancing enabling environment for gender-responsive climate risk-informed integrated water resources management developed. 3. Developing funding proposal for priority risk reduction measures developed.
- Project title: Building climate and disaster resilience capacities of vulnerable small towns in Lao PDR (AF 2)	The project aims to build climate resilience in small towns along the EWEC through the provision of climate resilient water infrastructure, and the mainstreaming of climate change into urban planning. A rapid vulnerability assessment has been carried out in each of the target settlements,	Rapid vulnerability assessment conducted for development of project proposal.

Name/Responsible/ Institution/Donor/Budget	Main objectives	Key project components and activities
- Executing entity: Department of Water Resource, MONRE and Department of Housing and Urban Planning, MPWT; - Implementing entity: UN-Habitat - Duration: 2020-2025 - Budget: 5,000,000 (USD) - Donor: Adaptation Fund (AF) - Status: On-going	forming the basis of an action plan. The VA will also feed into a master plan which will demonstrate how to mainstream climate action into urban planning.	
- Project title: Enhancing adaptive capacity in Lao PDR provinces, and building resilient housing in Vulnerable communities - Executing entity: Department of Climate Change, MONRE and Department of Housing and Urban Planning, MPWT; - Implementing entity: UN-Habitat - Duration: 2024-2028 - Budget: 7,561,000 (USD) - Donor: Adaptation Fund (AF) - Status: On-going	The main objective of the project is to enhance climate resilience in vulnerable, impoverished communities across six provinces in Lao PDR by improving provincial adaptation capacity and bolstering housing resilience. The project will adopt a comprehensive approach to enhance shelter and housing resilience by focusing on improving and localizing government adaptation systems, as well as fortifying houses and community evacuation centers in selected vulnerable towns. This recognizes the multifaceted nature of building resilience in the housing sector, encompassing policy, planning, and regulation; capacity building; enhancing construction practices; and improving early warning and evacuation systems.	The project aims to achieve its objectives by: • Increasing the adaptive capacity of communities and provincial institutions to develop and maintain community infrastructure and housing. • Implementing adaptive measures through the construction of community infrastructure and the reconstruction and rehabilitation of houses. • Strengthening community awareness and integrating adaptation into policy through advocacy and knowledge management.
- Project title: Reinforcing the capacities of meteorological and hydrological services and enhancing the early warning systems in Cambodia and Lao PDR (CREWS) - Executing entity: Department of Meteorology and Hydrology, MONRE; - Implementing entity: World Meteorological Organization (WMO),	For Lao PDR, this project aims to reduce the impacts of disasters caused by hazards by promoting the use of early warning and risk information. CREWS seeks to strengthen national capacity in providing hydromet, early warning, and response services, ensuring that vulnerable populations in Lao PDR receive effective risk-informed early warning services. Regarding capacity development, the project has reportedly assisted DMH in enhancing their skills and	To achieve the overall objective, the following five major outcomes have been outlined: 1. Strengthened governance mechanism and enabling environment created for national and regional stakeholders. 2. Enhanced capacity of National Meteorological and Hydrological Services (NMHSs) to provide forecasts and warnings. 3. NMHS's information and communication technology and capacities strengthened.

Name/Responsible/ Institution/Donor/Budget	Main objectives	Key project components and activities
World Bank (WB) , and United Nations Office for Disaster Risk Reduction (UNDRR) - Duration: 2021-2025 - Budget: 5,500,000 (USD) - Donor: - - Status: On-going	improving the quality of hydromet forecasts, and developing early warning systems and flood forecasting models.	4. Enhanced preparedness and response capability to act upon warning and risk information to minimize impact of disasters on lives, livelihood and socio-economic systems 5. Improved integration of gender and vulnerable groups across the Early Warning – Early Action (EW-EA) value chain

Appendix 6: Interview questions

i) **Enabling environment:**

1. Have there been any climate change related policies and plans developed or being developed in your department/organization? If so, please provide more details
 - If not, what are the challenges that your department/office encounter in developing or performing of climate change (adaptation) related policies and plans?
2. Has climate change (adaptation) been mainstreamed in your sectoral policies and plans? If so, please provide more details
 - If not, what are the possible barriers or constraints on mainstreaming of climate change in your sectoral policies and plans?
3. Have there been any financial mechanisms developed or allocated for planning and implementing climate related plans and policies including capacity building activities? If so, please provide more details on how it is allocated
4. What are the urgent needs of your office in enhancing climate related policy development, integration and implementation?

ii) **Institutional level:**

1. How is your department/office structured? How many division/units? How many staff (female)?
2. How many people have responsibilities for climate change related activities/initiatives? What are their responsibilities?
3. What are the roles and mandates of your office related to climate change (direct or indirect)?
4. What climate change adaptation related projects, activities or initiatives are being implemented in your office (recently/on-going)?
5. What are the challenges/barriers in implementing climate change related projects and programs of your office?
6. Has there been any climate related information/database management platform developed or being developed in your office?
7. What are the challenges that your office face in managing of knowledge and database/information related climate change?
8. What are the needs of your office in implementing climate change projects and programs/initiatives?
9. Has there been any coordination mechanism developed or being developed in your sector?
10. What are the key challenges/gaps in coordination with sectoral government entities and development partners in the implementing climate change activities (adaptation)?
11. What are the key challenges in enhancing gender-related offices or vulnerable groups participating in the climate change capacity development activities?

iii) **Individual level:**

1. Have you or your staff participated in the climate change/adaptation related capacity building activities/training workshop? If so, have you encouraged women staff participated in those workshops?
2. Have there been any climate change related capacity building programs developed or being implemented in your department/organization? If so, please provide more details
3. Have there been any climate change adaptation/planning materials (such as training module, manuals, guideline, etc.) developed for your staff? If so, please provide more details
4. What is your level of climate change knowledge (in particular adaptation. For instance, causes of climate change, impacts, etc.)?
5. What are the key knowledge gaps on uptake of the climate change adaptation/planning from your perspectives?

6. What are the challenges that you personally face in implementing climate related projects and activities?
7. What are the capacity areas that you personally require to be built for implementing climate change related policies, projects and programs/initiatives?
8. What are your recommendations to improve/enhance capacity of your staff and office, including technical, financial and policy instrument development point of view in short and long-term?

Appendix 7: Survey questionnaire

Instructions: Please answer the following items accurately, completely and to the best of your knowledge. Put a mark in the box accordingly.

I. Personal Profile and General Questions

1. Name	First Name _____ Surname _____	
2. Gender	☐ Male ☐ Female	
3. Department/Office		
4. Position/Job Title		
5. Email address:		Phone no.:
6. Highest Educational attainment <i>Note: Specify field of specialization for all degrees received.</i>	☐ Secondary/ High School ☐ Technical/vocational College Degree ☐ Bachelor's Degree ☐ Master's Degree ☐ Doctoral Degree ☐ Post-doctoral training Field of Study/Specialization _____	
7. In your present position, what best describes your primary role and responsibility? Please check all appropriate	☐ Policy and Planning ☐ Information Systems Management ☐ Training and Capacity Building ☐ Knowledge Management ☐ Budgeting and Finance ☐ Project Management ☐ Others _____	
8. Do you have experience working in climate change? If yes, how many years?	☐ None ☐ < 1 year ☐ 1-3 years ☐ 4-6 years ☐ 7-9 years ☐ >10 years	
9. Do you have experience working in climate change adaptation planning? If yes, how many years?	☐ None ☐ < 1 year ☐ 1-3 years ☐ 4-6 years ☐ 7-9 years ☐ >10 years	

II. Capacity Assessment Questions

Area 1: Policy and Strategy Development and Implementation

1. Are there any existing policies/strategies of your department/office related to climate change/adaptation?
☐ Yes ☐ No

If yes, please indicate the policies/plans:
2. Are there legislation instruments including laws and decrees developed for your sector?
☐ Yes ☐ No

If yes, please indicate the instructions/guidelines:
3. Has climate resilience/adaptation been mainstreamed into the main policies, plans or strategies of your sector?
☐ Yes ☐ No

If yes, please specify:
4. Are there clear policies/instructions/guidelines for mainstreaming climate change-related activities in your department/office?
☐ Yes ☐ No

If yes, please specify:
5. How would you evaluate the overall effectiveness of your department/office in implementing policies and strategies related to climate change?
☐ Not at all effective ☐ Reasonably effective ☐ Very effective ☐ Not Applicable

Why?
6. In your view, to what extent are the key officials and staff in your department/office knowledgeable and competent in planning and implementing climate change policies and plans?
☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high
7. To what extent are policies, plans and strategies related to climate change clearly communicated/disseminated across the departments/offices to all personnel responsible?
☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high

Area 2: Financial Resources

8. Is there a budget allocation for climate change related activities?
☐ Yes ☐ No if yes, answer question #9
9. How are these budgets allocated? Check all that apply.
☐ Policy and Planning

☐ Information Systems Management and Technology

☐ Training and Capacity Building

☐ Knowledge Management

Other:
10. In your opinion, is allocated budget sufficient to carry out planning and implementing activities related to climate change (adaptation/resilience building)?
☐ Yes ☐ No

If no, why?

11. Is there a budget allocation for capacity building program on climate change planning/adaptation?
☐ Yes ☐ No if yes, answer question #12
12. How would you evaluate the overall effectiveness of your department/office in managing budget allocated to the capacity building program related to climate change adaptation?
☐ Not at all effective ☐ Reasonably effective ☐ Very effective ☐ Not Applicable
- Why?

Area 3: Project and Information Management

13. Are there climate change/adaptation related programs, projects or activities being implemented under your department/office?
☐ Yes ☐ No
- If yes, please specify:
14. How would you evaluate the overall effectiveness of your department/office in managing projects related to climate change/adaptation?
☐ Not at all effective ☐ Reasonably effective ☐ Very effective ☐ Not Applicable
- Why?
15. Do you think that the staff in your office is capable of effective implementation of projects and activities related to climate change?
☐ Yes ☐ No
- if yes, answer question #16
16. To what extent are the key officials and staff in your department/office competent in implementing projects and activities related climate change?
☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high
17. Is there a database/repository system for the data collection, consolidation and dissemination/sharing of the knowledge products from projects on climate change?
☐ Yes ☐ No
18. To what extent does your department have access to knowledge products on climate change (brochures, manuals, guides, etc.)?
☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high
19. In your opinion, to what extent can your department/office access to and manage information or database on climate change to support decision-making?
☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high
20. How would you evaluate the overall effectiveness of your department/office in managing knowledge and information related to climate?
☐ Not at all effective ☐ Reasonably effective ☐ Very effective ☐ Not Applicable
- Why?
21. In your view, to what extent are the key officials and staff in your department/office knowledgeable and competent in managing knowledge and information, database and sharing related climate change?
☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high

Area 4: Coordination and Partnerships

22. Are there institutional mechanisms in place for the involvement of multiple stakeholders (e.g., private sector, academia, CSOs and communities) for climate change related activities?
☐ Yes ☐ No

23. How would you evaluate the overall effectiveness of your department/office in coordination with other national/local government agencies related to climate change?
☐ Not at all effective ☐ Reasonably effective ☐ Very effective ☐ Not Applicable

Why?

24. In your opinion, do you think staff in your department/office are knowledgeable or competent in coordination and partnering with other stakeholders related climate change?
☐ Yes ☐ No

Why?

Area 5: Participation and Inclusion

25. Are civil society organizations (such as Lao women union, Lao youth union, etc.) included in the consultation process or activities on capacity development programs/workshop related to climate change?
☐ Yes ☐ No

26. Are women staff in your department/office encouraged to participate in the consultation or capacity development program activities?
☐ Yes ☐ No

27. Is gender inclusiveness/responsiveness mainstreamed in your main sectoral policies or plans?
☐ Yes ☐ No if yes, answer question #28

28. To what extent has gender been mainstreamed into your main policies, plans or strategies?
☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high

Why?

29. In your view, how would you evaluate the overall effectiveness of your department/office on promoting participation of women and vulnerable groups in climate change planning/activities?
☐ Not at all effective ☐ Reasonably effective ☐ Very effective ☐ Not Applicable

Why?

30. To what extent do you think the staff in your office are knowledgeable and competent on women/vulnerable groups participation promoting in the climate change planning activity/process?
☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high

Area 6: Monitoring and Evaluation (M&E)

31. Is there an existing M&E system/mechanism in place for climate change activities in your office?
☐ Yes ☐ No

If yes, please specify:

32. Is there guideline providing for M&E of climate change activities in your office?
☐ Yes ☐ No

If yes, please specify:

33. How would you evaluate the overall effectiveness of your office on performing M&E related to climate change planning?

☐ Not at all effective ☐ Reasonably effective ☐ Very effective ☐ Not Applicable

Why?

34. To what extent are the staff knowledgeable and competent in M&E of programs and projects, monitoring of financial resources allocated to activities?

☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high

35. How often are your staff provided with adequate training opportunities on M&E related to climate change activities?

☐ Not at all ☐ sometimes ☐ Often ☐ Very often

Area 7: Knowledge and Technical Capacity

36. To what extent can your department/office manage and provide climate information on climate vulnerability, hazards and impacts to support decision-making on adaptation planning?

☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high

37. Does your department/office have the staff capacity and operational procedures to provide information on climate vulnerability, hazards and impacts to support decision-making on adaptation?

☐ Yes ☐ No

If yes, please specify:

38. To what extent is the staff knowledgeable, adequately qualified and competent in analysis of climate scenarios, modelling, vulnerability assessments, provision of information on hazards and impacts to support decision-making on adaptation planning?

☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high

39. In your opinion, please you identify the following level of technical capacity and knowledge of your staff (such as GIS vulnerability assessment, etc.)?

☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high

Why?

Area 8: Human Resources Development

40. Do you think that your department/office has a capacity development program/plan in place for staff and key personnel climate change areas?

☐ Yes ☐ No

if yes, answer question #41

41. How would you evaluate the overall effectiveness of your department/office in implementing capacity development programs related to climate change adaptation?

☐ Not at all effective ☐ Reasonably effective ☐ Very effective ☐ Not Applicable

Why?

42. Does your department/office conduct need assessment/analysis to identify capacity gaps and required capacity of personnel?

☐ Yes ☐ No

If yes, how often?

43. In your opinion, to what extent are the staff in your department/office competent on knowledge and tools on climate change (such as climate risk data collection tool, survey tool, vulnerability assessment tool)?

☐ Very low ☐ Low ☐ Medium ☐ High ☐ Very high

44. Do you think that the staff are provided with adequate training opportunities on climate change planning, such as climate risk and vulnerability assessment, etc.?

☐ Yes ☐ No

If yes, how often?

45. In your view, what actions are most needed to improve capability of your staff? Check all that apply.

☐ Technical training ☐ Knowledge sharing ☐ Database/information managing

Other:

Area 9: Training Delivery and Needs

46. Is there an existing training manual/toolkit in place for climate change activities in your office?

☐ Yes ☐ No

If yes, please specify:

47. How would you evaluate the overall effectiveness of your department/office in delivering/providing training on climate change?

☐ Not at all effective ☐ Reasonably effective ☐ Very effective ☐ Not Applicable

Why?

48. Please rank the following modes of training delivery according to your personal preference: (*From 1-10, 10 being the most preferred and 1 being the least preferred*)

___Instructor-led Classroom or Face to Face ___Paper-Based Self Study

___Workshops/Write-shop ___Mentoring and Coaching

___Field/Site Visit or Study Tour (for high-level officials) ___Online Modules

49. What would be the ideal training schedule for you to participate in?

☐ 1 working day ☐ 2-3 working days ☐ 4-5 working days ☐ Others

50. What factors/challenges do you think would prevent you from participating in a training activity?

Please specify:

51. Please indicate your level of knowledge of the following content/training areas by checking the appropriate boxes below:

Training areas/topics	Have you attended training on the area specified?		Level of Knowledge		
	YES	NO	No knowledge	With Basic knowledge	Very Knowledgeable
Climate change (Basic) Conceptual understanding on climate change and its impacts.					
Climate change adaptation/resilience Climate change adaptation introduction and national adaptation planning essential					
Climate change policies and strategies International and national climate change policies and agreements, including UNFCCC, Paris Agreement, NDC, National Climate Change Strategy, NAP, etc.					

Training areas/topics	Have you attended training on the area specified?		Level of Knowledge		
	YES	NO	No knowledge	With Basic knowledge	Very Knowledgeable
Climate change planning Overview of steps on climate change planning, including developing, prioritizing and appraising adaptation options, implementing, and M&E					
Climate vulnerability and risk assessments Methods and steps on assessing climate risk and vulnerability					
Climate change adaptation mainstreaming Introduction of climate change mainstreaming into development and sectoral plans					
Climate change adaptation and gender Gender responsive, inclusive and mainstreaming into the climate change adaptation plan					
Climate finance Financing climate change adaptation and implementation including international financing mechanisms – such as GCF, GEF, AF, etc.					
Climate change (Advanced) Climate change projections, downscaling, scenarios and modelling.					
Climate change and urban planning Principles, methods and techniques of land use, transport and infrastructure planning for cities					
Climate change and stakeholder engagement Concepts of community development, participation, organizing as applied in planning					
M&E and reviewing Overview of M&E and review process for the implementation of climate change programs and initiatives					
Others:					

52. Please rank the following training areas/topics according to your personal preference? (*From 1-10, 10 being the most preferred and 1 being the least preferred*)

- | | |
|---|--|
| ___ Climate Change Science (Basic) | ___ Climate Finance |
| ___ Climate Change Adaptation/Resilience | ___ Climate Data Management and Tools (GIS, modelling) |
| ___ Climate Change Policies and Strategies | ___ Climate Change and Urban Planning |
| ___ Climate Change Planning | ___ M&E/MRV for Climate Change |
| ___ Climate Risk and Vulnerability Assessment | ___ Climate Change and Disaster Risk Management |
| ___ Climate Change Mainstreaming | ___ Climate Change and Stakeholder Engagement |
| ___ Climate Change and Gender Inclusiveness | ___ Others, please specify: |