ADAPTATION FUND

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16 March 2026

Adaptation Fund Board
Project and Programme Review Committee
Thirty-seventh Meeting
Bonn, Germany, 7-8 April 2026

PROPOSAL FOR
LAO PEOPLE'S DEMOCRATIC REPUBLIC

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular-sized Project Concept

Country/Region: Lao PDR
Project Title: Safeguarding Lives and Livelihoods in Lao PDR: Enhancing Urban Flood and Food Systems Resilience
Thematic Focal Area: Disaster risk reduction and early warning systems
Implementing Entity: United Nations Human Settlements Programme (UN-Habitat)
Executing Entities: Ministry of Agriculture and Environment; Ministry of Education and Sports; Provincial Departments of Public Works and Transport (+NPSEs) and in Vientiane, Savannakhet, Champasak, Luang Prabang, Muang Xay, Khammouane
AF Project ID: AF00000502
IE Project ID:
Requested Financing from Adaptation Fund (US Dollars): 22,438,869
Reviewer and contact person: UnaMay Gordon
Co-reviewer(s):
IE Contact Person: Odicea Angelo Barrios

Technical Summary	The project "Safeguarding Lives and Livelihoods in Lao PDR: Enhancing Urban Flood and Food Systems Resilience" aims to enhance the resilience of Lao PDR's urban and peri-urban systems against climate-induced flooding and related hazards through integrated infrastructure, institutional, and knowledge-based interventions. This will be done through the three components below: Component 1: Strengthening Community and Institutional Capacity for Flood Resilience (USD 2,300,000) Component 2: Strengthening Urban and Peri-Urban Resilience through Flood Management and Food Systems Infrastructure Development and Rehabilitation (USD 15,916,292) Component 3: Strengthening Community Awareness and Mainstreaming Adaptation through Advocacy and Knowledge Management (USD 500,000) Requested financing overview: Project/Programme Execution Cost: USD 1,964,694 Total Project/Programme Cost: USD 18,716,292

	Implementing Fee: USD1,757,884 Financing Requested: USD 22,438,869 The proposal does not include a request for a project formulation grant. The initial technical review raises some issues, such as lack of a Theory of Change some gaps in the environmental and social principles checklist, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review. The second technical review raises some issues, such as gaps in the Theory of Change and outputs in project structure, provision of quantitative benefits, gaps in environmental and social principles checklist, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review. *Please be advised that the findings of the AFB Secretariat's review of the funding proposal(s) do not reflect, indicate, or prejudge the outcome of the reaccreditation process currently underway. The Implementing Entity (IE) shall acknowledge that the funding proposal will not be approved by the Board if the IE's accreditation has expired, and reaccreditation has not been achieved at the time of the Board's decision. Notwithstanding this potential risk, the IE has elected to proceed with the development of the funding proposal.*
Date:	243 February 2026

Review Criteria	**Questions**	**First Technical Review Comments[January 28, 2026]**	**Second Technical Review Comments (February 24, 2026)**
Country Eligibility	1. Is the country party to the Kyoto Protocol, and/or the Paris Agreement?	**Yes**. Paris Agreement sign 22 April 2016 and Kyoto Protocol ratified 6 February 2003.	-
	2. Is the country a developing country particularly vulnerable to the	**Yes**. Lao PDR is among the most climate-vulnerable countries in the world, consistently ranking high in the Global Climate Risk Index. Lao PDR is one of the	-

	adverse effects of climate change?	most flood-prone countries globally, ranking sixth worldwide.	
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	**Yes**. As per the Endorsement letter dated 6 January 2026.	
	2. Does the length of the proposal amount to no more than Fifty pages for the project/programme concept, including its annexes?	**Yes**. The proposal is 46 pages including its annexes.	-
	3. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?	**Yes**, **however further information is required.** As per Part II Section A (pages 14-19), the programme contains a set of activities well-suited for addressing climate change impacts such as rehabilitating drainage and irrigation network, elevating roads and bridges, and constructing model schools that serve as evacuation centers. However, some risk being considered business as usual as some are described as rehabilitation or upgrading if systems. The project/programme activities align with its overall goal and objectives hence ensuring the cohesion of the components	

		The project provides justification for the target cities, outlining their hazards, vulnerabilities and importance. The concept does not include a Theory of Change [ToC]. **CR1**: Kindly include under Part II A the Theory of Change [ToC] (and its diagram) to clearly illustrate how the proposed interventions will lead to the intended long-term change, the assumptions being made, the potential constraints, the required inputs and how they link to the project components. A ToC narrative should also be included. **CR2**: Please consider revising the document to better articulate the project structure to align it with specific objectives and clearly articulate it with the Outcomes, Outputs and Activities. One suggestion in addition to including a Theory of Change, is to consider merging components 1 and 3 that target same type of activities related to strengthening Community for increased resilience. A third or new component might be dedicated to knowledge management and additional capacity building for project sustainability and scaling up.	**CR1: Not cleared** Theory of Change (ToC) has been added on page 21. However please place it, along with the IF-THEN statement, above the description of the project components and also add the risks within the ToC diagram. **CR2: Not cleared.** Component 3 has been renamed to reflect it being a dedicated knowledge management component with Component 1 focusing on resilience building and capacity development. Additionally, please indicate the reason for having only one output according to the ToC. As per page 15, Output 1.1.1 is too broad for a standalone output and may be best with more than one output under the same outcome. Please consider grouping activities that contribute to the same type of results as this would improve clarity Please ensure the changes are reflected in CR1 (ToC).

		CAR1: At Part II Section B in the last paragraph, please include a statement on how the Activities support one or more AF Strategic Objectives consistent with the Alignment table in Part III Section A. This is not clearly currently defined. **CAR2**: Kindly revise the document and further detail the proposed beneficiaries (direct and indirect) with indicative target including gender disaggregated figures. **CR3**: Please clearly articulate how construction of bridges/elevated bridges and upgrading/rehabilitation of paving and drainage systems will exceed standard development and based on future flood levels.	**CAR1: Cleared.** As per page 24, a statement on how the project activities align with the AF Strategic Objectives has been added. **CAR2: Cleared** As per page 24 (Table 13), the proposed direct and indirect beneficiaries have been included. In the full proposal, please be sure to reflect how these figures in Table 13 have been calculated. **CR3: Cleared** As per page 23, the CN includes an explanation of how the proposed infrastructure works are designed beyond conventional standards, using climate projections and future flood levels for long-term resilience.
	4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and	**Yes**. However further clarification is needed. As per Part II, Section B (pages 21-22), the concept note provides environmental, economic and social benefits to communities – though largely descriptive and qualitative. Some clarity is needed on how environmental resilience and institutional learning are contributing to long-term adaptation outcomes. An initial gender assessment is included from pages 36-37. Though it is mainly	

	Social Policy and Gender Policy of the Fund?	qualitative in analysis, the background section (page 5) provides some quantitative information. **CAR3**: Please ensure the initial gender analysis includes both qualitative and quantitative information. **CAR4**: Please quantify the economic, social and environmental benefits. When exact figures are not available, kindly include estimates or proxies to support the identified project's impact alongside a brief explanation of the method used for these calculations.	**CAR3: Cleared** Additional quantitative information has been added on page 40 under Gender Assessment. **CAR3.1(new):** Please ensure the references for the quantitative data are also included as footnotes. **CAR4**: **Not cleared** Quantitative information has been provided on direct and indirect beneficiaries. Environmental benefits are less concrete compared to economic and social benefits. It is noted as co-benefits, with focus on mitigation. Consider placing benefits in a table format: • Column 1 – type of benefit (economic, social, environmental) • Column 2 – current situation • Column 3 – benefits after the project/programme (in bullet point format) Kindly include estimates or proxies to support the identified project's impact
	5. Is the project / programme cost effective?	**Yes**. As per Part II, Section C (pages 23-24) the concept note provides a logical explanation of the selected scope and approach as it focuses on flood-prone	

		area and prioritising climate-resilient infrastructure vs reactive measures. It speaks from a sustainability perspective emphasising avoided future losses and minimising the need for repeated reconstruction. The concept includes a qualitative description of alternatives such as repeated emergency repairs, dredging without structural upgrades, or reliance on post-disaster humanitarian assistance characterized as less cost-effective. While cost-benefit analysis is not required at this stage, quantitative estimates can further help with this assessment. **CR4**: Please confirm whether a cost-benefit analysis will be conducted during the development of the full proposal. **CAR5:** Kindly provide the specific plans for the sustainability post project in particular under components 2 and eventually revised components 2 (see above).	**CR4: Cleared.** As per page 25, a detailed cost-benefit analysis will be conducted during the development of the full proposal. **CAR5: Not cleared.** For financial sustainability, further explanation is provided, however it would benefit from clearer articulation of mechanisms and funding sources beyond the project for ongoing operation and maintenance. This may also be linked the Sustainability of Infrastructure. For technical sustainability, please refer to the standards or guidelines that will be applied. For sustainability of infrastructure, can this be merged with financial sustainability regarding O&M etc as there is overlap?

	6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?	**Yes.** However additional information is required. The concept note clearly references relevant national strategies and plans (NAP, NDC and NSDS) and explains how the proposed project responds to priority interventions identified within these frameworks. However, the latest National Adaptation Plan was published on 16 October 2025. **CR4**: Please include the latest NAP in Table 12 and ensure the year is clearly referenced in the narrative. Please also the ensure the dates of the plans/strategies are aligned with those in Table 12.	**CR4: Cleared** As per page Table 14, the latest NAP has been included and the dates of the plans and strategies have been confirmed.
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	**Yes.** As per Part II, Section E, Table 13, page 27, the concept note outlines the relevant rules, regulations, standards and procedures.	**-**
	8. Is there duplication of project / programme with other funding sources?	**No.** As per Part II, Section F (pages 28-29), a list of project in urban or climate change section relevant to the project have been provided. The concept clearly articulates whether or not there is geographic	

		overlap and the direct synergy and areas for enhancement. **CAR6**: Please ensure projects from other sources are included. Consider the "Building resilience of urban populations with ecosystem-based solutions in Lao PDR" funded by GCF which aimed to aims to shift the paradigm of urban flood management in Laos from a limited, hard infrastructure approach towards an integrated approach that enhances climate resilience. Be sure to consider lessons learned from on-going particularly completed projects learning from their problems/mistakes. **CAR7**: In addition to mostly geographical overall currently presented, please revise the table 14 to add or revise third column presenting the opportunities for synergies as well as areas of duplication if any.	**CAR6: Cleared** As per Table 16 (pages 31-32), projects from other sources are included, highlighting complementarity and opportunities for learning. **CAR7: Cleared** As per table 16, the opportunities for synergies and areas of duplication have been included.
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	**Yes.** As per Part II, Section G (pages 18-20), the concept includes a knowledge management component (Component 3). It emphasises the knowledge and learning dimension of the project, with the systematic documentation and dissemination of information on adaptation practices. The concept outlines knowledge products and multiple communication pathways for sharing of knowledge and experiences with various stakeholders such as planners and	

		educators. It also emphasises knowledge sharing at the regional level through ASEAN platforms. However as currently structured, it includes activities linked to strengthening community awareness and therefore the knowledge management budget will need to be clearly articulated. **CR5**: Please clarify the following: • Who will be responsible for tracking the experiences gained? How frequently will this be done? **CAR8**: As currently structured, there is no dedicated component for KM nor specific budget. Kindly consider revising the project structure to add a specific KM component (see above).	**CR5: Cleared** As per pages 32-33 under Section G, the experiences gained will be tracked by UN-Habitat and presented annually at the Lao National Urban Forum, which serves as a key platform for sharing lessons and best practices. **CAR8: Cleared.** The project structure has been refined and Component 3 will be the dedicated component for knowledge management activities.
	10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes**. However further clarification is needed. As per Part II, Section H (pages 30-32), the concept notes extensive consultations with key government agencies at the national provincial and district levels. Community-level consultations were held with village chiefs, the Lao Women's Union, and community members, including representatives of ethnic minority groups. Through discussions with the Lao Women's Union, differentiated	

		impacts of floods and storms on men and women as well as opportunities were identified. Table 15 provides records of the consultations, including dates, location, key outcomes. It does not provide a list of participants disaggregated by gender. **CR6**: Please clarify if the national gender machinery (e.g. Ministry responsible for gender) was also consulted.	**CR6: Cleared.** As per page 34, initial gender consultations for the concept note have been undertaken with the Lao Women's Union, which plays a central role in promoting women's rights and gender equality across national and sub-national levels in Lao PDR. Engagement with the Ministry of Labour and Social Welfare, through its Department of Women and Children, will be undertaken during the full proposal development stage.
	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	**Yes.** As per Part II, Section I (pages 32-33), the concept notes the country's fiscal constraints, government institutions lack the resources to undertake proactive flood resilience measures. However, it is not explicitly clear the project results are not contingent on success of any co-financed activities. **CR7**: In addition to table 16, please provide information about whether this project will meet its outcomes and outputs solely with the resources of the Adaptation Fund, and how the proposed	**CR7: Cleared** As per page 37, Section I, the CN acknowledges that the project will achieve its full set of outputs and outcomes using Adaptation Fund resources alone and is not

		project's objective will be achieved in regards adaptation. **CAR9**: Please emphasize how designs and standards are different from the conventional approach because of climate change considerations.	contingent on the success, continuation, or co-financing of other initiatives. **CAR9**: **Not cleared.** As per page 36, paragraph 1 provides clarification on conventional vs an approach with climate change considerations. As per Table 18, please clarify the climate-informed standards being used for cold storage facilities and climate resilient design standards for schools. Which guidance will be used for these?
	12. Is the project / program aligned with AF's results framework?	**Yes**. As per Part III, Section A (pages 39-20), the concept note is in alignment with Adaptation Fund revised strategic results framework adopted in 2019. **CAR10**: Please ensure the figures are round to whole numbers.	**CAR10: Cleared** As per Part III, Section A (pages 43-44), the figures have been rounded to whole numbers.
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Yes** The concept presents a comprehensive and well-structured sustainability narrative addressing all key areas of sustainability including but not limited to economic, social, environmental, institutional, and financial. It also demonstrates clear intent to ensure that the project benefits extend beyond the implementation period. Though some areas remain largely	**-**

		descriptive such as long-term financing arrangements, institutional ownership and environmental sustainability which should be strengthened in the full proposal.	
	14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes. However further clarification is needed.** The proposal identifies potential environmental and social impacts and risks and provides an initial gender context within which the project will operate. As per page 35, the concept currently classifies the project as a Category B under the AF's Environmental and Social Policy. However, some gaps are noted in the environmental and social principles checklist (Table 17), which indicates that no assessments are required across the principles despite the identification of risks elsewhere in the document. In addition, while risks are described in a separate table (Table 18), the level of risk is not clearly specified. An initial gender assessment is included as per page 36, providing largely qualitative information for gender roles, activities, needs, and available opportunities and challenges or risks for men and women. Some quantitative data on gender disparities are presented on page 5, covering 2019-2023.	

		CR8: Please consolidate Table 17 and 18 and revise Table 17 to align it with AF ESP template. This avoids checking both second and third column for the same principle in Table 18. For Table 17, for the third column "Potential impacts and risks" state and expand, - all potential impacts (direct, indirect, transboundary and cumulative), state whether the risk is low, medium or high, and include how it is planned to mitigate and manage each risk. Such risks should be described in the third column along with the corresponding mitigation measures. In addition, please take into account the following guidance: 1. In the third column, risks should be stated and properly write down for all relevant principles by starting the statement as "There is a risk of …". 2. If no risk is identified for a given principle, then state 'no risk' but a clear justification must be provided. 3. Whether the second column is marked depends on whether further assessment for compliance is required. **CAR11:** Please note that Adaptation Fund Principles 1, 4 and 6 always apply. For more information, please visit the following link and amend as needed: AF's ESP guidance.	**CR8: Not cleared.** As per Table 19 on pages 41-42, the content for former tables 17&18 have been combined. Each ESP is rated and potential impacts and risks and mitigation measures clarified. For Principles with 'no risk', then no further assessment is required. If no risk is triggered, then justification must be clear. For examples, there is a low risk for ESP related to Indigenous People, therefore further assessment is required. Please review all ESPs. **CAR11: Not cleared** As per Table 19 (pages 41-42), ESP 1,4 and 6 always apply, therefore please remove the 'X' which indicates no further assessment is required. Further assessment will be required for 1,4, and 6.

Resource Availability	1. Is the requested project / programme funding within the cap of the country?	**Yes**.	**-**
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	**Yes. However, some amendment is required.** The Implementing Entity Management Fee is at 8.5%. However, the figures are not rounded to a whole number. **CAR12**: Please adjust to be a whole number for Component 2 and ensure figures match across the tables – components table vs. budget.	**CAR12: Cleared.** As per table in Part III, Section A, the figures have been rounded to whole numbers and match across the tables. **CAR12.1(new):** Please use the table following new guidance**:** https://www.adaptation-fund.org/wp-content/uploads/2025/11/Alignment-with-Adaptation-Fund-Results-Framework-Template-and-guidance-Nov-2025.docx. Please include "Total objective level grant amount" and "Total outcome level grant amount". This should not include IE fees and EE cost. Please also remember to number the table.

	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	**Yes. However, some amendment is required.** The Project Execution Costs are at 9.5% but the figures are not rounded to a whole number. **CAR13**: Please adjust to be a whole number.	**CAR13: Not Cleared.** The amendments at Table 9 on page 11-12, the figure has been adjusted to be a whole number. 1. However, please remove the ".00" at the end of the component totals. 2. Additionally, please ensure that the budget is presented at the output level by further subdividing the grant amount column for additional rows aligned to the various outputs.
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	**No** The IE is listed as accredited but the accreditation expired on 1 October 2025. *Please be advised that the findings of the AFB Secretariat's review of the funding proposal(s) do not reflect, indicate, or prejudge the outcome of the reaccreditation process currently underway. The Implementing Entity (IE) shall acknowledge that the funding proposal will not be approved by the Board if the IE's accreditation has expired, and reaccreditation has not been achieved at the time of the Board's decision.*	**No** The IE is listed as accredited but the accreditation expired on 1 October 2025. *Please be advised that the findings of the AFB Secretariat's review of the funding proposal(s) do not reflect, indicate, or prejudge the outcome of the reaccreditation process currently underway. The Implementing Entity (IE) shall acknowledge that the funding proposal will not be approved by the Board if the IE's accreditation has expired, and reaccreditation has not been achieved at the time of the Board's decision. Notwithstanding*

		Notwithstanding this potential risk, the IE has elected to proceed with the development of the funding proposal.	*this potential risk, the IE has elected to proceed with the development of the funding proposal.*
Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	n/a at concept stage	
	2. Are there measures for financial and project/programme risk management?	n/a at concept stage	
	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	n/a at concept stage	
	4. Is a budget on the Implementing Entity Management Fee use included?	n/a at concept stage	
	5. Is an explanation and a breakdown of the execution costs included?	n/a at concept stage	
	6. Is a detailed budget including budget notes included?	n/a at concept stage	

	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	n/a at concept stage	
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	n/a at concept stage	
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	n/a at concept stage	
	10. Is a disbursement schedule with time-bound milestones included?	n/a at concept stage	

ADAPTATION FUND

CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	Safeguarding Lives and Livelihoods in Lao PDR: Enhancing Urban Flood and Food Systems Resilience
Country:	Lao PDR
Thematic Focal Area:	Disaster risk reduction and early warning systems
Type of Implementing Entity:	Multilateral Implementing Entity
Implementing Entity:	United Nations Human Settlements Programme (UN-Habitat)
Executing Entities:	Ministry of Agriculture and Environment; Ministry of Education and Sports; Provincial Departments of Public Works and Transport (+NPSEs) and in Vientiane, Savannakhet, Champasak, Luang Prabang, Muang Xay, Khammouane
Amount of Financing Requested:	22,438,869 (in U.S Dollars Equivalent)

Project Formulation Grant Request (available to NIEs only): Yes ☐ No ☒

Amount of Requested financing for PFG:

Letter of Endorsement (LOE) signed: Yes ☒ No ☐

NOTE: LOEs should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☐ This concept has been submitted before

☒ This is the first submission ever of the concept proposal

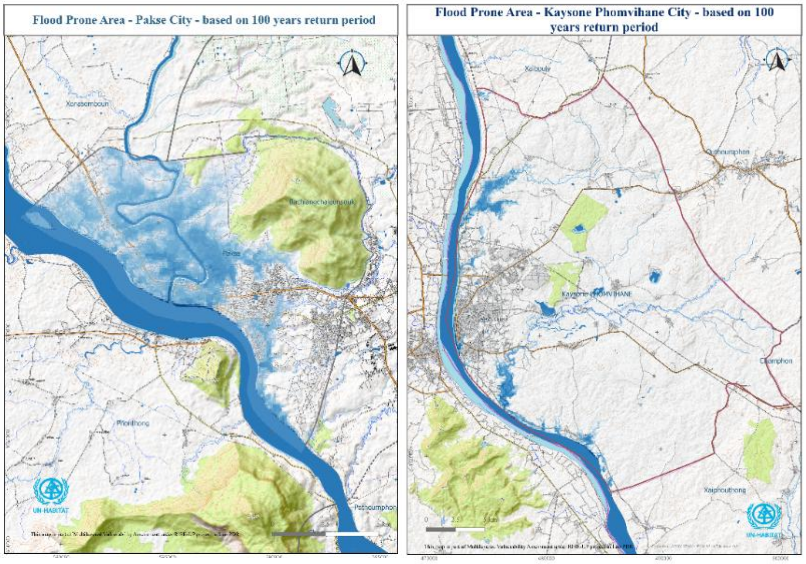
In case of a resubmission, please indicate the last submission date: Click or tap to enter a date.

Project/Programme Background and Context:

Lao PDR is among the most climate-vulnerable countries in the world, consistently ranking high in the Global Climate Risk Index. Its geography in the Lower Mekong Basin exposes it to floods, droughts, and storms, while rapid urbanization, low adaptive capacity, and widespread poverty compound risks. Over the past decade, the frequency and severity of disasters have increased, reversing development gains and causing significant human and economic losses.

Between 2013 and 2025, Lao PDR experienced a series of devastating climate-related disasters. Lao PDR is one of the most flood-prone countries globally, ranking sixth worldwide with a flood risk score of 9.1 out of 10[1]. Past floods highlight the scale of damage: in 2013, losses exceeded USD 270 million in damages.[2]. In 2018, Tropical Storm Son-Tinh and the Xe-Pian Xe-Namnoy dam collapse in Attapeu displaced tens of thousands, killed 56, and caused damages and losses of more than USD 370 million[3]. In 2019, almost half of all villages in Lao PDR, representing nearly three million people, experienced at least one climate hazard, most commonly droughts and floods[4]. In 2020, floods across central and southern provinces of Lao PDR affected more than 765,000 people, damaging homes, livelihoods, and essential infrastructure[5]. In 2024, Typhoon Yagi struck Luang Prabang, triggering flash floods and riverbank erosion, damaging houses, infrastructure, and cultural heritage sites[6].

***Figure 1. Flood prone areas in Pakse and Kaysone* Phomvihane**



Source: UN Habitat, 2025

In 2025, Tropical Depression Wipha struck Lao PDR, affecting over 172,000 people across 571 villages in 46 districts of Khammouane, Savannakhet, and Champasak provinces. The storm led to nine deaths, four missing persons, and massive displacement. The destruction of physical infrastructure was extensive, with one hospital, 55 bridges, 20 schools, and 147 shops and vehicles being destroyed completely. Power outages hit 56 locations, and 262 sanitation facilities were damaged. The agriculture sector suffered major losses, with over 21,000 hectares of rice fields and 7,500 livestock lost, posing a serious threat to food security and livelihoods in the region. The total estimated damage reached USD 13 million, severely impacting infrastructure, livelihoods, and essential services[7].

Table 1. Major climate-related disasters in Lao PDR, 2013–2024

Year	Event	People Affected	Deaths	Estimated Damages (USD)
2013	Floods	350,000	252	280 million
2018	Tropical Storm Son-Tinh + Attapeu dam collapse	600,000+	56	371 million
2019	Floods	1,000,000+	194	N/A
2020	Floods	70,000	2	7.4 million
2024	Typhoon Yagi (Luang Prabang)	TBD	TBD	Significant urban and heritage

[1] UN-Habitat. 2024. *Enhancing Health Infrastructure Resilience: A Multi-Hazard Risk Assessment of Health Facilities in Lao PDR*. Vientiane.
[2] UN-Habitat. 2024. *Strengthening Healthcare Resilience: Implementation of the Hospital Safety Index in Lao PDR*. Vientiane.
[3] EM-DAT. 2023. *International Disaster Database*. Université catholique de Louvain, Brussels.
[4] UN-Habitat. 2020. *Lao PDR National Climate Change Vulnerability Assessment - Preliminary Results*. Vientiane.
[5] ReliefWeb (2020) *Lao PDR Flooding Emergency Response Report,* New York.
[6] ADB. 2024. *Country Partnership Strategy: Lao PDR, 2024–2028*. Manila.
[7] IFRC. 2025. *DREF Operation, Lao People's Democratic Republic Flood 2025*, Vientiane

				damage

Source: EM-DAT, 2023; World Bank, 2021; ADB, 2023a.

Climate trends show clear warming of about 0.1°C per decade since 1960, with hotter nights, prolonged heatwaves, and longer dry spells[8]. By mid-century, average temperatures are projected to rise by 1.8°C under moderate emissions and up to 4°C under high-emissions scenarios by 2100[9]. The number of days above 35°C is expected to increase from 40 annually in 2005 to as many as 110 by 2050[10]. Heat stress will be exacerbated by the urban heat island effect, with cities up to 3°C warmer than surrounding rural areas[11]. Rainfall is projected to become more erratic: more intense rainfall concentrated into shorter periods will increase flash flooding, while longer dry periods will raise drought risks. Events currently expected once every 100 years could become as frequent as every 25 years[12].

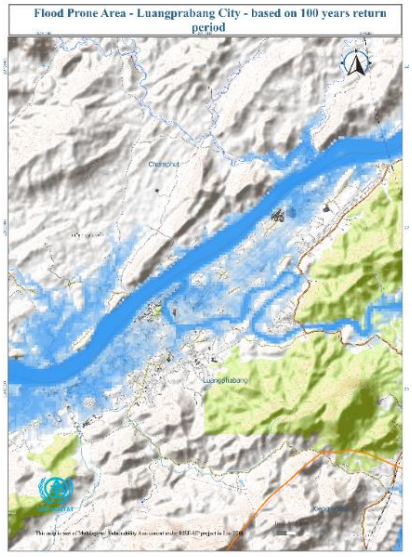
Table 2. Projected climate scenarios for Lao PDR

Indicator	Historical (1986–2005)	2030s (RCP4.5)	2050s (RCP4.5)	2100 (RCP8.5)
Avg. temperature rise	–	+1.0°C	+1.8°C	+4.0°C
Hot days (>35°C/year)	40	70	110	>150
Annual precipitation	Baseline	+2–3%	+5–7%	+10%
Frequency of extreme rainfall	Rare	1-in-50 yrs	1-in-25 yrs	1-in-10 yrs

Source: World Bank Climate Change Knowledge Portal, 2021.

Urban areas are particularly exposed. Vientiane Capital faces Mekong overflows, clogged drainage, and encroachment on wetlands such as That Luang Marsh, reducing flood buffering. In September 2024, Mekong water levels exceeded 12.5 m, inundating city areas. Luang Prabang suffers from flash floods and landslides from steep catchments, worsened by upstream deforestation, with repeated damage to embankments and cultural sites[13]. Kaysone Phomvihane faces recurrent flash floods from inadequate drainage, while Pakse experiences dual flooding from the Mekong and Se Done rivers, worsened by urban sprawl. Across cities, flooding is compounded by poor waste management, blocked drains, and unplanned urban expansion.

Figure 2. Flood prone areas in Luang Prabang



Source: UN Habitat, 2025

Adaptive capacity remains limited. Provincial and district authorities lack technical staff, hazard mapping, and enforcement capabilities. Urban master plans are outdated and building codes lack resilience standards. Lao PDR scores 6/10 for lack of coping capacity in the INFORM Risk Index[14], lower than regional peers.

Economic Context

The economic context compounds these risks. GDP growth slowed from 7% in 2016 to 4.7% in 2019, contracted by 0.5% in 2020, and recovered to 4-4.5% in 2021-2022[15]. Inflation surged above 30% in 2023-2024, eroding household incomes[16]. External debt reached USD 13 billion in 2023, leading to repeated credit downgrades[17]. Agriculture, employing a large portion of the workforce, is highly vulnerable to floods and droughts. Hydropower and mining dominate exports but contribute little to jobs. Tourism and services, concentrated in Luang Prabang and Vientiane, were badly hit by COVID-19 and repeated floods.

Table 3. Macroeconomic indicators for Lao PDR

[8] World Bank. 2021. *Climate Risk Country Profile: Lao PDR*. Washington, DC.
[9] World Bank. 2021. *Climate Change Knowledge Portal – Lao PDR*. Washington, DC.
[10] UNICEF Lao PDR. 2023. *Lao PDR's Climate Strategy 2024–2026*. Vientiane.
[11] Roberts, M., et al. 2023. *Unlivable: What the Urban Heat Island Effect Means for East Asia's Cities*. World Bank, Washington, DC.
[12] World Bank. 2021. *Climate Risk Country Profile: Lao PDR*. Washington, DC.
[13] Deltares. 2022. *Baseline Study on Integrated Urban Flood Risk Management for Vientiane and Paksan*. Delft.
[14] INFORM Risk Index. 2021. *Country Data for Lao PDR*. Brussels.
[15] World Bank. 2022. *Systematic Country Diagnostic: Lao PDR Update*. Washington, DC.
[16] AMRO. 2024. *Annual Consultation Report on Lao PDR 2024*. Singapore: ASEAN+3 Macroeconomic Research Office.
[17] IMF. 2023. *World Economic Outlook Database*. Washington, DC.

Indicator	2016	2019	2020	2023	2024 (proj.)
Real GDP growth (%)	7.0	4.7	-0.5	4.2	4.5
Inflation (%)	1.6	3.3	5.1	31.0	25.0
Public debt (% GDP)	62	68	72	110	108
Current account (% GDP)	-14.0	-7.5	-7.3	-8.0	-7.5

Source: IMF WEO, 2023; World Bank Economic Monitor, 2024.

Lao PDR's economy is characterized by structural vulnerabilities that amplify climate risks. The country has historically relied on natural resource exploitation, particularly hydropower and mining, which generate foreign exchange but provide limited employment. The country's late start in urbanization has limited its economic transformation, leaving a large share of the workforce dependent on agriculture and more exposed to climate risks[18]. Agriculture continues to employ around 60% of the workforce, but contributes less than 16% of GDP, making rural households disproportionately vulnerable to floods and droughts[19]. Hydropower and mining together account for over 35% of exports but are highly exposed to external shocks, as seen during the COVID-19 pandemic[20]. The services sector, especially tourism, was devastated by border closures, with arrivals plummeting by over 80% in 2020 and 2021[21].

Macroeconomic stability has deteriorated. Public debt rose from 62% of GDP in 2016 to over 110% in 2023, placing the country at high risk of debt distress[22]. The fiscal deficit has consistently exceeded 5% of GDP, limiting domestic investment capacity. The kip depreciated by over 45% against the US dollar between 2021 and 2023, raising the cost of imports, including food and fuel[23]. These pressures constrain the government's ability to finance climate adaptation and disaster recovery, forcing reliance on external assistance.

Table 4. GDP composition by sector (2023)

Sector	Share of GDP (%)	Employment Share (%)
Agriculture	16	~60
Industry (hydropower, mining, manufacturing)	33	~15
Services (tourism, trade, transport, finance)	51	~25

Source: World Bank, 2024; IMF WEO, 2023.

The intersection of climate hazards and economic fragility is stark. Floods and droughts reduce agricultural output, undermine food security, and strain household incomes. In urban areas, climate shocks disrupt trade, manufacturing, and services, further constraining growth. The World Bank estimates that without adaptation, annual average damage from riverine flooding of built-up areas could rise from USD 230 million today to USD 760 million by 2100[24].

Social Context

Social vulnerabilities are stark. The population of 7.3 million (2023) is 33% urban, projected to reach 47.7% by the end of 2025[25]. Urban poverty is 7% compared to 23.8% in rural areas, but inequality has risen[26]. Children are especially at risk: over one-third of Lao children are affected by at least one hazard, and in some provinces such as Attapeu and Oudomxay, the share rises above 60 percent. Female-headed households and people with disabilities are disproportionately affected by multiple hazards, facing higher risks of displacement and limited access to recovery support[27]. COVID-19 forced non-farm employment down from 61% to 30%, sending many back into subsistence agriculture[28].

Table 5. Selected social and demographic indicators

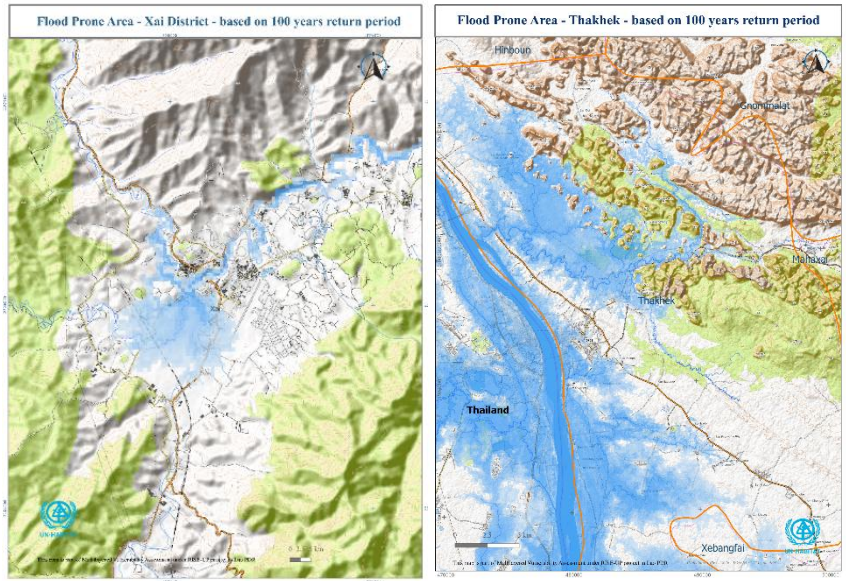
Indicator	Value
Population (2023)	7.3 million
Urban share (2023)	33%

[18] UN-Habitat. 2025. *Challenges and Economic Impacts of Delayed Urbanization in Lao PDR*. Vientiane
[19] World Bank. 2024. *Lao PDR Economic Monitor: October 2024*. Washington, DC.
[20] IMF. 2023. *World Economic Outlook Database*. Washington, DC.
[21] ADB. 2024. *Country Partnership Strategy: Lao PDR 2024–2028*. Manila.
[22] IMF. 2023. *World Economic Outlook Database*. Washington, DC.
[23] World Bank. 2023. *Lao PDR Economic Monitor: May 2023*. Washington, DC.
[24] World Bank. 2021. *Climate Risk Country Profile: Lao PDR*.
[25] Lao Statistics Bureau. 2019. *Population and Housing Census 2015 – Projections to 2035*. Vientiane.
[26] World Bank. 2022. *Systematic Country Diagnostic: Lao PDR Update*. Washington, DC.
[27] UN-Habitat. 2024. *Impact of Climate Change on Vulnerable Segments of the Population in Lao PDR*. Vientiane.
[28] World Bank. 2024. *Monitoring Household Welfare in Lao PDR*. Washington, DC.

Projected urbanization (2025)	47.7%
Poverty (rural)	23.8%
Poverty (urban)	7.0%

Source: Lao Statistics Bureau, 2019; UNDP, 2020; GoL, 2017.

Figure 3. Flood prone areas in Xay and Thakhek



Source: UN Habitat, 2025

The demographic structure of the population is youthful: 32% are under 14 years old, while only 5% are above 65[29]. This creates a dependency ratio of 60%, placing pressure on education and job creation systems.

Lao PDR is ethnically diverse, with 49 recognized groups. Many minority groups live in remote upland or riverine areas highly exposed to landslides, floods, and droughts, and often face barriers in accessing social services and disaster relief[30].

Gender inequalities also persist. Girls' secondary school enrollment is lower than that of boys (42.9% versus 48.6%). Women hold 27.5% of seats in the National Assembly but remain underrepresented in local decision-making structures[31]. Women are often responsible for water and household energy, making them particularly vulnerable to climate-related shocks. Gender disparities persist less than 60% of poor women are literate, compared to more than 80% of poor men[32].

Displacement from climate disasters is an increasing concern. Unplanned urban expansion, often in flood-prone zones without adequate services, compound risks for marginalized groups.

Table 6. Gender disparities in Lao PDR (2019–2023)

Indicator	Male	Female
Literacy (poor households)	>80%	<60%
Secondary enrollment (%)	48.6	42.9
Labor force participation (%)	76	67
National Assembly representation (%)	–	27.5

Source: GoL Gender Profile, 2017; UNDP HDR, 2020; Lao Statistics Bureau.

Safe water supply coverage in urban Lao PDR was about 67% in 2012, with roughly 45% of urban households having piped water[33]. Weak WASH systems in healthcare facilities mean that floods and outbreaks can quickly disrupt essential services unless emergency supplies are pre-positioned[34]. Waste generation reached 910,000 tons annually in 2023 and is projected to hit 1.4 million tons by 2035[35].

Vientiane is projected to reach 1.2 million residents by 2035, with Kaysone, Pakse, and Luang Prabang emerging as secondary hubs. Urban GHG emissions are also rising, with Vientiane producing 1.74 Mt CO_2e in 2023 (half from buildings, one-third from transport, 16% from waste)[36].

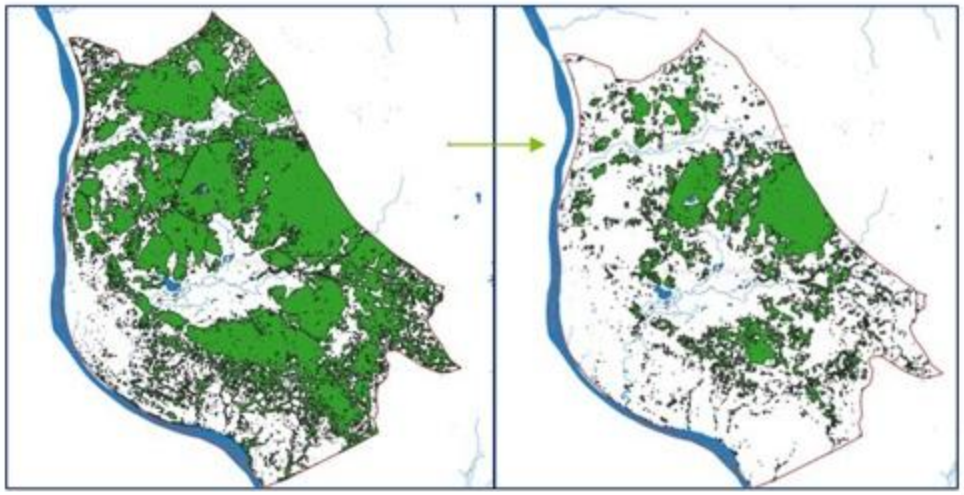
[29] Lao Statistics Bureau. 2019. *Population and Housing Census 2015 – Projections to 2035*. Vientiane.
[30] Government of Lao PDR. 2017. *Gender Profile of Lao PDR*. Ministry of Planning and Investment.
[31] UNDP. 2020. *Human Development Report – Lao PDR*. New York.
[32] Government of Lao PDR. 2017. *Gender Profile of Lao PDR*. Ministry of Planning and Investment, Vientiane.
[33] UN-Habitat. 2022. *Identifying Urban Low Emissions Opportunities for Lao PDR*. Vientiane.
[34] UN-Habitat. 2023. *Standard Guideline for WASH Services in Health Care Facilities During Emergencies*. Vientiane.
[35] Lao PDR. 2022. *Pakse Green City Action Plan*. Ministry of Public Works and Transport, Vientiane.
[36] Crippa, M., et al. 2021. *EDGAR Emissions Dataset – Urban Areas*. European Commission, Ispra.

Lao PDR faces a convergence of climate hazards, economic fragility, and rapid urbanization that magnifies vulnerability. Climate change is already imposing annual costs equivalent to several percentage points of GDP, undermining poverty reduction and development gains. Yet, with much of its urban development still ahead, Lao PDR has a critical opportunity to build climate-resilient, inclusive, and sustainable cities, safeguarding livelihoods while contributing to global adaptation goals.

Environmental Context

The environmental context exacerbates risks.

Figure 4. Forest Change from 2000 to 2025 in Kaysone Phomvihane



Source: UN Habitat, 2025

Large areas of agricultural land and wetlands in and around cities have been converted for housing and economic uses, reducing the availability of natural buffers against flooding[37]. Landsat and Sentinel imagery indicate that forest cover has declined from 325.1 km² in 2000 to 133.5 km² in 2025, a 54% reduction over 25 years, averaging a loss of about 7.6 km² per year[38]. Rapid urban growth has outpaced infrastructure development, with weak solid waste management contributing to pollution, blocked drainage, and heightened flood risks[39]. Weak spatial planning and lack of coordination has also led to heightened exposure to floods and storms in urban settlements[40].

Health and environmental vulnerabilities are also pronounced. Flooding is among the most significant hazards, with Lao PDR ranking extremely high on global risk indices. Health facilities in flood-prone areas face critical service disruptions, particularly in water and sanitation, undermining the resilience of both infrastructure and communities[41].

Development Context

Lao PDR has made progress in human development, but challenges remain. The country's Human Development Index (HDI) rose from 0.483 in 2000 to 0.613 in 2019, placing it in the medium human development category[42]. Despite this, Lao PDR ranked 137th out of 189 countries, reflecting persistent poverty, inequality, and service delivery gaps.

The government aims to graduate from Least Developed Country (LDC) status in 2026. Graduation criteria focus on income, human assets, and economic vulnerability. While progress has been made in income and education, vulnerability to climate shocks and natural disasters remains high, threatening sustainability of graduation[43].

[37] UN-Habitat. 2020. *Urbanization: A Rapidly Emerging Development Issue for Lao PDR*. Vientiane
[38] UN Habitat. 2025. Multilayered Vulnerability Profile: Kaysone Phomvihance City, Lao PDR. Vientiane
[39] UN-Habitat. 2020. *Urbanization: A Rapidly Emerging Development Issue for Lao PDR*. Vientiane
[40] UN-Habitat. 2020. *Linking Climate Policy and Spatial Planning in Lao PDR*. Vientiane
[41] UN-Habitat. 2024. *Enhancing Health Infrastructure Resilience: A Multi-Hazard Risk Assessment of Health Facilities in Lao PDR*. Vientiane.
[42] UNDP. 2020. *Human Development Report – Lao PDR*.
[43] UN DESA. 2018. *World Urbanization Prospects: 2018 Revision*.

Table 7. Human Development Index trends (2000–2019)

Year	HDI value	Rank
2000	0.483	–
2010	0.558	–
2019	0.613	137/189

Source: UNDP HDR, 2020.

Institutional Context

Institutional arrangements for climate change adaptation and disaster risk reduction in Lao PDR are evolving but remain constrained. The Ministry of Natural Resources and Environment (MONRE), renamed the Ministry of Agriculture and Environment (MAE) in 2024, has the mandate to coordinate climate policy through the Department of Environment (DOE). The Provincial departments of Public Works and Transport (DPWT) manage urban planning, housing, drainage, and water supply. The Ministry of Education and Sports (MoES) plays an important role in education and resilience building.

At subnational level, Provincial and District Offices are responsible for local implementation. However, decentralization has been partial, with limited capacity-building. Despite challenges, national planning frameworks provide entry points. The 9th National Socio-Economic Development Plan (NSEDP, 2021–2025) emphasizes inclusive and sustainable growth. Outcome 4 focuses on environmental protection, disaster risk reduction, and climate resilience, while other outcomes prioritize education, health, and infrastructure. The plan also stresses the need to align with the Sustainable Development Goals (SDGs)[44]. NDC (2021) identifies urban resilience, housing, WASH, and waste as priorities[45]. The National Strategy on Climate Change (2023) emphasizes smart cities and low-emission development[46].

However, financing and institutional capacity gaps remain critical barriers. National frameworks are often not fully implemented at provincial or district levels due to limited technical expertise, insufficient budgets, and weak coordination mechanisms.

With nearly half of the future built environment yet to be constructed, there is an urgent opportunity to embed climate resilience, green infrastructure, and inclusive planning into urban development. Without this, unplanned growth risks locking the country into high-emission, hazard-prone pathways.

International and national partners provide significant support through technical assistance and project financing. However, coordination among actors is often fragmented, and donor-driven initiatives sometimes operate in silos. Strengthening institutional coherence, particularly at the subnational level, is essential for building long-term resilience.

Project/Programme Objectives:

The overarching objective of this project is to enhance the resilience of Lao PDR's urban and peri-urban systems against climate-induced flooding and related hazards through integrated infrastructure, institutional, and knowledge-based interventions. This objective directly responds to the country's heightened vulnerability to recurrent floods, riverbank erosion, and inadequate urban drainage, which together threaten human lives, livelihoods, and economic stability.

Against this backdrop, the project will pursue three interlinked objectives. The first is to strengthen community and institutional capacities for climate resilience at both national and subnational levels. This will involve targeted training for line ministries and local governments, participatory planning with communities, and integration of adaptation priorities into planning, monitoring, and regulatory frameworks, with particular emphasis on digitization to improve climate and food systems data management. The second objective is to increase urban and peri-urban resilience to flooding through sustainable

[44] Lao PDR. 2021. *9th National Socio-Economic Development Plan (2021–2025)*. Ministry of Planning and Investment.
[45] Lao PDR. 2021. *Updated Nationally Determined Contribution (NDC)*. Vientiane.
[46] Lao PDR. 2023. *National Strategy on Climate Change to 2030*. Ministry of Natural Resources and Environment, Vientiane.

infrastructure. Investments will focus on rehabilitating drainage and irrigation networks, elevating vulnerable roads, constructing and rehabilitating bridges, protecting riverbanks, and developing schools that also serve as evacuation centers, while also safeguarding food systems through improved storage, transport, and market connectivity. The third objective is to strengthen knowledge management to support scaling and replication. Through documentation of lessons, dissemination of best practices, and development of knowledge products, including education-focused materials and curricula, the project will contribute to national climate strategies, inform policy reforms, and build an evidence base for replication across secondary cities.

In addition to broad institutional and infrastructural objectives, the project includes targeted interventions that respond to urgent needs in each city. In Vientiane Capital, the project will rehabilitate drainage and irrigation systems while introducing cold storage facilities to protect perishable food from post-harvest losses during flood events. Complementary works, such as the upgrading of paving systems and improvements to key junction drainage, will reduce localized flooding and protect transport corridors. In Luang Prabang, gravel roads and bridges will be elevated and rehabilitated to maintain connectivity during heavy rainfall, ensuring that schools, health posts, and markets remain accessible. In Pakse, the project will implement bank protection works along vulnerable stretches of the Mekong River and improve drainage and plumbing infrastructure in flood-prone neighborhoods. In Muang Xay, drainage infrastructure will be upgraded to increase discharge capacity, reducing the risk of flash flooding. In Muang Xay and Thakhek, Khammouane, two schools will be constructed to serve a dual purpose as educational facilities and evacuation centers during floods and other disasters. These site-specific measures not only safeguard critical infrastructure and food systems but also enhance the daily resilience of urban residents, particularly poor households dependent on local markets and public services.

Collectively, these objectives reflect a coherent and balanced approach that addresses immediate infrastructure needs while also embedding long-term institutional capacity and knowledge. They align directly with the Nationally Determined Contributions (NDC, 2021), the 9th National Socio-Economic Development Plan, and the National Strategy on Climate Change (2023), while also contributing to SDG 11 on sustainable cities and communities and SDG 13 on climate action. By targeting both “hard” and “soft” adaptation measures, the proposed project ensures that resilience is built into the foundations of urban development in Lao PDR, aligned with the national priorities.

Selection of Target Locations

The selection of target locations for the project follows a transparent, evidence-based process, based on consultations and vulnerability data collected for each of the interventions. Six urban centers have been prioritized: Vientiane Capital, Luang Prabang, Kaysone Phomvihane, Pakse, Muang Xay, and Thakhek. The selection was guided by four main criteria: hazard exposure, socioeconomic vulnerability, adaptive capacity gaps, and national strategic importance. Feasibility studies for all proposed infrastructure works have been completed in collaboration with the government.

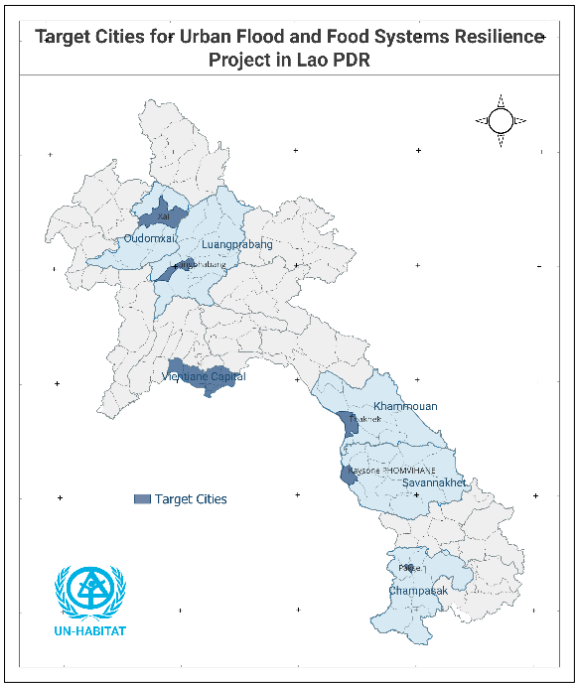
Hazard exposure was a primary factor. All cities are either situated along major rivers or located in flood-prone basins. Vientiane Capital faces Mekong overflows and severe drainage congestion. Luang Prabang is highly vulnerable to flash floods, while its upstream catchments have been degraded by deforestation[47]. Kaysone Phomvihane has suffered recurrent floods from the Mekong and inadequate drainage, damaging markets, schools, and housing. Pakse experiences dual flooding from the Mekong and Se Done rivers, affecting low-lying districts and straining existing infrastructure[48]. Muang Xay, in the mountainous north, is prone to flash floods and sedimentation, with its limited infrastructure often rendered impassable during heavy rains. Thakhek, located along the Mekong River, is exposed to seasonal flooding, with repeated impacts on transport links and community facilities.

Socioeconomic vulnerability further shaped the choice of locations. Urban poverty rates remain significant, with high concentrations of poor households in Savannakhet and Champasak provinces[49]. Unplanned expansion of urban settlements in flood-prone areas is increasing in Vientiane and Pakse, while female-headed households and ethnic groups face barriers to recovery from disasters. In Luang Prabang, tourism livelihoods are at risk from climate shocks, while in Muang Xay, rural-urban migrants are settling in hazard-

[47] Deltares. 2022. Baseline Study on Integrated Urban Flood Risk Management. Delft.
[48] ADB. 2024. *Country Partnership Strategy: Lao PDR, 2024–2028*. Manila.
[49] Lao Statistics Bureau. 2019. *Population and Housing Census 2015 – Projections to 2035*. Vientiane.

prone peri-urban zones. In Thakhek, limited livelihood diversification and dependence on informal trade heighten socioeconomic vulnerability, leaving low-income households particularly exposed to flood-related disruptions. In addition to vulnerability considerations, the strategic role of each city in national development was a key factor. The selected cities function as economic, administrative, cultural, and logistical hubs whose disruption would have cascading impacts beyond their municipal boundaries. By focusing on these locations, the project maximizes adaptation benefits at both local and national scales, ensuring that investments protect critical nodes of economic activity and service delivery.

Figure 5. Target Cities for Project Interventions



Source: UN Habitat, 2025

Food insecurity continues to be a serious issue in Lao PDR, pointing to deep-rooted weaknesses in the country's food system, particularly when viewed through the lens of regional inequalities. Rising food prices have significantly impacted household budgets, pushing nearly two-thirds of families to adopt coping mechanisms, most commonly using their savings to afford food and basic necessities[50]. In response, the Lao Agriculture Development Strategy (ADS) 2025 and Vision 2030 outlines a forward-looking approach targeting a 2.5% annual growth rate by investing in key areas such as irrigation systems, post-harvest processing, and value chain infrastructure[51]. Complementing this effort, a National Action Plan on Food Systems Transformation, currently under development, places strong emphasis on building resilience across the agricultural sector in response to climate risks and systemic vulnerabilities. Urban food systems are particularly sensitive to flood disruptions. In Lao PDR, over 70 percent of fresh food consumed in cities is supplied through informal markets, which are highly exposed to flooding, power outages, and transport disruptions[52]. Flood-related spoilage and market closures have contributed to price volatility, with food inflation exceeding 30 percent in 2023, disproportionately affecting low-income urban households[53].

Lao PDR's education system is also increasingly vulnerable to the impacts of climate change, with 98.6% of children at risk from multiple climate-related hazards. Events such as floods, heatwaves, and air pollution are disrupting learning, damaging school facilities, and putting the health and well-being of over 2 million children at risk. The scale of the challenge was evident in 2024, when Typhoon Yagi left nearly 20,000 students out of school and damaged 77 schools[54]. Considering these recurring shocks, there is growing recognition of the need for urgent investment in safe and climate-resilient schools. In recent years, the government has committed to advancing a multi-sectoral approach aimed at developing climate-smart education systems that can adapt to and withstand future climate threats.

Adaptive capacity gaps are also evident. Local authorities in the target cities lack adequate resources, technical staff, and hazard mapping capacity. Urban planning in Lao PDR is still centralized, and enforcement of land-use regulations is limited. Building codes remain outdated and do not adequately integrate resilience considerations, leaving infrastructure exposed to climate risks[55]. This results in repeated cycles of damage and repair, further straining public budgets. At the subnational level, fewer than 30 percent of municipalities have access to updated flood hazard maps, and local governments report

[50] World Food Programme. 2022. *Remote Household Food Security Survey Brief: November 2022*. Vientiane
[51] FAO 2025, *FAO-Hand-in-Hand Initiative*, Vientiane
[52] FAO. 2022. *Food Systems Profile: Lao People's Democratic Republic*. Rome.
[53] World Bank. 2024. *Lao PDR Economic Monitor: Navigating Economic and Climate Shocks*. Washington, DC.
[54] UNICEF 2024, *East Asia and the Pacific Region*, Vientiane
[55] UN-Habitat. 2020. *Linking Climate Policy and Spatial Planning in Lao PDR*. Vientiane.

limited technical capacity to integrate climate risk into urban planning and infrastructure design[56]. Public expenditure on preventive disaster risk reduction remains low relative to response spending, reinforcing cycles of damage and repair rather than long-term resilience.

Finally, the strategic importance of these cities makes them national priorities. Vientiane is the political and economic hub of the country, while Luang Prabang is a UNESCO World Heritage site central to national tourism. Kaysone Phomvihane is a key cross-border trade hub with Thailand, Pakse is the gateway to southern Lao PDR and the Mekong subregion, and Muang Xay is a growing regional center linking northern trade routes. Thakhek is a vital Mekong River town that serves as a logistics hub for Lao PDR. By safeguarding these centers, the project will deliver resilience benefits that ripple across the national economy.

Table 8. Target Cities and Key Vulnerabilities

City (Province)	Population (2023 est.)	Main Hazards	Key Vulnerabilities	Strategic Importance
Vientiane Capital	~950,000	Mekong overflows, drainage flooding	Rapid urbanization, solid waste clogging drains, limited sewerage coverage	National capital, economic hub
Luang Prabang (Luang Prabang)	~70,000	Flash floods, landslides, erosion	Heritage sites at risk, inadequate drainage, upstream deforestation	UNESCO World Heritage site, tourism hub
Muang Xay (Oudomxay)	~40,000	Flash floods, sedimentation	Rapid growth, weak infrastructure	Regional hub in northern Lao PDR
Kaysone Phomvihane (Savannakhet)	~120,000	Mekong floods, poor drainage	Urban poor, unplanned urban expansion	Cross-border trade hub with Thailand
Pakse (Champasak)	~95,000	Mekong & Se Done flooding	Encroachment on floodplains, weak waste management	Southern gateway, tourism & logistics hub
Thakhek (Khammouane)	~55,000	Mekong flooding, riverbank erosion	Informal trade dependence, limited infrastructure, poor households in low-lying areas	Cross-border connector on the East–West Economic Corridor, logistics hub for central Lao PDR

Sources: Lao Statistics Bureau, 2019; UN-Habitat/MONRE Vulnerability Assessment, 2019; EM-DAT, 2023; World Bank, 2021.

The methodology for selection combined climate hazard and disaster data with socioeconomic vulnerability indicators and was validated through consultations and site visits. This ensures that the project is directed to the areas of highest need; while also focusing on cities whose resilience is of strategic importance for national development.

Project/Programme Components and Financing:

Component 1: Strengthening Community and Institutional Capacity for Flood Resilience

This component addresses the persistent capacity gaps at both national and subnational levels. National institutions face challenges in integrating climate risk into urban planning. Provincial and district governments often lack capacity, while vulnerable communities, including women, youth, and ethnic groups, are rarely included in decision-making.

The project will deliver a structured programme of training, participatory workshops, and planning tools to strengthen institutional systems and empower local communities. This will ensure that climate risk is consistently integrated into planning and monitoring frameworks.

Alignment with Adaptation Fund outcomes/outputs:
Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses.
Output 2.1: Strengthened capacity of national and subnational centers and networks to respond rapidly to extreme weather events.
Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes

[56] UNDP. 2022. *Climate Risk Governance Assessment for Lao PDR*. Vientiane.

at local level.

Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness activities

Output 3.2: Strengthened capacity of national and subnational stakeholders to capture and disseminate knowledge.

Component 2: Strengthening Urban and Peri-Urban Resilience through Flood Management and Food Systems Infrastructure Development and Rehabilitation

This component tackles the urgent structural vulnerabilities of the target cities. Recurrent floods, erosion, and inadequate drainage compromise lives, livelihoods, and critical infrastructure. The project will finance a suite of site-specific investments, such as rehabilitating drainage and irrigation in Vientiane and Muang Xay; constructing a cold storage facility in Vientiane to safeguard food systems; elevating roads and rehabilitating bridges in Luang Prabang; implementing bank protection and drainage upgrades in Pakse and constructing safe schools that serve as evacuation centers during disasters in Muang Xay and Thakhek.

Alignment with Adaptation Fund outcomes/outputs:

Outcome 1: Reduced exposure to climate-related hazards and threats.

Output 1.2: Targeted population groups covered by adequate risk reduction systems.

Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets.

Output 4.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate impacts.

Component 3: Strengthening Community Awareness and Mainstreaming Adaptation through Advocacy and Knowledge Management

This component ensures that the project contributes beyond its immediate sites by capturing and sharing lessons to inform strategies and opportunities for scaling and replication. Knowledge management has been a persistent gap in Lao PDR's adaptation work, with limited monitoring and reporting systems. To address this, the project will establish an M&E framework with standardized indicators to systematically track results. In parallel, education will be positioned as a driver of resilience, with teacher training guides, digital learning resources, and upgraded ICT infrastructure helping to embed climate adaptation and disaster risk management in the school system. The project will also produce knowledge products (guidelines, case studies) and disseminate lessons through national and international platforms, ensuring that learning informs both policy reform and replication in other cities.

Alignment with Adaptation Fund outcomes/outputs:

Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level.

Output 3.2: Strengthened capacity of national and subnational stakeholders to capture and disseminate knowledge.

Table 9. Project Components and Financing

Project/Programme Components	Expected Outcomes	Expected Concrete Outputs	Amount (US$)
1. Strengthening Community and Institutional Capacity for Flood Resilience	1.1 National and sub-national institutions have strengthened capacity to integrate climate and flood risk considerations into planning, monitoring, and regulatory frameworks.	1.1.1. Flood resilience and disaster risk reduction integrated into environmental monitoring and regulatory systems.	2,300,000.00
2. Strengthening Urban and Peri-Urban Resilience through Flood Management and Food Systems Infrastructure Development	2.1 Flood resilience is strengthened through improved protective infrastructure systems to safeguard urban populations, critical infrastructure, and	2.1.1. Drainage and irrigation networks rehabilitated, and climate-resilient cold storage facilities developed in Vientiane Capital.	15,916,292

Project/Programme Components	Expected Outcomes	Expected Concrete Outputs	Amount (US$)
and Rehabilitation	livelihoods.	2.1.2. Thatluang paving and drainage systems upgraded to reduce localized flooding. 2.1.3. Gravel roads elevated and concrete bridges constructed in Luang Prabang to improve flood protection and connectivity. 2.1.4. Drainage systems upgraded in Kaysone Phomvihane City, Savannakhet, for urban flood protection. 2.1.5. Riverbank protection and urban drainage/plumbing upgrades implemented in Pakse City to reduce flood risks. 2.1.6. Drainage infrastructure upgraded in Xay District, Oudomxay, to increase capacity and mitigate urban flooding. 2.1.7. Two model schools constructed in Oudomxay and Thakhek to serve as evacuation centers during floods/disasters.	
3. Strengthening Knowledge Management Systems for Climate Adaptation Mainstreaming	3.1. Knowledge management systems supporting climate-resilient urban development are strengthened to enable evidence-based decision-making and long-term adaptation planning.	3.1.1. Knowledge on urban planning for food systems resilience advanced and shared through dissemination of best practices at national and international levels. 3.1.2. Knowledge products developed to inform climate policies for better flood management 3.1.3. M&E framework and indicators developed for tracking climate-resilient urban development at national and sub-national levels with a progress reporting system 3.1.4. Education materials, including teacher training guides and curricula, revised to incorporate climate change adaptation and disaster resilience.	500,000.00
6. Project/Programme Execution cost			$1,964,694
7. Total Project/Programme Cost			$18,716,292
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			$1,757,884
Amount of Financing Requested			22,438,869

Table 10. Projected Calendar

Milestones	Expected Dates
Start of Project/Programme Implementation	January 2027
Mid-term Review (if planned)	January 2029
Project/Programme Closing	December 2030
Terminal Evaluation	October – December 2030

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project/Programme Components

The proposed project is justified by the convergence of three major challenges: escalating climate hazards, rapid and often unplanned urbanization, and institutional and financial capacity constraints that undermine effective adaptation. By addressing these interlinked challenges through a combination of infrastructure, institutional strengthening, and knowledge management, the project provides a comprehensive and cost-effective solution that is aligned with national and international priorities.

Extreme precipitation events are projected to increase in intensity and frequency, while river flows in the Mekong and its tributaries are expected to become more variable[57]. The number of days with rainfall above 50 mm has already doubled in some parts of Lao PDR compared to the 1980s[58]. Combined with deforestation and land degradation in upland catchments, these changes result in more frequent flash floods and landslides, particularly in northern provinces such as Oudomxay and Luang Prabang.

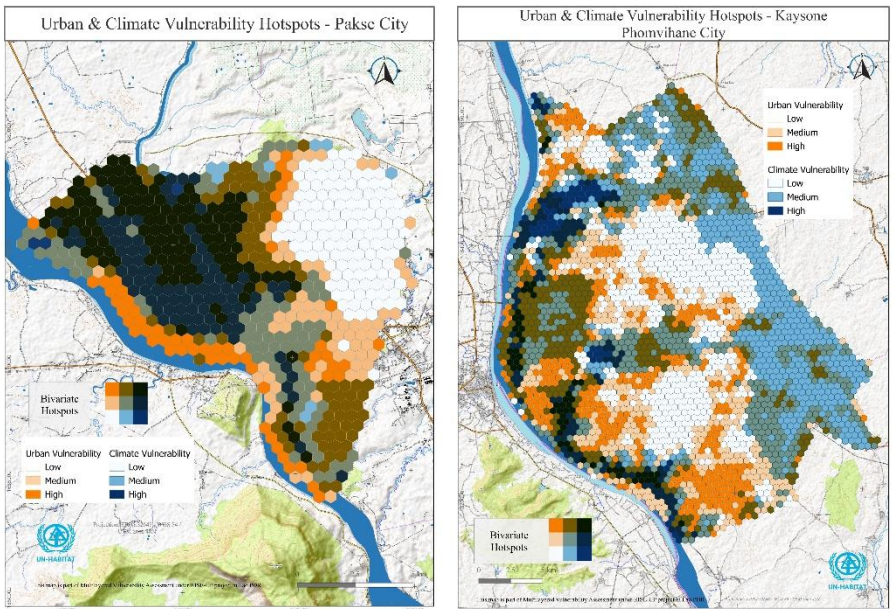
Urban areas are also exposed to secondary risks such as waterlogging, sewage overflow, and contamination of water supplies. Drainage and flood protection systems in most cities are outdated and undersized. Without urgent intervention, climate change is expected to increase flood-related mortality, economic losses, and displacement, undermining the country's development trajectory.

The country's development aspirations, including graduation from Least Developed Country (LDC) status in 2026, depend on safeguarding urban centers that function as economic and cultural hubs. Without investment in resilient urban systems, climate hazards will continue to erode development gains, widen inequalities, and increase the costs of disaster recovery.

Financial constraints are particularly acute. Consequently, adaptation measures that require significant upfront investment are chronically underfunded. The project is therefore justified as it provides financing that would otherwise be unattainable, enabling the country to protect vulnerable populations and assets.

[57] World Bank. 2021. *Climate Change Knowledge Portal – Lao PDR*. Washington, DC.
[58] Government of Lao PDR. 2020. *National Strategy on Climate Change to 2030*. Vientiane.

Figure 6. Urban and Climate Vulnerability Hotspots - Pakse and Kaysone Phomvihane



Source: UN Habitat, 2025

The project focuses on bridging the critical gap between national climate strategies and local implementation. It was conceived in response to the recurrent floods that have severely impacted Lao PDR in recent years, disrupting livelihoods, damaged infrastructure, and set back development progress. A major factor behind these losses has been the inadequate capacity of drainage and flood management systems and the absence of resilient community infrastructure. Schools are often forced to close or are damaged during disasters, depriving children of education and leaving communities without safe spaces for evacuation. Food systems are also disrupted, as the lack of resilient cold storage facilities leads to spoilage of perishable goods, heightening food insecurity and driving up prices. Each flood forces the diversion of scarce national and household resources to response and recovery, delaying development priorities and undermining the achievement of national goals. Figure 6 illustrates the identified vulnerability hotspots, overlaying urban and climate vulnerabilities in Kaysone Phomvihane and Pakse, as identified through UN-Habitat's multilayered vulnerability assessments. By rehabilitating and upgrading drainage networks, stabilizing vulnerable riverbanks, and constructing climate-resilient schools that double as evacuation centers, the project will provide communities with safe, multifunctional infrastructure that protects lives, livelihoods, and education. The introduction of cold storage facilities will safeguard perishable goods and stabilize markets, while capacity strengthening and knowledge management will equip authorities and communities with the skills and systems to sustain these measures. Together, these interventions will deliver integrated, cost-effective resilience in vulnerable urban areas, while embedding climate adaptation into urban planning for the long term.

While the project spans multiple cities and intervention areas, its scope is deliberately structured to remain manageable and implementation-ready. UN-Habitat brings extensive experience in managing multi-city, multi-sector urban resilience programmes through established country presence, standardized implementation procedures, and close collaboration with national and subnational government counterparts. The project builds on existing institutional arrangements, feasibility studies, and partnerships, reducing start-up risks and ensuring implementation readiness.

Implementation will be phased and clustered, and infrastructure investments will be prioritized and sequenced based on readiness, risk levels, and seasonal considerations, while capacity-building, awareness-raising, and knowledge management activities will be implemented in parallel using standardized tools and platforms. This approach allows lessons from early interventions to inform subsequent phases, ensuring adaptive management and quality control.

By combining centralized coordination with decentralized execution through government counterparts, the project balances ambition with operational realism. This phased and coordinated implementation strategy ensures that the scale of the project enhances impact without compromising delivery effectiveness.

There are three components to the project.

Component 1: Strengthening Community and Institutional Capacities for Flood Resilience

Institutional capacity and community preparedness are fundamental to climate resilience in Lao PDR. Despite the presence of comprehensive policy frameworks, their implementation has been constrained by institutional weaknesses at both central and local levels. While these documents provide an important framework, they are often not translated into practice. Provincial and district governments face resource and knowledge constraints, making it difficult to integrate flood resilience into land use planning, building codes, and local infrastructure development. As climate risks become more uncertain and complex, institutional and community capacity to anticipate, plan for, and respond to flooding becomes a critical determinant of vulnerability. Strengthening climate-informed planning, awareness, and knowledge systems reduces maladaptation risks and enables timely, informed decisions under future climate scenarios.

Without strengthening these capacities, critical infrastructure investments will not be supported by a strong enabling environment. By addressing these gaps, Component 1 ensures that the project not only delivers hardware investments but also builds the human and institutional systems required to sustain resilience in the long term.

The component will enhance the ability of national and sub-national authorities to manage climate and flood risks by upgrading digital infrastructure, establishing platforms for data sharing, and introducing user-friendly tools such as dashboards, GIS applications, and mobile apps to support monitoring and regulatory compliance. It will also strengthen early-warning systems by piloting digital communication channels, including SMS and social media alerts, to better reach vulnerable communities.

The following activities will be included in Component 1.

Output 1.1.1: Flood resilience and disaster risk reduction integrated into monitoring and regulatory systems

- 1.1.1.1 Upgrade and expand digital infrastructure (hardware, software, connectivity) within relevant ministries to support climate and flood data management.
- 1.1.1.2 Establish digital platforms to collect, store, and share environmental and disaster risk information between national and sub-national agencies.
- 1.1.1.3 Provide training and mentoring for officials on using digital tools for flood risk analysis and regulatory compliance.
- 1.1.1.4 Establish a Climate Adaptation Innovation Hub as a dedicated learning and demonstration center, equipped with IT infrastructure
- 1.1.1.5 Capacity building workshops and trainings on integrating gender equality/social inclusion (GESI) in urban development at the national and sub-national levels
- 1.1.1.6 Pilot digital early-warning communication systems (SMS, social media, mobile alerts) for communities at risk.

The activities under this component will generate several transformative outcomes. First, the Department of Environment and its provincial and district branches will gain enhanced digital capacity and technical expertise to systematically integrate climate and flood risk considerations into monitoring, permitting, and compliance processes. Through upgraded digital infrastructure, new platforms for data sharing, GIS-based applications, and pilot early-warning systems, authorities will be better equipped to reduce maladaptation and ensure that infrastructure and urban development comply with resilience standards.

Second, the Climate Adaptation Innovation Hub will serve as a dedicated center for learning and demonstration, equipped with IT infrastructure. It will provide a practical platform for testing new tools, supporting policy innovation, and showcasing adaptation solutions that can be scaled nationally.

Third, Component 1 will prioritize gender equality and social inclusion (GESI). Dedicated training programmes will be delivered on incorporating GESI into urban development and resilience planning, ensuring that practitioners address the disproportionate vulnerabilities of women, girls, and ethnic groups to floods and climate hazards. For instance, trainings will highlight the specific sanitation and health needs of girls during emergencies, while digital monitoring guidelines will include provisions for community participation and consultation with vulnerable groups.

Knowledge generated under Component 1 will be sustained beyond the project's lifetime. Training materials will be embedded in government training curricula and guidelines, while digital repositories will

ensure that data and resources remain accessible. By embedding resilience in both regulatory systems and institutional learning processes, the project ensures that capacity gains are institutionalized and continue to shape decision-making and practice in Lao PDR for years to come.

Component 2: Strengthening Urban and Peri-Urban Resilience through Flood Management and Food Systems Infrastructure Development and Rehabilitation

The provision of resilient infrastructure is at the core of the project. By focusing on drainage rehabilitation, riverbank protection, resilient schools, and cold storage facilities, this component addresses the most pressing climate risks affecting urban centers and vulnerable populations. The infrastructure works under Component 2 will significantly reduce the impacts of flooding and related hazards on communities, markets, schools, and public services. Each activity has been designed to be technically robust, socially inclusive, and environmentally sustainable, while responding directly to national priorities.

These interventions are particularly critical in the context of Lao PDR's increasing flood exposure, coupled with financial and institutional capacity constraints that prevent large-scale investments in resilience. The project's support ensures that essential infrastructure is built and upgraded in ways that not only protect people and assets in the short term but also lock in long-term resilience, reducing the need for repeated reconstruction and costly emergency responses. Gender equality, social inclusion, and safeguards will be embedded across all activities, ensuring that women, youth, ethnic groups, and persons with disabilities are able to access and benefit from the infrastructure provided.

The following activities will be included in Component 2:

Output 2.1.1. Drainage and irrigation networks rehabilitated, and climate-resilient cold storage facilities developed in Vientiane Capital.

2.1.1.1 Rehabilitate drainage and irrigation networks to reduce recurrent flooding
2.1.1.2 Develop climate-resilient cold storage facilities to enhance food and water security during disasters in Vientiane Capital.

Output 2.1.2. Thatluang paving and drainage systems upgraded to reduce localized flooding.

2.1.2.1 Upgrade Thatluang paving and drainage systems in Vientiane Capital to reduce localized flooding.

Output 2.1.3. Gravel roads elevated and concrete bridges constructed in Luang Prabang to improve flood protection and connectivity.

2.1.3.1 Construct elevated gravel roads to strengthen flood protection
2.1.3.2 Construct concrete bridges to maintain connectivity and safeguard access during floods.

Output 2.1.4. Drainage systems upgraded in Kaysone Phomvihane City, Savannakhet, for urban flood protection.

2.1.4.1 Upgrade drainage systems for flood protection in Kaysone Phomvihane City, Savannakhet.

Output 2.1.5. Riverbank protection and urban drainage/plumbing upgrades implemented in Pakse City to reduce flood risks.

2.1.5.1 Implement riverbank protection along the Mekong in Pakse City
2.1.5.2 Upgrade urban drainage and plumbing systems to reduce flood risks and safeguard vulnerable communities.

Output 2.1.6. Drainage infrastructure upgraded in Xay District, Oudomxay, to increase capacity and mitigate urban flooding.

2.1.6.1 Upgrade drainage infrastructure to increase capacity and mitigate urban flooding in Xay

District, Oudomxay.

Output 2.1.7. Two model schools constructed in Oudomxay and Thakhek to serve as evacuation centers during floods/disasters.

2.1.7.1 Construct two model schools in Xay District (Oudomxay) and Thakhek (Khammouane) that serve as evacuation centers during flooding and disasters.

Each of these activities contributes to the project's overall goal of protecting lives, livelihoods, and assets while strengthening resilience in highly vulnerable urban areas.

Under projected increases in rainfall intensity and runoff volumes, upgraded drainage systems reduce the frequency, depth, and duration of urban flooding by increasing conveyance capacity beyond historical design thresholds, thereby reducing exposure of households, schools, markets, and critical services under future climate scenarios. Climate-resilient food storage and market infrastructure maintains functionality during more frequent flood events, reducing climate-induced losses along urban food supply chains and constituting a direct adaptation response. As climate change increases peak river discharge and flow velocity, riverbank stabilization measures reduce erosion and structural failure risks, preventing the loss of land, infrastructure, and livelihoods. Elevated flood-prone road sections ensure continued access to essential services and evacuation routes during extreme events, reducing secondary impacts such as isolation, delayed emergency response, and supply chain disruptions. Climate-resilient school infrastructure further reduces damage and service downtime while providing safe evacuation spaces, lowering the vulnerability of children and communities to climate shocks.

The rehabilitation of drainage and irrigation networks, combined with the introduction of climate-resilient cold storage facilities, addresses two critical aspects of resilience in Vientiane Capital. First, drainage upgrades will help mitigate recurrent flooding that disrupts mobility, damages property, and threatens public health. Second, cold storage will reduce post-harvest losses of perishable goods, protecting traders and farmers from income shocks during disasters. This dual intervention ensures that communities are better prepared for both the direct and indirect impacts of floods.

The upgrading of Thatluang paving and drainage systems in Vientiane further reduces localized flooding in one of the most vulnerable neighborhoods. Poor drainage in this area has historically led to repeated waterlogging and property damage during even moderate rainfall events. By improving both paving and drainage, the project reduces the likelihood of recurrent damages and associated recovery costs. This activity also improves urban mobility and reduces the spread of waterborne diseases, contributing to public health outcomes.

In Luang Prabang, elevating gravel roads and constructing concrete bridges will protect critical transportation routes from flood damage. This intervention safeguards mobility and connectivity, ensuring that residents, especially those in peri-urban and low-lying areas, can access markets, schools, and health services even during periods of heavy rainfall. These works will also facilitate emergency response during disasters, as elevated roads and durable bridges reduce isolation of vulnerable villages. By targeting areas with high exposure to flash floods and landslides, this activity protects both economic assets and human lives.

Kaysone Phomvihane City in Savannakhet faces recurrent flooding due to inadequate drainage systems. Upgrading these systems will provide large-scale protection for urban communities, reduce waterlogging, and prevent sewage overflow. This activity will significantly improve living conditions in densely populated neighborhoods, while also reducing economic disruption from damaged property and stalled commercial activities.

Riverbank protection along the Mekong in Pakse City is critical to preventing erosion and displacement of riverside communities. Combined with upgrades to urban drainage and plumbing systems, this intervention will provide integrated flood risk management. Riverbank protection safeguards valuable urban land from erosion, prevents costly relocations, and reduces risks to markets and households located near the river. Upgraded drainage and plumbing will mitigate urban flooding, reduce health risks, and protect livelihoods in one of Lao PDR's most important provincial capitals.

In Xay District of Oudomxay, the project will upgrade drainage infrastructure to increase drainage capacity,

mitigate recurrent urban flooding, and reduce the economic and social costs associated with repeated inundation. By targeting multiple hotspots simultaneously, the project ensures that interventions benefit a wide cross-section of the population.

The construction of two model schools in Oudomxay and Khammouane provinces provides a dual benefit. These schools will be designed as models to withstand climate hazards faced by the northern and southern parts of Lao PDR and will serve as safe evacuation centers during floods. By integrating resilient design and adequate WASH facilities, the schools will reduce the care burdens carried by communities during disasters, ensure continued access to education, and provide safe community shelters.

Importantly, the design and implementation of Component 2 will be guided by environmental and social safeguards. All drainage and riverbank works will follow existing alignments to minimize land acquisition and avoid disturbing local ecosystems and biodiversity. Construction activities will comply with national laws, including the 2019 Land Law and Construction Law. Schools and cold storage facilities will be designed with resource efficiency, ensuring long-term sustainability.

Community engagement will be central to the delivery of Component 2. Consultations will be conducted at the village and district levels to ensure that local knowledge informs design and that vulnerable groups are fully represented. Particular attention will be paid to the needs of women, ethnic groups, and people with disabilities in the design of infrastructure systems. This inclusive approach not only ensures equity but also builds ownership and sustainability of the interventions.

Component 3: Strengthening Knowledge Management Systems for Climate Adaptation Mainstreaming

Component 3 emphasizes the knowledge and learning dimension of the project. While the infrastructure and institutional strengthening investments under Components 1 and 2 directly reduce flood risks, their sustainability depends on the ability of institutions, practitioners, and communities to continuously learn, adapt, and share experiences. Knowledge management is therefore not an add-on, but a core driver of resilience. As climate risks become more uncertain and complex, institutional and community capacity to anticipate, plan for, and respond to flooding becomes a critical determinant of vulnerability. Strengthening climate-informed planning, awareness, and knowledge systems reduces maladaptation risks and enables timely, informed decisions under future climate scenarios.

In Lao PDR, gaps in climate knowledge and awareness continue to constrain decision-making. Urban planning remains largely reactive, with limited consideration of climate change impacts on critical systems such as food security, WASH, and education. Knowledge generated by vulnerability assessments or pilot projects often remains isolated within specific agencies and is not mainstreamed into wider policies. International exchange and South-South cooperation are also limited, despite Lao PDR facing challenges similar to many other least developed and lower middle-income countries. At the same time, the education sector has an important but underutilized role in resilience building. Teacher training guides and curricula have limited content on climate change and disaster risk management, leaving future generations underprepared.

This component addresses these gaps by creating structured opportunities for knowledge creation, dissemination, and integration into policy and planning frameworks. It ensures that lessons from the project will not only benefit the target provinces and ministries but will also strengthen the national knowledge base and position Lao PDR as a contributor to regional and global adaptation dialogues. In parallel, the project will support the Ministry of Education and Sports (MoES) in mainstreaming disaster risk management and climate adaptation into education systems through upgraded ICT infrastructure, digital learning resources, and interactive content integrated into teacher training guides and school curricula. Online modules, e-guides, multimedia materials, and a digital repository will provide accessible resources for teachers, students, and communities, complemented by webinars, workshops, and e-certifications.

The following activities will be included in Component 3:

Output 3.1.1 Knowledge on urban planning for food systems resilience advanced and shared through dissemination of best practices at national and international levels.

3.1.1.1 Develop a guidance note on integrating urban planning for food systems resilience into national and subnational planning frameworks
3.1.1.2 Prepare technical briefs to demonstrate spatial connections between urban growth, flood risks, and food system vulnerabilities.
3.1.1.3 Produce IEC (Information, Education, and Communication) materials (infographics, brochures, short videos) for local authorities and communities on the importance of urban-food system resilience.
3.1.1.4 Capture project activities, results, and lessons learned through annual dissemination workshops with stakeholders and development partners.
3.1.1.5 Document and present best practices at national and international forums, ensuring Lao-specific experiences inform regional/global discussions.
3.1.1.6 Publish community profiles for each target area highlighting resilience initiatives and locally led adaptation practices emerging from the project.

Output 3.1.3 Knowledge products developed to inform climate policies for better flood management

3.1.3.1 Draft a strategy paper on mainstreaming flood resilience into climate policies
3.1.3.2 Compile case studies from pilot interventions showcasing practical approaches to urban flood management and lessons for scaling up.
3.1.3.3 Produce a synthesis report linking project interventions to national adaptation priorities, highlighting alignment with NDC and NAP processes.

Output 3.2.1 M&E framework and indicators developed for tracking climate-resilient urban development at national and sub-national levels with a progress reporting system

3.2.1.1 Develop an M&E framework with standardized indicators for climate-resilient urban development, aligned with national and international reporting systems.
3.2.1.2 Pilot the M&E system in selected cities to validate indicators and reporting processes.
3.2.1.3 Produce baseline, midline, and endline reports to track progress in climate-resilient urban development.
3.2.1.4 Facilitate periodic technical review processes to assess results and systematically document lessons learned for knowledge sharing.

Output 3.3.1: Education materials, including teacher training guides and curricula, revised to incorporate climate change adaptation and disaster resilience.

3.3.1.1 Develop digital learning resources (online modules, e-guides, multimedia materials) on flood resilience and climate adaptation for policy makers and communities.
3.3.1.2 Upgrade ICT infrastructure to enable digital learning delivery.
3.3.1.3 Introduce interactive digital content (e.g., animations, simple simulations) that can be easily integrated into existing curricula.
3.3.1.4 Create a digital repository of climate resilience education materials for educational institutions and communities.

Floods disrupt local markets, transport routes, and supply chains, jeopardizing food availability and livelihoods, particularly for women traders and smallholder farmers. By enhancing awareness and knowledge among planners, engineers, and local authorities, the project will help embed climate-sensitive food systems thinking into resilience initiatives and infrastructure projects.

Equally important is the systematic documentation and dissemination of knowledge. The project recognizes that resilience-building is a collective process, and the project's experiences should inform both national debates and international dialogues. Lessons learned from infrastructure design, institutional capacity building, and community engagement will be shared at events such as the Lao National Urban Forum, ASEAN working groups on urban resilience, and regional platforms supported by UN-Habitat and partners. This will not only enhance the visibility of Lao PDR's progress but also allow the country to benefit from comparative learning with other contexts. Special attention will be placed on capturing gender-responsive practices, ensuring that knowledge generated by the project contributes to advancing global agendas on gender equality and climate resilience.

The component also emphasizes the production of knowledge products to inform policy and practice. The products will be co-produced with government counterparts to ensure ownership and relevance. By embedding the materials into existing institutional channels, the knowledge generated will have a lasting impact beyond the life of the project.

In addition, this component will establish a monitoring and evaluation (M&E) framework with standardized indicators to systematically track progress in climate-resilient urban development. The framework will generate baseline, midline, and endline data, while periodic reflection sessions will ensure that findings are translated into actionable lessons. By embedding structured reporting and learning processes, the project will create an evidence base that strengthens adaptive management and supports knowledge sharing at both national and international levels.

The component will also help the education sector to be positioned as a driver of resilience. By upgrading ICT infrastructure and integrating interactive digital learning resources into teacher training guides and curricula, disaster preparedness and climate adaptation will be embedded in the education system.

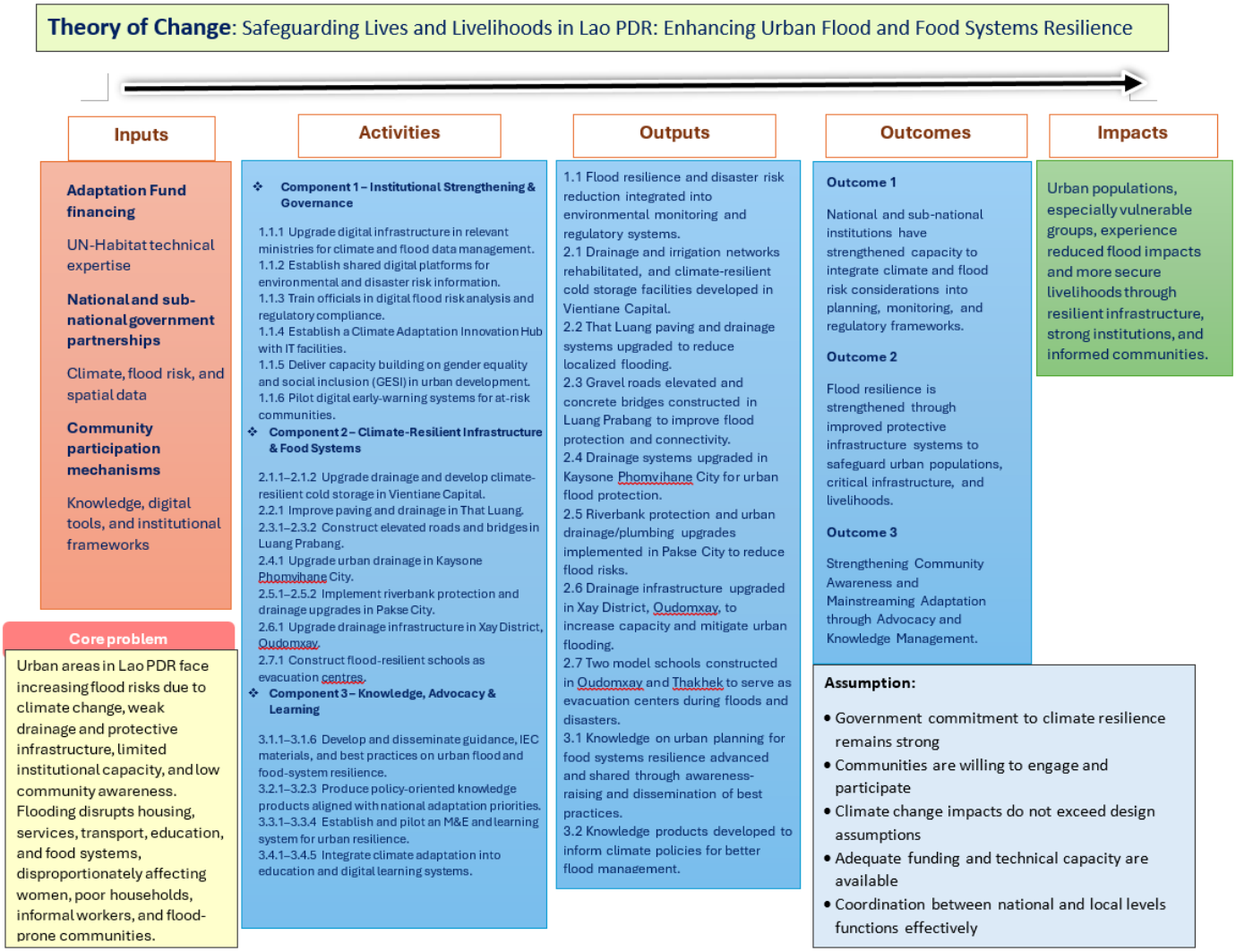
The aim of this component is to create a knowledge legacy that will support Lao PDR's climate adaptation trajectory, strengthen institutional memory, and foster continuous learning. This component also contributes directly to the Adaptation Fund's emphasis on knowledge management and South-South cooperation, positioning Lao PDR as both a recipient and a provider of adaptation insights.

Table 11. Climate Rationale by Components

Components	Rationale for Selected Approach	Alternatives considered and justification
Component 1: Strengthening Community and Institutional Capacity for Flood Resilience	This component addresses climate risk by strengthening the ability of institutions and communities to plan for, manage, and adapt to flood hazards under future climate conditions. Improved technical capacity, coordination mechanisms, and community preparedness are essential to ensure that flood risk management measures are informed by climate projections rather than historical patterns. Strengthening institutional capacity enables authorities to integrate climate risk into urban planning, infrastructure design, and emergency response, while community-level capacity building enhances early action, preparedness, and risk awareness.	Reliance on centralized response mechanisms or post-disaster emergency interventions alone was considered insufficient, as such approaches are reactive and increasingly overwhelmed by the scale of climate-related flooding. Standalone infrastructure investments without institutional strengthening risk maladaptation, poor maintenance, and limited sustainability. Strengthening both community and institutional capacity therefore represents a necessary and cost-effective adaptation measure that enables other project investments to function effectively under future climate conditions.
Component 2: Strengthening Urban and Peri-Urban Resilience through Flood Management and Food Systems Infrastructure Development and Rehabilitation	This component focuses on strengthening the resilience of critical urban systems that are highly sensitive to climate impacts. Flood management infrastructure, including drainage and related works, directly addresses increased runoff volumes and prolonged inundation resulting from climate change. Food systems infrastructure, such as climate-resilient storage facilities, reduces climate-induced losses, stabilizes supply chains, and protects livelihoods during flood events. The combined focus reflects the interconnected nature of climate risks in urban settings, where flooding disrupts not only physical assets but also essential services and economic activities. By rehabilitating and upgrading existing infrastructure to withstand projected climate conditions, the project reduces exposure, minimizes damage, and enhances the adaptive capacity of urban and peri-urban systems.	Alternative approaches such as repeated emergency repairs, temporary flood protection measures, or reliance on food assistance following disasters were considered but found to be inadequate under future climate scenarios. These approaches address short-term impacts rather than underlying vulnerability and result in recurring losses. Relocation of markets or communities was also considered impractical and socially disruptive. The selected approach provides a durable, forward-looking adaptation solution that reduces climate risk while delivering everyday development benefits.
Component 3: Strengthening Community Awareness and Mainstreaming Adaptation through	This component strengthens climate adaptation by ensuring that knowledge generated through the project is captured, disseminated, and used to inform policy, planning, and practice. Advocacy and knowledge management activities support the mainstreaming of adaptation into urban development,	Ad hoc awareness-raising or isolated training activities were considered insufficient, as they do not lead to sustained behavioral or institutional change. Similarly, focusing solely on infrastructure without embedding learning mechanisms limits scalability and long-term

Advocacy and Knowledge Management	education, and community decision-making processes. By improving access to climate risk information and practical adaptation lessons, this component enhances the capacity of stakeholders to make informed decisions under climate uncertainty.	impact. A structured approach to advocacy and knowledge management ensures that adaptation benefits extend beyond the project's geographic scope and duration, supporting replication and scaling under future climate conditions.

Theory of Change



If national and local institutions are strengthened to integrate flood and climate risks into planning and regulation, and if climate-resilient infrastructure is built in flood-prone urban areas, and if communities, schools, and policy actors are empowered through knowledge, advocacy, and learning systems, then urban flood risks will be reduced, food systems will be more secure, and livelihoods, especially of vulnerable groups, will be better protected.

This will lead to safer, more resilient cities in Lao PDR where people can live, work, learn, and access food even under increasing climate pressures, contributing to sustainable development, poverty reduction, and climate adaptation.

B. Economic, Social and Environmental benefits

The proposed project will deliver substantial economic, social, and environmental benefits to Lao PDR, with a strong focus on urban areas where vulnerabilities to climate change are most acute. Flooding has

long been the most frequent and damaging hazard in the country, and urban centers such as Vientiane, Kaysone Phomvihane, Luang Prabang, Pakse, Xay, and Thakhek face recurrent and increasingly intense inundations that disrupt livelihoods, public services, and economic activity. By investing in flood protection infrastructure, the project directly reduces economic losses, recurrent damage and service disruptions while protecting the foundations of the national economy.

The economic benefits are multidimensional. By rehabilitating drainage and irrigation systems, the project safeguards dense residential and commercial areas, reducing damage to housing, markets, and small businesses that form the foundation of urban livelihoods. Upgrading drainage ensures that floods no longer paralyze urban trade and services, sectors that are critical for livelihoods and employment. Elevating roads and rehabilitating bridges in Luang Prabang maintain year-round connectivity for thousands of residents, while also protecting access to the province's heritage tourism economy, which supports a large share of local employment and is a major contributor to foreign exchange earnings. Riverbank protection in Pakse safeguards valuable urban land from erosion and prevents costly relocations of riverside communities. The introduction of cold storage facilities in Vientiane reduces post-harvest losses of perishable goods, protecting farmers, traders, and consumers from food insecurity and volatile prices during flood events. Climate-resilient schools that also function as evacuation centers reduce disaster response costs while safeguarding education and community well-being during and after extreme weather events. These investments together not only prevent recurring economic losses but also strengthen productivity, protect human capital, and reduce fiscal pressure from loss and damage while supporting Lao PDR's broader development goals, including the achievement of upper-middle income status by 2030[59].

Table 12. Losses for Target Provinces (Lao Disaster Information database)

Province	Total Recorded losses (USD) 2022
Vientiane	496,358,761
Savannakhet	247,724,500
Champasack	70,700,309
Luang Prabang	23,078,176
Oudomxay	89,922,372
Khammuane	693,447,795

It is expected that the project will significantly reduce disaster-related losses by upgrading climate-resilient urban drainage, roads, bridges, schools serving as evacuation centres, and food storage infrastructure; by integrating climate risk information into urban planning and asset management; and by strengthening institutional capacity, monitoring systems, and knowledge management to support sustained flood risk reduction.

At the household level, the project protects the livelihoods of the urban poor, who are often the most affected by floods due to their reliance on daily wage labor and informal economic activities. Recurrent flooding frequently destroys inventories, tools, and goods of small vendors, pushing them deeper into poverty. Construction activities also generate employment opportunities during implementation, providing much-needed income for vulnerable households.

The social benefits of the project are equally significant. Flooding consistently disrupts essential services such as health and education, with schools forced to close when access roads are washed out or classrooms are inundated. These disruptions disproportionately affect low-income households that lack alternative schooling or transport options. In Luang Prabang, the elevation of roads and bridges will ensure that children can continue attending school year-round, even during the rainy season. Improved access to health centers reduces the risks for vulnerable populations, including pregnant women and the elderly, who often face life-threatening delays in reaching care during floods. In Vientiane and Pakse, improved drainage reduces stagnant water and thereby lowers the incidence of waterborne diseases such as diarrhea, cholera, and vector-borne diseases like dengue fever. Climate-resilient schools that also serve as evacuation centers will strengthen community safety nets, providing families with secure spaces that foster cohesion and social resilience during disasters.

[59] UN DESA. 2018. *World Urbanization Prospects: 2018 Revision*. New York.

The proposed infrastructure interventions go beyond standard development by incorporating future climate risk considerations rather than only relying on historical hydrological data. Design standards for bridges, elevated roads, paving, and drainage systems will be informed by projected increases in rainfall intensity, peak river discharge, and flood recurrence intervals under climate change scenarios. Drainage systems will be sized to accommodate higher runoff volumes associated with more frequent extreme rainfall events, while road elevations and bridge deck levels will be set above projected future flood levels to ensure year-round connectivity under intensified flooding conditions. By explicitly integrating climate projections, safety margins, and adaptive design features, the proposed works constitute targeted adaptation measures that reduce exposure, avoid maladaptation, and enhance resilience.

The proposed interventions generate long-term adaptation outcomes by combining climate-resilient infrastructure investments with institutional learning and systems strengthening. Climate-informed upgrading of drainage, roads, bridges, and food system infrastructure reduces recurrent flood damage, service disruptions, and asset losses under projected future flood conditions, thereby avoiding repeated reconstruction costs and strengthening environmental resilience over time. These physical investments are reinforced through institutional capacity building, integration of climate risk into urban planning and asset management, and strengthened early warning and decision-making systems, ensuring that knowledge, tools, and practices developed under the project continue to inform public investment and risk management beyond the project lifetime. Together, these measures enhance the durability, scalability, and sustainability of adaptation benefits. Economically, the proposed flood-resilient infrastructure is expected to reduce damage to housing, markets, roads, and food storage facilities in flood-prone urban areas, contributing to avoided losses during extreme rainfall and flood events. Based on historical flood impacts and population exposure in target cities, the interventions are estimated to protect critical assets and livelihoods serving approximately 239,200 direct beneficiaries.

Gender equality is a central dimension of the proposed interventions. Women in Lao PDR continue to face systemic barriers in education, employment, and decision-making, and climate change compounds these inequalities. They shoulder disproportionate responsibility for caregiving and household water management, which becomes much more difficult during floods. Women are also heavily engaged in informal food and retail markets and bear the burden of securing food and water for families during disasters. The project will directly benefit women by reducing the burden of managing household resources during disasters, stabilizing incomes through resilient markets, and ensuring that women are actively involved in planning and monitoring at community and municipal levels. Gender-disaggregated monitoring, quotas for participation in training, and targeted awareness campaigns will ensure compliance with the Adaptation Fund's Gender Policy and amplify women's leadership and agency in locally led adaptation.

The project also strengthens social inclusion by addressing the needs of ethnic groups, youth, and marginalized groups. Lao PDR has 49 officially recognized ethnic groups, and minority women are often excluded from decision-making[60]. The project's participatory planning processes will ensure that these groups are engaged in resilience action planning and benefit equally from project interventions. Youth engagement in consultations and awareness campaigns will build a generation of climate-aware citizens and contribute to long-term adaptive capacity and sustainability of adaptation outcomes.

The environmental and climate co-benefits are also embedded in the design. By reducing post-harvest losses through cold storage, the project avoids emissions associated with wasted food, which account for significant shares of global greenhouse gas emissions, while improving food security during climate shocks. Improved urban planning and drainage reduce reliance on energy-intensive recovery and reconstruction by preventing repeated damage to infrastructure and assets. Together, these interventions position Lao PDR to advance both adaptation and mitigation goals in line with its national priorities.

The project is fully aligned with the Adaptation Fund's Environmental and Social Policy (ESP) and Gender Policy. All interventions will undergo environmental and social screening to ensure that potential adverse impacts are identified and mitigated in accordancr eith ESP risk management requirements. Rehabilitation and upgrading of drainage systems will focus on existing alignments to avoid disturbing local ecosystems and biodiversity. Where riverbank stabilization is undertaken, environmental impact assessments will guide design to prevent unintended ecological disruption and promote nature-positive solutions where feasible. In Luang Prabang, where interventions intersect with UNESCO heritage areas, safeguards will ensure that cultural assets are preserved in line with national regulations and UNESCO guidelines. Gender

[60] Lao Statistics Bureau. 2015. *Population and Housing Census*. Vientiane.

considerations are mainstreamed throughout the project cycle, with sex-disaggregated indicators, targeted support for women's groups, and mechanisms to ensure that women, youth, and ethnic groups participate equally in planning and monitoring. Construction of climate-resilient schools will follow environmentally sound practices to minimize pollution, safeguard local ecosystems, and promote sustainable resource use during both construction and operation phases.

In terms of transformative potential, the project goes beyond one-off interventions to create systemic, transformative change in how climate risks are addressed in urban planning, infrastructure investment and service delivery. The benefits extend well beyond the project cities, as lessons will be disseminated through national and international channels and translated into practical guidance, tools, and policy-relevant recommendations to be integrated into development planning. The co-benefits for health, education, gender equality, biodiversity, and climate mitigation ensure that the project contributes to multiple Sustainable Development Goals simultaneously, including SDG 1 (poverty reduction), SDG 2 (food security), SDG 3 (health), SDG 5 (gender equality), SDG 11 (sustainable cities), SDG 13 (climate action), and SDG 15 (life on land). Collectively, the proposed activities directly support the Adaptation Fund's Strategic Objectives by reducing vulnerability of urban and peri-urban populations to climate-induced flooding (Strategic Objective 1) and by strengthening institutional, technical, and community-level adaptive capacity to manage current and future climate risks (Strategic Objective 2). Infrastructure investments under Component 2 contribute to Outcome 1 (Reduced exposure to climate-related hazards and threats) and Outcome 4 (Increased adaptive capacity within relevant development sector services and infrastructure assets) by upgrading drainage, transport, and food systems infrastructure to withstand projected future flood levels rather than historical climate conditions. Components 1 and 3 reinforce these physical investments by contributing to Outcome 2 (Strengthened institutional capacity to reduce climate-related losses) and Outcome 3 (Strengthened awareness and ownership of adaptation and climate risk reduction processes), through capacity development, early warning systems, knowledge management, and education-based resilience building. Together, these interventions deliver concrete adaptation benefits while embedding climate resilience into urban systems in a sustainable and scalable manner.

Table 13. Direct and Indirect Beneficiaries

	Target areas	Particulars	Beneficiaries
Direct Beneficiaries 432,960 (52% female)	**Vientiane**	Residents directly benefiting from improved drainage and flood resilience measures Residents served by cold storage facilities	55,200
	Pakse	Residents located near rehabilitated urban drainage and flood protection sites	88,300
	Kaysone Phomvihane	Residents residing in neighborhoods adjacent to drainage rehabilitation and flood mitigation works	125,760
	Muang Xay	Primary school students who attend the school Community members located near upgraded schools serving as evacuation centres Urban residents benefiting from improved flood safety	25,000
	Luang Prabang	Residents located in close proximity to drainage and flood protection interventions	47,400
	Thakhek	Primary school students who attend the school Community members located near upgraded schools serving as evacuation centres	91,300
Indirect Beneficiaries 664,900 (50% female)	**Vientiane**	Residents within the wider urban drainage catchment benefiting from reduced flood risk	150,000
	Pakse	Residents within the wider urban drainage catchment indirectly benefiting from improved service continuity	132,450
	Kaysone Phomvihane	Residents within the wider urban area with improved access	136,900
	Muang Xay	Urban residents benefiting from improved drainage functionality	37,500
	Luang Prabang	Residents within the wider urban area benefiting from reduced flood impacts	71,100
	Thakhek	Residents with access to evacuation facilities	136,950

While precise asset-level loss data vary by location, national post-disaster assessments in Lao PDR show that major flood events have caused total economic damages in the hundreds of millions of dollars, with the 2018 floods resulting in an estimated US$371 million in damage and losses across housing,

infrastructure, productive sectors, and services[61].

Historical analyses also indicate that floods have affected approximately 200,000 people per year on average over past decades, underscoring recurring economic and social impacts of flood events[62].

In 2024, preliminary government estimates of flood damage exceeded LAK 6 trillion (about USD 276 million) across multiple provinces[63].

The project is expected to directly benefit approximately 432,000 people across the six target urban centers, with women and girls accounting for an estimated 52 percent of direct beneficiaries. Direct beneficiaries include residents of flood-prone urban and peri-urban areas benefiting from climate-resilient infrastructure; and students, teachers, and surrounding communities benefiting from climate-resilient schools that also function as evacuation centers; and government officials and community representatives receiving capacity-building support. in Vientiane, improved cold storage facilities are estimated to support emergency seed and food storage for approximately 1,000 households (5,000 people) per storage unit, reducing post-harvest losses during flood events and stabilizing food supply and prices. These measures collectively enhance productivity, reduce fiscal pressure from repeated emergency response and reconstruction, and protect critical economic assets under projected future flood conditions. In addition, an estimated 664,900 people are expected to benefit indirectly from improved urban flood management, reduced service disruptions, strengthened food system resilience, and enhanced institutional capacity at local and national levels. Beneficiary estimates are indicative and will be refined during project formulation and baseline assessments.

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C. Cost-Effectiveness

The proposed project demonstrates a high degree of cost-effectiveness by focusing on interventions that prevent recurrent and escalating losses from floods, while maximizing co-benefits for livelihoods, health, and the environment over the full life cycle of infrastructure investments. Alternative options, such as repeated emergency repairs, dredging without structural upgrades, or reliance on post-disaster humanitarian assistance, were considered but found to be less cost-effective. These approaches address symptoms rather than underlying climate risks and result in recurrent expenditures following each flood event. In contrast, climate-resilient drainage systems, elevated roads, reinforced riverbanks, and multipurpose schools reduce repeated damage, minimize service disruptions, and lower long-term public expenditure on disaster response and infrastructure rehabilitation.

The integration of food systems resilience, particularly through cold storage facilities, further enhances cost-effectiveness by preventing post-harvest losses and income shocks that would otherwise require social protection or emergency food assistance. Multipurpose infrastructure, such as schools that also serve as evacuation centers, maximizes the return on investment by delivering everyday development benefits while providing critical protection during disasters.

Institutional capacity-building and knowledge management components complement physical investments by ensuring that infrastructure is properly planned, operated, and maintained. This reduces the risk of maladaptation and safeguards public investments over time by embedding climate risk considerations into routine planning and decision-making processes. Taken together, the combination of hard and soft adaptation measures offers a high benefit-to-cost ratio by reducing future climate-related losses, safeguarding livelihoods, and minimizing the need for repeated reconstruction. A detailed cost-benefit analysis will be conducted during the development of the full proposal.

Cost-effective use of local entities
Implementation of the infrastructure activities will be carried out in close cooperation with local executing entities such as provincial Departments of Public Works and Transport and municipal governments. This approach reduces transaction costs by eliminating the need for external contractors to lead all activities and shortens implementation timelines through the use of existing institutional arrangements. Local institutions are familiar with the terrain, community needs, and administrative procedures, allowing for more

[61] Government of Lao PDR, World Bank, Asian Development Bank, and United Nations. 2019. *Lao People's Democratic Republic: Floods, Landslides and Tropical Storms – Post-Disaster Needs Assessment (PDNA).* Vientiane
[62] World Bank and Global Facility for Disaster Reduction and Recovery (GFDRR). 2016. *Lao PDR Disaster Risk Financing Diagnostic: Assessing Financial Preparedness Against Natural Disasters.* Washington, DC.
[63] Government of Lao PDR. 2024. *Preliminary Assessment of Damages and Losses from Natural Disasters in 2024.* Vientiane.

efficient and cost-effective delivery and mitigation of risks of design inefficiencies or implementation delays. At the same time, involving organizations such as the Lao Women's Union and Lao Youth Union in training and awareness-raising avoids duplicative outreach structures and ensures efficient engagement of target groups.

In-house technical expertise
UN-Habitat has extensive in-house expertise in resilient infrastructure design, urban planning, and community-based adaptation. The Lao PDR country office has implemented multiple infrastructure and adaptation projects, and benefits from technical backstopping from the Regional Office for Asia and the Pacific and Headquarters teams. This reduces reliance on external consultants, which are often one of the largest costs in project implementation. Expertise in adaptation and flood management has been strengthened in recent years, ensuring that the project will benefit from proven, scalable technical approaches and standardization methodologies at lower cost. This arrangement also ensures that technical capacity is simultaneously transferred to executing agencies, leaving long-term benefits within the sector, supporting sustained operation and maintenance beyond the project period.

Strong partnerships
The project builds on long-standing partnerships with national and provincial institutions, including the Ministry of Agriculture and Environment and the Ministry of Education and Sports. Because of these established relationships, project implementation will not require the establishment of new field offices or parallel structures. Instead, resources will be channeled through existing systems, institutional frameworks, and coordination mechanisms, keeping administrative and operational costs to a minimum.

Building on previous and current projects
The project leverages outputs from UN-Habitat's current and previous work in Lao PDR, for example the RISE-UP: Resilient Settlements for the Urban Poor programme, which works on understanding local multi-layered risks and vulnerabilities to develop bankable climate action projects for urban communities. Training manuals, guidelines, and technical standards developed under earlier initiatives will be reviewed and adapted where necessary to identify and deliver best practices for this project. Many officials at provincial and district levels have already participated in earlier training sessions, creating opportunities for peer-to-peer learning and knowledge transfer. This reduces the cost of capacity-building activities and enhances effectiveness by building on existing foundations.

Efficient infrastructure design and construction
UN-Habitat has successfully delivered high-quality, climate-resilient infrastructure at competitive costs in previous projects. Designs for the proposed interventions will be adapted to local conditions, cultural preferences, and available materials, ensuring both appropriateness and cost efficiency. Design choices will also facilitate ease of maintenance by local authorities and reduce long-term operational burdens. For example, drainage and riverbank protection systems will use solutions that help reduce material and maintenance costs through durable, low-maintenance designs and, where feasible, nature-positive approaches. Cold storage facilities will employ energy-efficient designs, lowering operational expenses over time and reducing overall lifecycle costs. The project will be guided by cost-effective principles, ensuring that resources are utilized efficiently to achieve the greatest possible impact.

Without Adaptation Fund financing, the proposed investments are unlikely to be implemented at the required scale or in a climate-informed manner. Public resources in Lao PDR are constrained by fiscal pressures, and subnational authorities rely heavily on limited annual budgets that prioritize emergency response and basic service provision over preventive adaptation investments. As a result, urban flood risks are currently managed through reactive measures such as emergency repairs, temporary drainage clearance, and post-disaster recovery, which do not address the increasing intensity of climate hazards. These approaches absorb scarce public resources without reducing long-term exposure or vulnerability or enhancing adaptive capacity.

With Adaptation Fund support, the project shifts investment from reactive response to proactive, climate-resilient solutions by upgrading critical infrastructure, strengthening institutional and community capacity, and embedding climate risk considerations into urban planning and decision-making. This integrated approach reduces future losses, safeguards public assets, and delivers sustained adaptation benefits that outweigh upfront costs. Adaptation Fund financing is therefore catalytic in breaking the cycle of recurrent flood damage and enabling cost-effective, long-term resilience in Lao PDR's urban systems.

The project is fully aligned with the Adaptation Fund's strategy for maximizing impact by addressing the six enabling conditions outlined in the Medium Term Strategy 2023-2027. It supports locally led, participatory adaptation actions with community engagement and inclusion of vulnerable groups; strengthens access to climate finance and local capacity for municipal authorities, women, youth, and ethnic minorities; addresses novel adaptation challenges and delivers co-benefits across flood protection, food systems, health, education, and biodiversity; fosters innovation and risk-taking through nature-based solutions, climate-resilient infrastructure, and multipurpose facilities; enhances learning and scalability by documenting lessons, sharing knowledge, and developing replicable technical standards; and strengthens partnerships with government and civil society for coherent and sustainable implementation. Collectively, these elements make the project catalytic, delivering systemic, long-term adaptation benefits beyond the target cities.

D. Alignment with National or Sub-national sustainable development strategies

The project is fully consistent with Lao PDR's national and sub-national sustainable development strategies and contributes directly to the implementation of key adaptation priorities. The Government of Lao PDR has established a comprehensive policy framework for climate change and resilience, but significant gaps remain in terms of financing, institutional capacity, and localized implementation. The project bridges these gaps by targeting flood resilience in the most vulnerable urban areas while strengthening institutions and knowledge systems at national and local levels.

The project is directly aligned with the National Adaptation Programme of Action (NAPA, 2010), which identified urgent adaptation needs in water resources, agriculture, forestry, and human health. Among its priority activities was the improvement of drainage and flood protection in urban centers, a measure that remains largely unmet due to limited resources. By upgrading urban drainage systems, the project responds to this longstanding priority while integrating adaptation measures for sustainability.

The project also supports the priorities outlined in the National Adaptation Plan (NAP, 2025). The NAP emphasizes mainstreaming adaptation into urban planning, strengthening institutions at provincial and district levels, and addressing vulnerabilities of the urban poor. The components of the project on institutional and community capacity-building directly contribute to this vision by enhancing institutional anchoring and capacity to integrate climate risk into their operations. The project's focus on vulnerable communities and gender equality also reflects the NAP's emphasis on inclusive adaptation.

The project is consistent with Lao PDR's Nationally Determined Contribution (NDC, 2020), which sets clear priorities for adaptation, including: (i) strengthening flood management and water resources, (ii) building resilient urban infrastructure, (iii) enhancing food security. The proposed project directly addresses these priorities through drainage and riverbank protection (flood management), resilient roads and bridges (urban infrastructure), cold storage facilities (food security). By doing so, the project enhances Lao PDR's ability to deliver on its international climate commitments under the Paris Agreement.

The 9th National Socio-Economic Development Plan (NSEDP, 2021–2025) provides the overall development framework, with Outcome 4 explicitly targeting environmental protection and climate resilience. Activities under Outcome 4 include mainstreaming climate change into sectoral and local development plans, accelerating nature-based solutions, and ensuring equitable access to resources for vulnerable populations. The project contributes directly to these objectives by combining resilient infrastructure, engaging vulnerable communities in planning, and ensuring that benefits reach women, youth, and marginalized ethnic groups. By reducing disaster risks in major urban centers, it also supports the NSEDP's broader objectives of inclusive and sustainable economic growth, poverty reduction, and progress toward graduation from LDC status in 2026.

The project is aligned with the National Green Growth Strategy (2019), which highlights climate-resilient urbanization as a pillar of sustainable development. By promoting resilient infrastructure and improved urban governance, it strengthens the Strategy's objective of harmonizing growth with environmental sustainability. Similarly, it supports the Urban Development Vision to 2030, which seeks to enhance the livability and resilience of Lao cities, by reducing flood risks and ensuring continuity of essential services such as markets, schools, and health centers.

At the sub-national level, it builds on provincial development plans and vulnerability assessments, which consistently identify flooding as the top priority hazard. In Savannakhet, for example, repeated drainage

failures have been flagged as a critical challenge to urban resilience, while in Luang Prabang, the loss of road connectivity during floods has been highlighted as a barrier to social and economic development. By financing interventions that provincial governments cannot cover with existing budgets, it addresses the implementation gap between national strategies and local realities.

Table 14. Links to development and climate change planning

9th NSEDP (2021 – 2025)	
Outcome 4: Environmental Protection and Natural Disaster Risk Reduction	Output 1: Sustainable natural resource use and management
	Output 2: Green growth and climate change actions management Urban planning: Developing clean, beautiful, green and liveable cities […] by paying attention to urban design and development, urban building construction in municipal areas of provinces, districts and communities with an aim for having green, liveable, and arts […] that have climate resilient infrastructures; (p.42)
	Output 3: Enhance prevention, control and post-disaster recovery Climate change adaptation: Systematically mainstream climate change adaptation and natural disasters mitigation measures into sectoral and local development plans… (p.43)
Outcome 5: Robust infrastructure development, utilisation of the country's potential and strategic location, and active engagement in the regional and international cooperation and integration	Output 4: Developed urban and special economic zone to become a production, investment, trade and tourism base to enable regional and international integration Urban infrastructure: Continue to improve and build drainage and flood protection systems in cities […] to ensure that cities have a good ecosystem and resilience to climate change (p.49);
Gender: the 9th NSEDP has recognized that the effective participation of women, especially poor and ethnic women, is essential for Lao PDR to achieve its goals of poverty reduction and improved living standards.	
National Adaptation Plan (2025)	
Public Works and Transport	
Strategy 1: Development of resilience infrastructure to prevent climate change impacts.	Objective 1: Strengthen the resilience and adaptability to climate change of infrastructure, ensuring that infrastructure is built and maintained to a standard that is resilient to the effects of climate change.
Strategy 2: Development of smart city plans with environmentally friendly, and urban settlements, public works and transportation to be resilient to climate risks and disasters.	Objective 1: Promote the management, implementation, and development of the city in accordance with the sustainable urban plan and improve public investment and financial management Objective 3: Develop and improve infrastructure and urban environment as well as residential facilities and crowded community areas.
Strategy 3: Developing road-bridge and transport sectoral works to be effective, resilient to climate change, safe and sustainable.1	Objective 3: Develop and improve infrastructure and urban environment as well as residential facilities and crowded community areas.
Labour and Social Welfare	
Strategy 1: Develop and strengthen prevention, risk reduction and disaster preparedness systems	Objective 4: To build and restore infrastructure to be resilient to disasters and to strengthen people and community capacity that or are vulnerable, such as: disabled people, children, the elderly, pregnant women or mothers with young children.
National Adaptation Programme of Action (NAPA) (2010)	
Objectives for 2020: 3. Ensure that Lao PDR has sufficient regulations and laws to mitigate the impacts of disasters on individuals, communities, society and the economy of the country. 4. Ensure that knowledge about disaster management and environmental protection is in line with, and integrated into, all development issues and that general public awareness is raised	
Climate Change Action Plan (2013)	
Mainstream climate change into sector policies, strategies and development plans p. 5 Conduct climate risk audits for key infrastructure services; p11 Promote awareness on climate change and related environment and disaster management for officials at all government levels; p17	
Nationally Determined Contribution (NDC) 2020	
Long-term: Increase the resilience of urban development and infrastructure to climate change 2025 Shorter Term Target: Transport and Urban Development: Develop sectoral adaptation strategy and action plan including results-based management framework	
10 years Strategic Plan for Urban Development (2016)	
Overviews 1) Prioritise level of city in the country to be developed. Layout the vision of the urban development plan at all district and city level; ensuring the implementation follows the plans. 5) Strengthen capacity building of staff in the central and local for service delivery, encourage participation from various stakeholders during the planning and implementation.	

General Achievement Targets 1) Urban development plan should be prepared by all cities. 3) In each individual province, try to promote 1 or 2 districts that have high potential for social economic or social security. 4) The government should ensure citizens have access to proper housing, basic sanitation facility, and show willingness to participate in development. 5) Ensure 148 districts in Lao PDR follow the urban development plan and legislation in in managing the land use and housing system. Specific Achievement Targets Urban Planning: 3) Prepare detailed design for the new city to be aligned with concept of being green city, environmental sustainability, climate resilience – to be achieved over 50% by 2025. 4) Prepare detailed design by applying the participatory approach and integrated land use planning through efficiently use of natural resources – to be achieved over 80% by 2025. Capacity Strengthening for Urban Development 1) Develop system where policy, legislation relates to urban planning are in place, particularly, housing law, land use urban planning regulation, construction management, environmental protection in urban area. 2) Improve the capacity building of central and local staff in planning, monitoring and evaluation. 4) Enhance capacity of local staff to enable them to manage city development plan and implementation. Encourage gender equality. 5) Strengthen coordinating mechanism between the ministry, sectors, provincial and district levels to align with government decentralized policy. Working Plan 3: Urban Housing Development Review national policy, improve quality of accommodation, sanitation and security Develop quality control system to monitor construction/structure quality
Natural Resources and Environment Strategy, (2016)
2.1. Promote the implementation of land use master planning and ISP [Integrated spatial planning] in the sustainable improvement and development of cities and rural areas; 3.1. Mainstreaming climate change adaptation and mitigation and disaster management into relevant sector policies, program and action plans; 3.2. Implement research programs to study and disseminate the updates climate change scientific data and develop maps of vulnerable and high-risk disaster areas to support in policy and strategy planning, national socio-economic development plans of line sectors at central and local levels and for people livelihood; 3.3. Implement public awareness raising programs on climate change and related impacts to ensure the effective use of local resources, appropriate governance arrangements and community participation in CC adaptation and disaster management and prevention. 3.4. Implement effective and efficient disaster protection and prevention measures and management system including preparedness, warning, protection, rescue, recover and rehabilitation systems, to ensure the protection and relocation of people and valuable assets in time.

E. National Technical Standards

The project will fully comply with relevant national technical standards and adhere to the Adaptation Fund's Environmental and Social Policy. Moreover, the project will comply with national Environmental Impact Assessment (EIA) legislation. Under the revised EIA Decree (No. 21/GOL, 2019) and the Environmental Protection Law (No. 29/NA, 2012), certain activities or projects classified as high impact will require either an Initial Environmental Examination (IEE) or a full EIA. As per the list of projects subject to EIA mentioned in the guidelines, none of the proposed activities require an EIA by national law. IEE will also not be required except for public buildings and evacuation centers. However, an approved ESMP will be submitted as part of the full proposal. All assessments will include public participation, including engagement with women, ethnic groups, and vulnerable populations, in line with Lao requirements.

In accordance with the 2019 Land Law (Ordinance 003) and the Construction Law, all project-related construction activities will be subject to the formal permitting process, ensuring that works are reviewed and approved by the relevant authorities. Compliance with these requirements guarantees that land use, safety, and regulatory standards are upheld. Furthermore, all construction will align with the draft Building Code prepared by the Ministry of Public Works and Transport (MPWT), which incorporates technical standards for structural integrity, safety, and environmental considerations.

More details on relevant rules, regulations, standards and procedures for proposed project activities (for each component or output), including process to comply and authorizing offices, will be provided during the full proposal development phase.

Table 15. Relevant rules, regulations, standards and procedures

Project component	Relevant rules, regulations, standards and procedures	Compliance, procedures and authorizing offices

1	Related to capacity building - Lao PDR Decree on Climate Change, No. 321/PMO, dated 18 September 2019 - Law on Disaster Risk Management, No. 262/NA, dated 05 Aug 2019	MAE is responsible for the Decree on Climate Change. The project supports the decree through actions such as vulnerability assessment and mapping, raising awareness of adaptation.
2	Related to infrastructure construction and land use or construction - Environmental Protection Law (Revised Version), No. 29/NA (2012) - Decree on Environmental Impact Assessment, No. 112/PM (2010) - Environmental Impact Assessment Guidelines - - Lao PDR Land Law(amended), No. 70 /NA, dated 21 June 2019. - Lao PDR Construction Law. No. 159/LPDR, dated 2009 and Decision on Construction Management, 2019 - Law on Disaster Risk Management, No. 262/NA, dated 05 Aug 2019 - The Lao National Unexploded Ordnance Programme, which follows IMAS – International Mine Action Standards, under the National Regulatory Authority (NRA) for the UXO/Mine Action and UXO Lao, which adopted SOPs – Standard Operating Procedures. - Law No. 08/NA on National Heritage, dated 9 December 2005.	Although no ESIA is required by national law, risks screening and impact assessment of proposed activities are being conducted in compliance with the AF ESP and GP. The MAE will provide a letter confirming no ESIAs are required by national law for this project The Land Law is overseen by MAE. Construction permits will be obtained through OPWT or DPWT. The Construction Law is overseen by MPWT. MPWT also has oversight of Building Codes and Building Control. Any construction activities will comply with building codes and will support DRR in line with the law on DRR. The Decision on Construction Management has been established by MPWT. The project will comply with licensing regulations for construction and design. Since some target districts are at risk from Unexploded Ordinance, UN-Habitat will work with UXO Lao and the National Regulatory Authority for UXO, to conduct UXO risk assessments in the project towns. If necessary, UN-Habitat will survey the target areas and clear the risk areas. The project will comply with the Law on National Heritage by promoting local design features into construction, and by incorporating consideration of physical features into urban planning.

F. Duplication of project/programme with other funding sources

The project does not duplicate other funding sources but is designed to complement, build upon, and scale existing initiatives in Lao PDR. At the national level, Lao PDR has benefited from technical assistance programmes that support the development of the NDC, NAP, and climate change strategies. These initiatives have improved policy frameworks and enhanced government awareness but have not yet translated into localized investments in urban flood management. The project addresses this gap by linking national strategies to concrete interventions, ensuring that policy frameworks are operationalized in practice.

Importantly, consultations were carried out with provincial and national government partners. This consultative process ensures coherence with ongoing and planned investments and avoids overlap. Where synergies exist, the project will actively coordinate to leverage resources.

The project also avoids duplication by focusing specifically on urban centers, which are often overlooked by rural-focused adaptation programmes. By integrating community participation, gender equality, and knowledge management into infrastructure interventions, it ensures that benefits extend beyond physical works to institutional strengthening and social inclusion.

The list of related projects and programmes, together with their areas of focus and the project's added value, will be provided in tabular form.

Table 16. Projects in urban or climate change sectors

Implementing Agency	Project, Funding Amount, Donor and Timeline (All funding amounts in USD)	Focus/project description	Geography and complementarity
ADB	Southeast Asia Resilient and Water Secure Cities Facility Grant: USD 6.304m (JICA trust funds & ADB-administered sources); 2024 - 2027	The project provides technical assistance to help Southeast Asian cities plan and deliver climate-resilient urban water, sanitation, and flood protection services.	No geographical overlap. The proposed project creates strong synergies with ADB's regional technical assistance by translating urban resilience planning into city-level implementation in Lao PDR. The strategies and investment planning provide an upstream foundation that the proposed project operationalizes through drainage rehabilitation, riverbank protection, resilient schools, and cold storage facilities. Institutional strengthening, digital monitoring systems, and knowledge products further reinforce ADB's work by embedding these approaches into local planning and regulatory processes. There is no duplication, as the proposed project focuses on implementation and capacity at the city and community levels rather than regional analytical support.
	Urban Environment Improvement Investment Project Loan: USD 35 m Grant: USD 10 m 2023-2030	This project supports improving urban environmental services and climate-resilient infrastructure, including drainage, solid waste management, sanitation, roads, and public spaces, alongside institutional strengthening for integrated urban planning.	Geographical overlap in selected provinces, but with different intervention areas and scales. The proposed project complements this initiative by financing city-scale drainage, riverbank protection, and community-level resilience measures, while ADB focuses primarily on basin-level water management and large-scale water resources infrastructure. The proposed project will build on flood risk assessments, planning frameworks, and institutional capacities established under the ADB project to strengthen urban flood resilience in downstream cities.
	Flood and Drought Mitigation and Management Sector Project Loan: USD 30m + Grant: USD 1.5m; 2024 - 2029	The project supports the National Water Management Strategy & Action Plan 2030. It strengthens flood/drought risk management and water resources planning in Bolikhamxay, Khammouan, and Vientiane Capital.	Geographical overlap in two provinces but the area of the intervention is different. The proposed project complements by financing city-scale drainage/riverbank works and community-level resilience where ADB focuses on basin-level water management. The proposed project will build on institutional capacities, flood risk assessments, and planning frameworks established under this project to strengthen urban flood resilience in downstream cities.
UNDP	Enhancing Integrated Water Management and Climate Resilience in Vulnerable Urban Areas of the Mekong River Basin Grant: USD 1.59m Government of the Republic of Korea 2021 – 2025	The project targets the Xe Don and Xe Bang Fai River basins in Khammouane and Champasack provinces in Lao PDR, using tools like GIS, climate modelling, community planning, and institutional capacity building to address flood, drought, and transboundary water risks.	Partial overlap at the provincial level, but with different types of interventions. The UNDP project focuses on analysis, planning, and technical tools, while the proposed project complements this work by investing in physical measures such as drainage improvements and schools that can serve as evacuation centers. There is no duplication, as the two projects operate at different but complementary levels.
	Integrated Water Resource Management and Ecosystem-based Adaptation in the Xe Bang Hieng river basin and Luang Prabang city, Lao PDR Grant: USD 6m Global Environment Facility 2022 – 2026	The project strengthens climate resilience in Savannakhet's Xe Bang Hieng Basin and Luang Prabang through integrated catchment and urban ecosystem-based adaptation, combining flood and drought-mitigation infrastructure, ecosystem restoration, and livelihood diversification.	No geographical overlap with the area of interventions. The proposed project dovetails by strengthening urban assets reduce urban runoff impacts on upstream/downstream ecosystems. Synergy is created by linking upstream ecosystem-based measures with downstream urban flood protection.

UN-Habitat	Enhancing adaptive capacity in Lao PDR provinces, and building resilient housing in vulnerable communities Grant: USD 7.5m Adaptation Fund 2024 - 2028	The project strengthens adaptive capacity in six provinces by integrating climate adaptation into housing, urban planning, and community infrastructure. It includes construction of resilient housing, development of town master plans, and capacity building for provincial and district authorities.	Geographical overlap with a few provinces from the proposed project, but the specific target sites are different. There exists strong methodological and institutional complementarity. The project provides lessons on integration of adaptation into urban planning, which the proposed project builds on for flood management. Duplication is avoided by clearly separating housing interventions from city-scale flood infrastructure.
GGGI	Nature-Based Solutions for Urban Adaptation in Lao PDR (NATURA) Grant: USD 6.5m Government of New Zealand 2024 - 2029	The project works on reducing flood impacts by using nature-based solutions for wetland management. Through restoring and rehabilitating degraded wetlands in Vientiane Capital, it strengthens community resilience while delivering co-benefits in food security, health, and livelihoods.	NATURA operates in Vientiane Capital, with a focus on Nong Loup Ian wetland and Nam Ping River. The proposed project has no overlap with the target site. While the NATURA project focuses on nature-based solutions, the proposed project focuses on rehabilitation and restoration of flood management infrastructure to strengthen resilience. Lessons from NATURA on the importance of combining green and grey measures in dense urban areas can be applied, and duplication is avoided through clear separation of intervention sites and approaches.
UNEP	Building resilience of urban populations with ecosystem-based solutions in Lao PDR Grant: USD 10 m Green Climate Fund 2020-2026	The project implements ecosystem-based adaptation (EbA) to reduce urban flood risk by restoring wetlands, streams, and natural buffers, and by strengthening institutional and technical capacity for nature-based urban flood management.	Geographical overlap in selected urban areas, but with different intervention approaches. The proposed project complements by financing city-scale grey infrastructure, drainage rehabilitation, riverbank protection, evacuation schools, and food-system resilience, while the GCF project focuses on ecosystem-based solutions. Lessons learned from the GCF project, including the need to complement EbA with engineered flood protection in dense urban areas, directly inform the proposed project's integrated grey–green urban flood resilience approach. Duplication is avoided through differentiated intervention types.

G. Learning and Knowledge Management

Learning and knowledge management are central to the project design, ensuring that benefits extend beyond immediate interventions in the six target cities to inform policy, planning, and replication nationwide. While Lao PDR has made progress in establishing national frameworks, mechanisms to capture, synthesize, and disseminate lessons from adaptation projects remain limited. Most lessons remain at the project level, with few pathways for systematic integration into national planning or replication in other municipalities.

The project will generate a rich body of knowledge on climate-resilient urban development by documenting experiences across multiple dimensions, including flood management infrastructure, food systems resilience, and integration of climate change adaptation into education. Lessons will also be drawn from gender-responsive practices, community engagement approaches, and institutional strengthening efforts. By capturing both successes and challenges, the project will create a continuous learning loop that informs adaptive management during implementation and provides guidance for future investments.

A central activity under Component 3 is the systematic documentation and dissemination of information on adaptation practices. This will include evidence on the effectiveness, cost-efficiency, and inclusiveness of interventions, supported by an M&E framework with standardized indicators. Data will be collected by local authorities, disaggregated by gender and vulnerability, and used by governments and development partners to inform decision-making.

On food systems, knowledge products and technical briefs will demonstrate the links between urban growth, flood risks, and food security, helping planners and local authorities embed climate-sensitive food system perspectives into resilience initiatives. On education, updated teacher training guides, digital learning resources, and upgraded ICT infrastructure will institutionalize climate adaptation and disaster risk management within the national curriculum, ensuring knowledge is passed to future generations.

Dissemination will occur through multiple channels. At the national level, the Lao National Urban Forum

(LNUF), an annual UN-Habitat-led event, will serve as a key platform for sharing lessons and best practices from the project among ministries, provincial governments, development partners, civil society, and academia. The Forum will provide a structured opportunity to review and track experiences gained during implementation, reflect on progress and challenges, and support peer learning across cities and sectors. Annual project learning events will be organized in conjunction with the Forum, providing opportunities to showcase results, facilitate peer learning, and strengthen cross-sectoral coordination. At the regional level, lessons will be shared through ASEAN platforms, contributing to regional knowledge on urban adaptation. Globally, the project will feed into UN-Habitat's knowledge platforms, ensuring that Lao PDR contributes to international discussions on climate-resilient urbanization.

Knowledge management will be embedded into day-to-day project implementation. Each infrastructure activity will include a documentation process capturing design standards, implementation challenges, and community engagement practices. Digital learning resources and updated teacher training curricula will be institutionalized within the Ministry of Education and Sports, ensuring continuity beyond the project lifecycle. This integrated approach ensures that knowledge generation is not an afterthought but a driver of resilience. It will also firmly align with the Adaptation Fund's approach to knowledge management, by capturing lessons learned, documenting best practices, and equitably sharing knowledge and tools locally, nationally and regionally to inform other projects and stakeholders.

At the international level, UN-Habitat will share lessons learned with the Adaptation Fund through the project's scheduled evaluations. While evaluations will be conducted in Lao PDR, findings will be disseminated to UN-Habitat's regional office and headquarters to support broader institutional learning. Key lessons and relevant knowledge products will also be made publicly available through UN-Habitat's global knowledge platforms and website.

Data and insights of national relevance will be shared directly with government counterparts and development partners in Lao PDR and disseminated through existing national platforms and coordination mechanisms, including established development partner networks and online knowledge-sharing groups, to support replication and policy uptake.Lessons on gender-responsive design, inclusion of ethnic groups, and safeguards to minimize environmental impacts will be systematically captured to identify best practices. By anchoring knowledge management within government systems, academic institutions, and civil society networks, the project will ensure sustainability and long-term use of lessons generated.

Through systematic documentation, analysis, and dissemination, the project will create opportunities for replication, scaling, and policy integration. This transforms localized interventions into a national model for climate-resilient urban development, food systems resilience, and education sector preparedness, amplifying the impact of adaptation-focused investments and strengthening Lao PDR's role in regional and global learning.

H. Stakeholders Consulted

At the national level, extensive discussions were held with the Ministry of Agriculture and Environment (MAE), the Provincial departments of Public Works and Transport (DPWT), and the Ministry of Education and Sports (MoES). These ministries provided guidance on defining the scope of the activities, ensuring alignment with national climate strategies, and clarifying institutional roles. Consensus was reached that the project should combine resilient infrastructure with capacity development, integrate disaster risk reduction into regulatory frameworks, and embed resilience considerations in education systems. The Ministries also confirmed their agreement to serve as executing entities for specific components, namely environment, urban infrastructure, and education.

Figure 7. Consultation Workshop

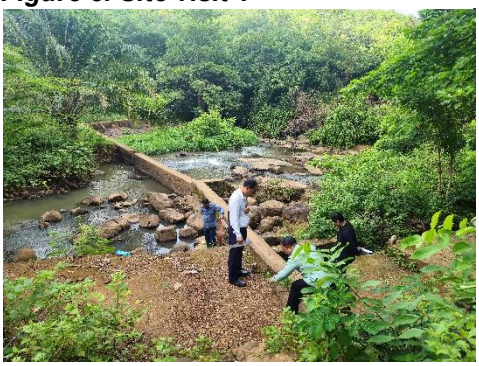
Target cities were identified through a multi-stage process involving national agencies, provincial departments, and municipal authorities. Selection criteria included hazard exposure, socioeconomic vulnerability, and strategic importance for national development. Vientiane Capital, Luang Prabang, Kaysone Phomvihane, Pakse, Muang Xay, and Thakhek were confirmed as project sites. Once target cities were agreed, provincial and district consultations were held to validate risks, identify priority

interventions, and refine activities.

Source: UN Habitat, 2025

At the provincial and district levels, consultations were carried out where discussions focused on local flood risk profiles, infrastructure priorities, and institutional capacity needs. District officials also provided insights on existing initiatives in drainage, riverbank protection, and school infrastructure, ensuring that the project builds on and complements rather than duplicates ongoing efforts.

Figure 8. Site visit 1



Source: UN Habitat, 2025

Community-level consultations were held with village chiefs, the Lao Women's Union, and community members, including representatives of ethnic minority groups. These sessions helped capture local experiences of climate change, decision-making practices, and everyday resilience challenges. Women highlighted the disproportionate burdens they face during floods, such as caregiving responsibilities, water and food management, and loss of income from disrupted markets. Ethnic group representatives emphasized the need for inclusive participation, culturally appropriate communication, and access to early warning in local languages. Communities provided their specific needs and safety concerns were addressed.

Initial gender consultations for the concept note have been undertaken with the Lao Women's Union, which plays a central role in promoting women's rights and gender equality across national and sub-national levels in Lao PDR. Engagement with the Ministry of Labour and Social Welfare, through its Department of Women and Children, will be undertaken during the full proposal development stage to ensure alignment with national gender policies and to strengthen the gender responsiveness of the project. Discussions with the Lao Women's Union examined how legal frameworks support or constrain women's resilience, the differentiated impacts of floods and storms on men and women, and opportunities to strengthen women's roles as agents of change. The outcomes shaped commitments to ensure women's participation in decision-making, embed gender-responsive measures in infrastructure design, and build women's leadership capacities in resilience planning.

Figure 9. Site visit 2

Source: UN Habitat, 2025

The process confirmed broad support for the project's holistic approach, combining infrastructure, institutional capacity development, and knowledge management. National and provincial authorities endorsed the project's focus on flood risk reduction, food security, and education, while local stakeholders ensured that interventions reflect the realities of vulnerable households. Community perspectives have been embedded into project design, strengthening ownership and social inclusiveness.

Further consultations will continue during the full proposal development to refine technical designs, ensure harmonization with ongoing projects, and confirm community engagement mechanisms. The outcomes of these discussions are also being used to align the project with national adaptation and development strategies, ensuring both complementarity and long-term sustainability.

Table 17. Record of consultations

Stakeholder	Date of Consultation	Consultation Objective	Outcome	Remark
Ministry of Agriculture and Environment (MAE), Department of	In addition to the following dates, discussions have been held throughout 2025 and	• Secure endorsement from the designated focal point. • Obtain MAE/DoE' confirmation to serve	• MAE confirmed its support for the project formulation process. • The DoE consented to act as the executing entity.	As the designated authority, MAE has approved

Environment (DoE)	communication is currently ongoing. May 23, 2025 Jul 1, 2025 Aug 22, 2025	as executing entity for the project. • Identify and finalize the project's target areas. • Align the project with existing adaptation initiatives and ensure consistency with national policies. • Define the project's scope and refine its objectives. • Ensure the scope is consistent with MAE priorities and harmonized with other ongoing interventions.	• Agreement was reached on the target areas identified in this concept note. • Stakeholders shared information on existing and planned initiatives within the proposed sites. • Consensus was established that the project will address urgent institutional and systemic gaps, contributing to resilience in a comprehensive manner.	the project.
Ministry of Education and Sports (MoES),	In addition to the following date, discussions have been held throughout 2025 and communication is ongoing. Aug 8, 2025	• Secure MoES's agreement to serve as a partner institution for mainstreaming climate resilience in the education sector. • Define the scope of education-related activities • Align project interventions with MoES's ongoing education reforms and digital learning strategies. • Identify gaps in schools and training institutions that the project can address. • Review existing policies relevant to education	• MoES confirmed its role as a partner for delivering education-focused climate resilience activities under the project. • Agreement was reached on mainstreaming climate adaptation and disaster risk management into teacher training guides and school curricula. • The project design was aligned with MoES's digital learning initiatives and education sector development plan. • Needs at national and sub-national levels were clarified to inform project activities.	
Provincial and District authorities and Academia	Vientiane Province: Jul 1, 2025 Kaysone: Dec 20, 2024 May 16, 2025 Xay: Apr 30, 2025 Luang Prabang: May 2, 2025 Champasak: Apr 29, 2025	• Select target towns and clarify specific scope in each town. • Understand the current extent of climate change adaptation in the target towns and relevant local plans and aspirations.	• Towns were selected and activities were agreed upon to meet the needs in each town. • Understanding was gained and shown in feasibility results.	
Communities in the target towns	Vientiane Province: Jul 1, 2025 Kaysone: Dec 20, 2024 May 16, 2025 Xay: Apr 30, 2025 Luang Prabang: May 2, 2025 Champasak: Apr 29, 2025	• Gather insights into local experiences of climate change and related decision-making processes. • Identify community needs and priorities concerning resilience • Confirm community support and address concerns regarding the proposed project.	• Flooding identified as the primary hazard risk. • Women and ethnic groups face limited participation and decision-making power, raising concerns about inclusivity.	
Lao Women's Union	May 23, 2025	• Assess strengths and gaps in the legal framework for women's rights. • Identify cultural and ethnic practices affecting gender roles. • Examine gender division of labour and power dynamics.	• Gained clarity on how existing legal frameworks both support and limit women's resilience. • Documented cultural practices and gender norms shaping women's participation in adaptation. • Identified how floods and storms affect women and men differently.	

		• Explore how floods and storms affect women and men differently. • Understand women's and men's varying capacities to adapt.	• Highlighted women's existing capacities • Reached agreement on women's priorities for adaptation planning	

I. Justification for funding requested

In Lao PDR, recurrent floods cause widespread human, economic, and environmental losses. Without dedicated adaptation finance, national and local authorities would continue to operate under a "business-as-usual" scenario, where investments are reactive, underfunded, and unable to address the growing risks associated with climate change. While traditional approaches restore infrastructure to pre-disaster conditions, the proposed project incorporates climate projections to account for increased flood intensity, frequency, and duration. This includes elevating bridges and roads above projected flood levels and upgrading drainage systems to manage higher runoff volumes. These measures reduce the risk of repeated damage and ensure infrastructure performance under future climate scenarios, justifying the need for adaptation-specific financing.

Given the country's fiscal constraints, government institutions lack the resources to undertake proactive flood resilience measures. At the institutional level, national and sub-national agencies remain under-equipped to integrate climate risk into planning and enforcement, and knowledge generated continues to be fragmented and underutilized.

By addressing these systemic gaps, the project ensures that adaptation is not treated as a stand-alone activity but as a core element of sustainable development. Investments in resilient infrastructure and institutional capacity will generate long-term savings by reducing the costs of repeated disaster response and reconstruction, while also safeguarding livelihoods, health, and food security. Crucially, without external support, these outcomes would remain out of reach given Lao PDR's limited fiscal space and competing development priorities. Thus, it is essential to catalyze a shift toward integrated resilience building that delivers both immediate protection and durable benefits for vulnerable communities.

The project aims to deliver transformative benefits that cannot be achieved under existing or alternative funding sources. All the activities in the proposed project are aligned with national priorities, and incorporates specific needs and requirements based on Lao PDR context. In this way, the project goes beyond incremental improvements and provides the full suite of interventions needed to shift from reactive responses to proactive resilience. The proposed project is designed to achieve its full set of outputs and outcomes using Adaptation Fund resources alone and is not contingent on the success, continuation, or co-financing of other initiatives.

Table 18. Comparison of Scenarios with and without Adaptation Fund Support

Outputs	Vulnerability Baseline	Adaptation Benefit Resulting from the Project	Alternative Scenario
1.1.1. Flood resilience and disaster risk reduction integrated into environmental monitoring and regulatory systems.	National and sub-national institutions lack systematic approaches to integrate flood and climate risk into monitoring and planning.	Institutions gain evidence-based capacity to mainstream disaster resilience and climate adaptation into environmental regulation and planning.	Climate risks continue to be overlooked in planning and monitoring, leaving development projects vulnerable.
2.1.1. Drainage and irrigation networks rehabilitated, and climate-resilient cold storage facilities developed in Vientiane Capital.	Existing networks are degraded, causing recurrent urban flooding and loss of food security during disasters.	Rehabilitated networks and cold storage facilities designed using climate-informed standards increase drainage capacity, reduce flood impacts and safeguard food/water security in urban areas.	Flood risks persist; communities face repeated crop and food storage losses.
2.1.2. Thatluang paving and drainage systems upgraded to reduce localized flooding.	Paving and drainage systems are outdated and insufficient to handle intense rainfall.	Upgraded systems reduce localized flooding, protecting homes, businesses, and transport.	Persistent localized flooding disrupts mobility and damages assets.
2.1.3. Gravel roads elevated and concrete bridges constructed in Luang Prabang to improve flood	Gravel roads and weak bridges are washed away by floods, isolating	Elevated infrastructure ensures year-round connectivity and reduces flood risks.	Continued road/bridge failures during floods disrupt livelihoods, markets, and services.

protection and connectivity.	communities.		
2.1.4. Drainage systems upgraded in Kaysone Phomvihane City, Savannakhet, for urban flood protection.	Existing drainage cannot manage heavy rainfall, causing recurring urban flooding.	Upgraded systems improve flood protection for markets, schools, and housing.	Urban flooding continues to damage infrastructure and disrupt services.
2.1.5. Riverbank protection and urban drainage/plumbing upgrades implemented in Pakse City to reduce flood risks.	Riverbank erosion and weak drainage expose communities to flooding.	Strengthened riverbank and drainage systems reduce risks to vulnerable settlements.	Riverbank erosion and floods continue to damage communities and infrastructure.
2.1.6. Drainage infrastructure upgraded in Xay District, Oudomxay, to increase capacity and mitigate urban flooding.	Drainage capacity is insufficient to cope with increasing rainfall and urban runoff.	Improved infrastructure increases drainage capacity and reduces flood risks in multiple locations.	Urban floods persist, disrupting economic and social activities.
2.1.7. Two model schools constructed in Oudomxay and Thakhek to serve as evacuation centers during floods/disasters.	Communities lack safe evacuation centres during floods and disasters.	Model schools constructed using climate-resilient design standards provide dual-function infrastructure for education and function as evacuation centers, reducing exposure to flood risks.	Communities remain without safe shelters, heightening disaster risks.
3.1.1. Knowledge on urban planning for food systems resilience advanced and shared through awareness-raising and dissemination of best practices at national and international levels.	Lao-specific experiences are not shared, limiting learning and visibility.	Lao PDR contributes to regional/global policy dialogues, improving knowledge exchange.	Lessons remain isolated, reducing opportunities for scaling and replication.
3.1.2. Knowledge products developed to inform climate policies for better flood management	Flood-related data and knowledge are fragmented and not used systematically in policy or planning. Policies are often reactive rather than evidence-based.	Evidence-based knowledge products support proactive, climate-informed decision-making and planning at national and subnational levels.	Flood policies remain ad hoc and poorly informed, resulting in inefficient investments and continued high exposure to flood risks.
3.1.3. M&E framework and indicators developed for tracking climate-resilient urban development at national and sub-national levels with a progress reporting system	There is no structured system to monitor progress on climate-resilient urban development.	M&E framework with localized indicators enables consistent tracking, progress reporting, and informed policymaking.	Without an M&E system, it remains difficult to measure progress, identify gaps, or secure climate financing.
3.1.4. Education materials, including teacher training guides and curricula, revised to incorporate climate change adaptation and disaster resilience.	Education curricula and training guides lack climate resilience content.	Teachers and education officers are equipped to integrate adaptation into teaching and student activities, building long-term awareness.	Climate change and disaster resilience remain absent in teacher training and education, reducing preparedness of future generations.

J. Sustainability of the Project/Programme Outcomes

Sustainability has been a central design principle of the proposed project, ensuring that the benefits of the project extend well beyond its implementation period. The project employs a multi-dimensional approach to sustainability, addressing technical, financial, institutional, social, environmental, and economic aspects, while also embedding resilience into infrastructure systems.

Technical Sustainability

All infrastructure interventions under the project will be designed and built to climate-resilient technical standards. UN-Habitat also has prior experience in designing infrastructure across Lao PDR, incorporating the specific needs of local communities. The project will ensure durable infrastructure systems, integrating additional climate resilience parameters such as higher design rainfall thresholds and energy-efficient technology for cold storage. By embedding resilience into technical specifications, the project ensures that infrastructure will withstand projected climate impacts over the coming decades.

Financial Sustainability

The project addresses adaptation by covering upfront investment costs while embedding mechanisms for long-term financial sustainability. Cold storage facilities will generate lasting savings by reducing food losses during disasters, while resilient roads and drainage systems will minimize the need for costly reconstruction after floods. Cost-effectiveness will remain a central consideration in the design of all

infrastructure interventions. All rehabilitated drainage systems, flood protection works, roads, bridges, schools functioning as evacuation centres, and food storage facilities will be formally handed over to the relevant line agencies and local authorities upon completion, in accordance with national procedures. These assets will be incorporated into existing municipal and sectoral asset inventories and maintenance plans, ensuring continuity beyond the project duration. The project will support the development or updating of O&M plans, including maintenance schedules and cost estimates, to facilitate budgeting and reduce the risk of deferred maintenance.

Institutional Sustainability

The project is fully embedded within the mandates of national and provincial institutions. Key sectors, including agriculture and environment, urban planning, and education, will work in synergy, fostering cross-sectoral coordination that sustains adaptive measures in the target areas. This approach ensures that capacity is strengthened within the institutions responsible for long-term climate resilience, rather than being housed in parallel structures. The project's capacity-building elements will enhance institutional effectiveness over the long term, with training programmes, updated guidelines, and planning tools institutionalized within government systems. Knowledge products will focus on embedding lessons into institutional processes, academic curricula, and professional training pipelines. As a result, institutional capacities will endure beyond the life of the project, ensuring the continuity of resilience outcomes. Organizations such as the Lao Women's Union and the Lao Youth Union will also participate in trainings and consultations, with their institutional capacities strengthened to play a greater role in resilience planning and implementation.

Social Sustainability

Social sustainability is achieved by ensuring that interventions are inclusive, equitable, and community driven. The project prioritizes the needs of the most vulnerable groups such as women, youth, elderly, ethnic groups, and persons with disabilities, who are disproportionately affected by floods. Participatory planning processes will ensure that communities contribute to the design, monitoring, and maintenance of interventions, increasing ownership and long-term acceptance. By reducing food insecurity through cold storage and safeguarding education services from flood disruption, the project strengthens social resilience. A community-centered approach will ensure that resilience outcomes are not only technically sound but also socially embedded.

Environmental Sustainability

The project integrates infrastructure development with climate resilience to ensure long-term environmental sustainability. Capacity-building activities will embed environmental sustainability principles into institutional processes, helping government and community stakeholders mainstream these considerations into planning and implementation. Safeguard measures will guide all interventions, ensuring that environmental protection is prioritized in the target areas and that any potential risks are effectively mitigated. In addition to adaptation benefits, the project will generate mitigation co-benefits by reducing greenhouse gas emissions using efficient materials, sustainable construction practices, and improved resource management.

Economic Sustainability

By reducing recurrent flood losses, the project safeguards economic growth and reduces the need for costly humanitarian response and reconstruction. Protecting food storage systems ensures continuity of commerce and trade. Elevated roads and resilient bridges maintain connectivity for supply chains and tourism, securing critical income sources. Cold storage facilities reduce post-harvest losses and stabilize food prices, directly supporting food security and market resilience. Employment generated during construction and maintenance further stimulates local economies. By embedding adaptation into national planning systems, the project ensures that future economic development is climate-resilient, reducing the risk of maladaptation and protecting long-term growth trajectories.

Sustainability of Infrastructure

Infrastructure under the project will be designed for durability, ease of maintenance, and integration with existing urban systems. Drainage channels will be sized for future rainfall intensities and designed to minimize clogging. Road elevations will use durable materials adapted to local hydrological conditions. Riverbank protection will employ solutions that reduce long-term maintenance requirements. Cold storage

facilities will be designed for scalability and easy maintenance. Operation and maintenance (O&M) responsibilities will be formally assigned to provincial and district authorities. Involving local entities for the construction activities ensures that O&M can be conducted locally, reducing dependence on external contractors. The complete details of O&M needs will be provided during the full proposal development phase.

K. Environmental and Social Impacts and Risks

The project has been designed to deliver substantial environmental, social, and economic benefits for vulnerable populations while minimizing and mitigating potential negative impacts. In line with the Adaptation Fund's Environmental and Social Policy (ESP) and Gender Policy, a preliminary screening has been undertaken, and further detailed assessments will be carried out during the full proposal stage. The project applies the precautionary principle, ensuring that all risks are identified and addressed proactively, while maximizing the project's contribution to environmental sustainability, social inclusion, and gender equality.

Overall, the project is expected to generate positive environmental and social outcomes by reducing flood risks, safeguarding food systems, protecting critical infrastructure, strengthening education systems, and enhancing institutional and community capacity. Negative impacts are anticipated to be moderate, localized, and temporary, primarily associated with construction activities. These impacts can be effectively mitigated through standard environmental and social management measures, which will be integrated into project design and implementation.

The project incorporates multiple interventions that enhance environmental sustainability. Rehabilitation and upgrading of drainage systems will reduce urban flooding and waterlogging, protecting soils and groundwater from contamination. Riverbank stabilization in Pakse will reduce erosion and sedimentation, protecting downstream ecosystems. Cold storage facilities will reduce food waste, thereby lowering greenhouse gas emissions linked to food loss. The social benefits of the project are substantial. By reducing urban flooding, the project directly protects vulnerable communities from displacement, health risks, and economic losses. Cold storage facilities protect farmers, traders, and consumers from food insecurity and price instability during floods. Institutional and community capacity-building enhances ownership, empowers women and youth, and strengthens governance.

Component 1 relates to capacity building activities and Component 3 relates to knowledge management and are hence not expected to cause any environmental or social risks. As such, these activities may be classified as Category C; however, potential risks will still be carefully screened and mitigated. Capacity-building activities will be designed and implemented in direct response to the findings of the gender assessment, ensuring that identified gender-specific needs, constraints, and priorities are adequately addressed. By their nature, construction activities have the potential for some environmental and social risks. The proposed activities under Component 2 are not expected to pose any adverse environmental or social risks, given the specific locations selected for implementation. Any other risks are considered site-specific and manageable with appropriate mitigation measures.

Based on the Adaptation Fund's ESP, the project is expected to fall into Category B: projects with potential adverse environmental and social impacts that are less adverse, site-specific, and readily mitigated. No large-scale, irreversible, or unprecedented impacts are anticipated. All anticipated risks will be addressed through an Environmental and Social Management Plan (ESMP), to be prepared during the full proposal stage.

Gender Assessment

Gender dynamics in Lao PDR impose multiple layers of vulnerability for women in the face of climate change. Women, especially those from poor households, remote and rural areas, and ethnic minority groups, face structural inequalities in education, employment, decision-making, access to resources, and social protection. According to recent assessments, women account for only about 35% of wage employment in formal sectors; large proportions of female labour are in unpaid family work, informal trade, and agriculture, sectors particularly sensitive to climate and flood risks[64]. Women's labour force

[64] Lao PDR Country Gender Assessment, ADB.

participation in Lao PDR is relatively high, with an estimated 76.5 percent of women engaged in the labour force compared to 79.8 percent of men; however, women are disproportionately concentrated in informal and vulnerable employment, with approximately 81.3 percent of women working in informal or precarious jobs, compared to 67.5 percent of men[65]. Women are more likely than men to occupy lower status jobs, have lower access to credit or assets, and have fewer opportunities for technical or leadership roles. Literacy and educational attainment, while improving, remain lower for older women and ethnic groups, particularly beyond primary school[66].

Flood-related risks amplify these underlying vulnerabilities. During flash floods or riverine flooding, women often bear disproportionate burdens for household water collection, childcare, caring for the elderly, cooking and food preparation under disrupted conditions, cleaning and sanitation tasks, and managing losses of household food stocks or small livestock. These domestic burdens are intensified when markets are flooded, or perishable goods spoil, often managed by women. Loss of income from disrupted market access, increased care responsibilities, and health risks all fall heavily on women. In addition, displacement caused by riverbank erosion or flood damage often results in women-headed households being more exposed, given that they may have fewer assets, less mobility, or weaker social safety nets.

Women also remain under-represented in decision-making spaces related to disaster risk reduction, urban planning, infrastructure design, and environmental governance[67]. At local authority levels, ethnic minority women often have limited voice in village committees, disaster management committees, or infrastructure planning bodies.

Quantitative data indicate that women and girls constitute a significant proportion of those exposed to urban flooding impacts in the target areas. Women represent an estimated 52 percent of the project's direct beneficiaries, reflecting population demographics in flood-prone urban and peri-urban neighborhoods. A substantial share of informal market vendors, food traders, and small-scale food system workers affected by flooding are women, many of whom experience income losses and increased care burdens during flood events. Female-headed households are also disproportionately represented in low-lying and flood-prone settlements, facing heightened risks due to limited access to resources, secure housing, and mobility during emergencies.

The project's capacity-building activities aim to ensure inclusive participation, with targets to achieve meaningful representation of women in training, planning, and decision-making processes at community and institutional levels. Sex-disaggregated indicators will be refined and tracked during project formulation and implementation to ensure gender-responsive adaptation outcomes.

The Lao Government has recognized gender equality as a national priority. Instrumental frameworks include the National Strategy for the Advancement of Women (2016-2025), the Law on Gender Equality (2019), the National Action Plan for Gender Equality (2021-2025), and the Plan of Action for the Prevention and Elimination of Violence Against Women and Children (2021-2025)[68]. These policies explicitly mandate women's increased participation in political, economic, and public life, require gender-disaggregated data, and call for inclusion of women in disaster resilience and environmental sustainability initiatives. Yet gaps persist in implementation, especially in remote provinces, ethnic minority communities, and in ensuring that resilience and flood-management frameworks are gender responsive.

If gender considerations are not integrated, flood resilience or infrastructure interventions may unintentionally reinforce existing inequalities. For example, decision-making committees or planning processes often default to male leadership, which can overlook women's perspectives on issues such as safe routes, childcare, sanitation, or safety. Persistent data gaps, such as limited sex-disaggregated monitoring or the absence of gender audits, also mean gender-differentiated outcomes are not always well captured. In addition, social norms may affect women's mobility or participation in meetings, unless engagements are designed to be culturally sensitive.

To address these gaps, the project will apply a gender-responsive and socially inclusive approach across all components. First, it will promote the equal participation of women in planning, consultations, decision-

[65] Demographic Change for Development, UNFPA Lao PDR
[66] Gender Inclusive Green Growth in Lao PDR, GGGI and Lao Statistics Bureau.
[67] Addressing Gender Disparities for Inclusive and Equitable Development, Development Asia (2025)
[68] National Strategy for Gender Equality (2016-2025), Law on Gender Equality (2019), National Action Plan for Gender Equality (2021-2025), National Plan of Action on Preventing Violence Against Women and Children.

making, and monitoring by establishing quotas or targets for women in workshops, resilience action planning, and training, and by ensuring the inclusion of ethnic minority women and female-headed households. Second, all project monitoring, reporting, and evaluation indicators will be sex-disaggregated and, where possible, socially disaggregated, to better track outcomes for vulnerable groups. Third, specific interventions will directly address the burdens faced by women. For example, schools designated as evacuation centers will integrate gender-sensitive measures, including adequate WASH facilities to ensure safe and hygienic conditions for women and girls. Fourth, training and capacity-building for government stakeholders (local and national) will incorporate gender sensitivity, mainstreaming of gender in climate risk screening, infrastructure design, and policy development, as well as dedicated GESI training modules to strengthen institutional capacity. Finally, awareness-raising efforts will include targeted campaigns for women in remote or ethnic communities, delivered in relevant languages, at appropriate times, and in safe spaces, with strong collaboration with women's unions.

By combining structural policy commitments, technical design, inclusive participation, and robust monitoring, the project seeks not only to mitigate the disproportionate vulnerabilities women face but also to promote women as agents of resilience: leaders in community planning, disaster preparedness, and sustainable urban adaptation. This approach is consistent with the Government's commitments under the national and subnational plans and gender equality frameworks. It also ensures that the project's outcomes are durable, equitable, and aligned with both national policy and international norms.

Table 19. Checklist of environmental and social principles

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance	Further assessment planned during the full proposal development phase
Compliance with the Law	X	There is a low risk of non-compliance with applicable national laws and regulations during project implementation. This risk could arise if permitting, construction, or labour requirements are not fully applied. Mitigation measures will include screening all activities under national legal frameworks, including: Environmental Protection Law (2012) Environmental Impact Assessment Decree (2010) Law on Land (2003) Law on Water and Water Resources (1996) Labour Law (2013) Law on Urban Plans Law on Investment Promotion Law on National Heritage (2005). All required environmental and building permits will be obtained, and compliance will be overseen by MAE and implementing agencies.	
Access and Equity		There is a low risk of unequal benefit distribution or inequitable participation in decision-making. This risk is indirect and cumulative if vulnerable groups are not adequately included. Mitigation measures include participatory planning processes, prioritization of vulnerable groups (including women, persons with disabilities, and ethnic groups), transparent beneficiary selection, grievance redress mechanisms, and monitoring of benefits using equity indicators.	X
Marginalized and Vulnerable Groups		There is a low risk of exclusion of marginalized or vulnerable groups from consultations or project benefits. Mitigation measures include targeting high-risk areas using socio-economic criteria (poverty levels, access to services, prevalence of female-headed households), engagement of the Lao Women's Union at national and local levels, culturally appropriate consultations, targeted outreach, disaggregated monitoring, and capacity building to enhance community ownership.	X
Human Rights	X	There is a low risk of human rights concerns, including exclusion from decision-making processes or unequal access to project benefits. Mitigation measures include alignment with the Lao Constitution and international human rights obligations, including the Universal Declaration of Human Rights, continuous monitoring by the Implementing Entity, inclusive stakeholder engagement, and corrective actions if any risks are identified.	
Gender Equality and Women's Empowerment		There is a low to medium risk of women being excluded from decision-making, employment, or training opportunities, particularly at sub-	X

		national levels where representation may be limited. Mitigation measures include gender quotas in training and planning activities, sex-disaggregated indicators, gender-responsive activity design, and structured consultation with the Lao Women's Union to ensure women's needs and priorities are addressed.	
Core Labour Rights	X	There is a low risk of unsafe working conditions or non-compliance with labour standards during construction and implementation activities. Mitigation measures such as ensuring adherence to national labour regulations and ILO core labour standards, prevention of forced and child labour, respect for freedom of association, strengthened labour inspection, safeguards against exploitation of ethnic groups, and regular site inspections will be taken to ensure compliance.	
Indigenous Peoples	X	There is a low risk of inadequate consultation with ethnic groups living in project areas. Mitigation measures include inclusive consultations throughout the project lifecycle, use of local languages, culturally appropriate engagement, and application of UNDRIP principles, including Free, Prior and Informed Consent (FPIC), where applicable.	
Involuntary Resettlement	X	There is no risk of temporary economic displacement or minor land acquisition associated with drainage or riverbank works. No physical resettlement is anticipated, as activities focus on public or unused land. Mitigation measures include verification during full proposal development and application of national procedures and compensation mechanisms if any impacts are identified.	
Protection of Natural Habitats	X	There is a low risk of disturbance to wetlands or riparian vegetation during drainage and riverbank works. Mitigation measures include environmental impact assessments to guide design, use of bioengineering and green infrastructure, re-vegetation, and habitat restoration measures.	
Conservation of Biological Diversity	X	There is a low risk of temporary disturbance to urban biodiversity during construction as drainage work may disturb wetlands or riparian vegetation. Mitigation measures include replanting of native species, wetland and green space restoration, and monitoring of biodiversity impacts during and after construction.	
Climate Change	X	There is no risk of negative climate impacts, as the project is designed specifically to enhance climate resilience. While infrastructure activities may generate minor greenhouse gas emissions during construction, these are limited and temporary. Mitigation measures will include climate-resilient design standards and use of monitoring systems to track adaptation effectiveness.	
Pollution Prevention and Resource Efficiency		There is a low risk of localized pollution, including dust, noise, construction waste, or water contamination, as well as increased energy use from cold storage facilities. Mitigation measures include dust and noise control, proper waste disposal, contractor waste management plans, supervision by the Implementing Entity, and development of a resource efficiency plan for energy-efficient cold storage systems.	X
Public Health		There is a low risk of temporary public health impacts, such as exposure to dust, noise, or stagnant water during construction. Mitigation measures include application of public health and safety protocols and improved drainage systems, which are expected to reduce waterborne disease risks in the long term.	X
Physical and Cultural Heritage	X	There is a low risk of disturbance to physical and cultural heritage assets, particularly in Luang Prabang, a UNESCO World Heritage Site. Mitigation measures include close coordination with heritage authorities, heritage impact assessments, design modifications, and protection measures to preserve cultural assets.	
Land and Soil Conservation		There is a low risk of soil erosion or sedimentation, particularly in areas with fragile soils. Mitigation measures include erosion control measures, protection of natural land conditions, and implementation of construction practices that prevent land degradation.	X

PART III: IMPLEMENTATION ARRANGEMENTS

A. Demonstrate how the project/programme aligns with the Results Framework of the Adaptation Fund

Project Objective(s)[1]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Strengthening Community and Institutional Capacities for Climate Resilience	-Number of national and sub-national institutions with improved capacity to implement climate adaptation measures	**Outcome 2:** Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses **Outcome 3:** Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	**Indicator 2.1:** No. of staff trained to respond to and mitigate climate-related events **Indicator 2.2:** Capacity of targeted institutions increased to minimize exposure to climate variability risks **Indicator 3.1:** % of targeted population aware of predicted adverse climate impacts **Indicator 3.2:** % of targeted population applying appropriate adaptation responses	**2,300,000.00**
Strengthening Urban and Peri-Urban Resilience through Flood Management and Food Systems Infrastructure and Rehabilitation	-Number of climate-resilient adaptation solutions implemented -Number of beneficiaries (disaggregated by gender and vulnerability) -Percentage of beneficiaries reporting enhanced resilience	**Outcome 1:** Reduced exposure to climate-related hazards and threats **Outcome 4:** Increased adaptive capacity within relevant development sector services and infrastructure assets	**Indicator 1.1:** No. of risk and vulnerability assessments conducted/updated **Indicator 1.2:** No. of early warning systems and % of population covered **Indicator 4.1:** No./type of services modified to respond to climate risks **Indicator 4.2:** No. of physical assets strengthened to withstand climate impacts	**15,916,292**
Strengthening Community Awareness and Mainstreaming Adaptation through Advocacy and Knowledge Management	-Number of national and sub-national planning documents integrating knowledge products developed -Number of national, regional, and international forums where project lessons are presented -Number of community members reached through knowledge and awareness materials on flood and climate resilience	**Outcome 3:** Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	**Indicator 3.1:** % of targeted population aware of predicted adverse impacts **Indicator 3.2:** % applying appropriate adaptation responses	**500,000.00**
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**

Outcome 1: National and sub-national institutions have strengthened capacity to integrate climate and flood risk considerations into planning, monitoring, and regulatory frameworks.	-No. of institutions with strengthened capacity to integrate climate and flood risk considerations (disaggregated by scale and sector) -No. of officials trained on using digital tools for flood risk analysis and regulatory compliance -No. of people covered by new/improved early warning systems	Output 2.1: Strengthened capacity of national and subnational institutions to understand and address climate risks and resilience. Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness activities. Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning.	Indicator 2.1.1: Institutions supported to strengthen capacity to understand and address climate risks and resilience [# of institutions, disaggregated by scale and sector] Indicator 3.1.1: People participating in activities to improve awareness of climate risks and how to address them [# of people, disaggregated by gender and vulnerable groups] Indicator 3.2.1: Climate resilience knowledge products and/or tools developed and shared with stakeholders [# of products/tools]	**2,300,000.00**
Outcome 2: Flood resilience is strengthened through improved protective infrastructure systems to safeguard urban populations, critical infrastructure, and livelihoods.	-No. of households with improved access to secure water/food storage due to flood-resilient infrastructure -Km of drainage systems rehabilitated -No. of climate-resilient infrastructure solutions implemented	Output 1.2: Targeted population groups covered by warning and advisory services for climate-related hazards and threats. Output 4.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate impacts.	Indicator 1.2.2: People covered by new or improved early warning systems [# disaggregated by gender] Indicator 4.1.1: Development sector services strengthened to respond to climate variability and change [# by sector and scale]	**15,916,292**
Outcome 3: Knowledge and learning mechanisms for climate-resilient urban development is enhanced through awareness-raising, monitoring frameworks, and integration into education and training systems.	-No. of knowledge products and guidelines disseminated. - No. of regional and international forums where best practices are presented. -No. of teachers trained to integrate climate information into the curriculum	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning.	Indicator 3.2.1: Climate resilience knowledge products and/or tools developed and shared with stakeholders [#]	**500,000.00**

Implementation Arrangements

The project will adopt a collaborative, multi-agency approach, ensuring alignment with the priorities of the Government of Lao PDR and the policies of the Adaptation Fund. The institutional architecture rests on the roles of the Implementing Entity (UN-Habitat), the Executing Entities supported by UN-Habitat (Department of Environment - Ministry of Agriculture and Environment, Ministry of Education and Sports, and the Provincial Departments of Public Works and Transport – DPWT, and the NPSEs), and the oversight of the Programme Advisory Committee (PAC).

1. Implementing Entity (IE)

UN-Habitat serves as the Multilateral Implementing Entity accredited by the Adaptation Fund. In this role, UN-Habitat is accountable for overall delivery of the project, including financial oversight, monitoring and evaluation, and compliance with the Fund's Environmental and Social Policy (ESP) and Gender Policy (GP). UN-Habitat will:

- Act as the signatory to the grant agreement with the Adaptation Fund.
- Ensure that funds are transferred in accordance with AF fiduciary standards.
- Consolidate progress and financial reports submitted by the Executing Entities and submit unified reports to the Adaptation Fund.
- Provide technical oversight and quality assurance of deliverables under all three components.
- Ensure compliance with environmental, social, and gender safeguards, including monitoring of risk management measures.
- Facilitate knowledge exchange with other UN-Habitat initiatives in Lao PDR and across the Asia-Pacific region.

UN-Habitat's Lao PDR Country Office, working closely with its Regional Office for Asia and the Pacific (ROAP) and Headquarters (HQ) technical teams, will coordinate daily oversight of implementation and provide technical backstopping.

2. Executing Entities (EEs)

The proposed project will be executed by national ministries and provincial authorities, supported by their relevant departments and entities. Each Executing Entity will manage activities under its designated component, including technical delivery, financial management, and safeguards monitoring with the help of UN-Habitat.

2.1 Department of Environment, Ministry of Agriculture and Environment (MAE)

Key responsibilities:

- Implement assigned capacity building and knowledge management activities in line with the approved work plan.
- Ensure all activities comply with environmental and social safeguards (ESMP/ESMF), gender, and inclusion requirements.
- Report regularly on progress, results, and financial disbursements to the Programme Management Unit (PMU).
- Facilitate monitoring and evaluation by providing data, documentation, and access for verification.
- Coordinate closely with UN-Habitat and government counterparts to ensure alignment with national policies and project objectives.

2.2 Ministry of Education and Sports (MoES)

Key responsibilities:

- Deliver education-related activities, including teacher training, curriculum integration, and awareness programmes.
- Ensure gender equality and social inclusion (GESI) are embedded in all interventions, in line with national education policies.
- Provide regular updates to the Programme Management Unit (PMU) on progress, results, and use

of funds.
- Support monitoring and evaluation by sharing data, facilitating field access, and cooperating with evaluators.
- Work in close coordination with local education authorities, and partners to align with project goals.

2.3 Provincial Departments of Public Works and Transport (DPWT) and NPSEs

Key responsibilities:
- Lead implementation of assigned infrastructure works such as drainage, riverbank protection, and resilient public facilities.
- Ensure all construction activities comply with environmental and social safeguards, technical standards, and safety regulations.
- Report on construction progress, budget execution, and contractor performance to the Programme Management Unit (PMU).
- Facilitate monitoring and evaluation through site access, engineering documentation, and verification of works.
- Coordinate with UN-Habitat, contractors, and provincial authorities to deliver quality infrastructure on time and within budget.

3. Coordination and Oversight Mechanisms

Programme Advisory Committee (PAC)

A Programme Advisory Committee (PAC) will be established to provide strategic guidance and oversight. The PAC will be co-chaired by the Department of Environment, MAE (as Designated Authority to the Adaptation Fund) and UN-Habitat. Membership will include key government partners, civil society representatives, and academia.

PAC responsibilities:
- Provide strategic direction and ensure alignment with national development priorities.
- Review and endorse annual workplans and budgets.
- Monitor compliance with environmental, social, and gender safeguards.
- Facilitate coordination across ministries, provinces, and development partners.
- Provide adaptive management guidance to the PMU.

Programme Management Unit (PMU)

A Programme Management Unit (PMU) will be established to oversee day-to-day project management. The PMU will include a Programme Manager, Finance and Admin Officer, Engineering Coordinator, and other technical staff.

Key functions:
- Coordinate implementation across Executing Entities.
- Consolidate technical and financial reports for submission to UN-Habitat HQ and the Adaptation Fund.
- Monitor and evaluate progress against project indicators.
- Support procurement processes, safeguard compliance, and stakeholder engagement.
- Facilitate knowledge management and dissemination of lessons learned.

4. Engagement with National and Local Stakeholders

The project will be implemented in close collaboration with national, provincial, and district authorities. Village-level committees, Lao Women's Union, and Lao Youth Union will be engaged to ensure meaningful participation of women, ethnic groups, and marginalized populations. The project will also coordinate with development partners to ensure complementarity and avoid duplication.

5. Collaboration with the UN System

The project will coordinate closely with the UN Resident Coordinator Office (RCO) and will be integrated

into the broader UN Sustainable Development Cooperation Framework (UNSDCF) for Lao PDR. Engagement with the UN Country Team (UNCT) will ensure synergies with other UN-led programmes on climate change, disaster risk reduction, and urban resilience.

6. Reporting and Accountability

Each Executing Entity will submit technical and financial reports to the PMU, in line with AF requirements. UN-Habitat, as IE, will consolidate these into:

- Annual Project Performance Reports (PPRs).
- Mid-term and final evaluation reports.
- Financial statements and audit reports.

Monitoring and evaluation will follow the AF's M&E guidelines and UN-Habitat's Evaluation Policy.

7. Programme Governance Structure

- Programme Advisory Committee (PAC): Strategic oversight, policy alignment, safeguard monitoring.
- Programme Management Unit (PMU): Day-to-day coordination, technical oversight, reporting.
- Executing Entities: Implementation of assigned components, procurement, technical delivery, safeguard compliance.
- UN-Habitat (IE): Overall accountability to AF, consolidation of reporting, fiduciary oversight.

8. Gender-Responsive Arrangements

The project will ensure gender balance in the PAC and PMU and require gender-disaggregated reporting from all components. Training modules will be gender-responsive, and infrastructure designs will incorporate women's safety and accessibility needs.

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. **Record of endorsement on behalf of the government**[2] *Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:*

Ms. Phakkavanh Phissamay, Director General, Department of Environment, Ministry of Agriculture and Environment, Designated Authority for the Adaptation Fund of Lao PDR	Date: 6 January 2025

Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity

Ministry of Agriculture and Environment
Department of Environment

Vientiane Capital, Date: 6 January 2026

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: afosec@adaptation-fund.org
Fax: 202 522 3240/5

Subject: Endorsement for the proposed project entitled "Safeguarding Lives and Livelihoods in Lao PDR: Enhancing Urban Flood and Food Systems Resilience"

In my capacity as designated authority for the Adaptation Fund in Lao PDR, I confirm that the above national project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Lao PDR.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by UN-Habitat and executed with their support by the Ministry of Agriculture and Environment, the Ministry of Education and Sports, Provincial Departments of Public Works and Transport in Vientiane, Savannakhet, Champasak, Luang Prabang, Oudomxay, and Khammouane Provinces.

This project remains a high priority for the Government of the Lao PDR. We are looking forward to your favorable consideration of our request.

Thank you for your consideration on this matter.

Yours Sincerely,

Ms. Phakkavanh PHISSAMAY
Director General
Department of Environment
Ministry of Agriculture and Environment
National Focal Point to the UNFCCC
Designated Authority to the Adaptation Fund

B. **Implementing Entity certification** *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans including the 9th National Socio-economic Development Plan, National Adaptation Programme of Action, Strategy on Climate Change of the Lao PDR, NDC (2021) of Lao PDR, and sectoral strategies and plans, and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.
Name & Signature Mr. Rafael Tuts, Director, Global Solutions Division, UN-Habitat  Implementing Entity Coordinator
Date: *September,15, 2025* | Tel.: +254207623726; Email: raf.tuts@un.org
Project Contact Person: Mr. Roi Chiti, Programme Management Officer, Human Settlements, UN-Habitat Regional Office for Asia and the Pacific
Tel. +254207625424; Email: roi.chiti@un.org

[6.] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.