ADAPTATION FUND

TERMINAL EVALUATION

ENHANCING THE CLIMATE AND DISASTER RESILIENCE OF THE MOST VULNERABLE RURAL AND EMERGING URBAN HUMAN SETTLEMENTS

Adaptation Fund funded project

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PHOTOS
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Abbreviations and Acronyms

AoC	Agreement of Cooperation
AF	Adaptation Fund
BBB	Build Back Better
CRVA	Climate Risk and Vulnerability Assessment
DPWT	District Office of Public Works and Transport
DRM	Disaster Risk Management
DWS	Department of Water Supply
EA	Expected Accomplishment
FDG	Focus Group Discussion
GESI	Gender Equality and Social Inclusion
KII	Key Informant Interview
LDC	Least Developed Country
M&E	Monitoring and Evaluation
MONRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
MPWT	Ministry of Public Works and Transport
NDC	Nationally Determined Contribution
NPSE	Nam Papa State-Owned Enterprise
NSEDP	National Socio-economic Development Plan
NUA	New Urban Agenda
O&M	Operation and Maintenance
PWT	Public Works and Transport
RBM	Results-based management
SDGs	Sustainable Development Goals
TOC	Theory of Change
TOR	Terms of reference
UNEG	United Nations Evaluation Group
UNPF	United Nations Partnership Framework
UNSDPF	United Nations Sustainable Development Cooperation Framework
UN-Habitat	United Nations Human Settlements Programme

Executive Summary

The terminal evaluation report is part of a project financed by the Adaptation Fund (AF) titled "*Enhancing the climate and disaster resilience of the most vulnerable rural and emerging urban human settlements in Lao PDR*". The report aims to assess project performance, covering the full term of the project from the design phase through to the project completion. It was carried out from July to August 2024. The evaluation synthesised achievements, results and lessons learned from the project. In addition to assessing the expected accomplishments of the project, the evaluation also had a focus on the cross-cutting issues of gender and human rights. The target audiences for the evaluation results are the UN-Habitat and other implementing partners, intended project beneficiaries and other relevant stakeholders. This report has employed an in-depth desk review as well as a preliminary set of surveys and interviews to arrive at certain key findings, covering the evaluation criteria **of relevance, effectiveness, efficiency, impact outlook, sustainability, coherence** and **cross-cutting issues**, which are summarized below:

1. **Relevance (5)**

Regarding relevance, the project demonstrated strong alignment with various policies and strategies at multiple levels. At the national level, it contributed to Lao PDR's 8th National Socio-Economic Development Plan (2016-2020), particularly in preparing for disaster risks and climate change impacts. It also aligned with the National Strategy on Climate Change (2010), Nationally Determined Contribution (NDC) and the National Housing and Urban Development Strategy and Vision towards 2030. At the local level, the project supported Provincial and District Development and Poverty Eradication Plans, as well as Disaster Response Plans. It also met villagers' needs in Attapeu, Salavan, and Sekong provinces.

In addition, the project was consistent with UN-Habitat's Strategic Plan 2014-2019, focusing on Housing and Slum Upgrading, and Risk Reduction and Rehabilitation. It also aligned with the United Nations Sustainable Development Cooperation Framework (UNSDCF) 2021-2025 for Lao PDR and the New Urban Agenda. Furthermore, the project contributed to Sustainable Development Goals 11, 6, and 13, and aligned with the Sendai Framework for Disaster Risk Reduction and Adaptation Fund priorities.

All project activities, in particular, complied with existing laws, regulations, standards, and government-endorsed procedures. More importantly, beneficiaries in the three provinces reported that the project, especially the built water supply, met their needs and significantly enhanced their livelihoods by providing water for drinking, cooking, and gardening.

2. **Effectiveness (4)**

The project successfully met its objectives of strengthening policy and institutions, enhancing capacity for climate resilience, and building resilient infrastructure in vulnerable settlements. It achieved this through a comprehensive approach that addressed vulnerability reduction, capacity building, infrastructure development, and robust monitoring and evaluation.

Firstly, the project conducted 3 provincial and 8 district-level Climate Change Vulnerability Assessments, covering 189 settlements, and developed guidelines for replicating these assessments in other areas. This information enabled provinces, districts, and settlements to plan for resilient development, identifying low-risk areas and prioritizing sustainable interventions focused on

vulnerable groups' needs.

Secondly, the project also achieved the capacity building activities, these efforts included national and district-level workshops for facilitators, training 100 participants (25 females) from provincial and district PWT offices. These workshops identified barriers and opportunities for increasing resilience by reviewing relevant planning practices, policies, legislation, and finance.

Thirdly, the project facilitated the development of water supply systems for 189 communities across Attapeu, Salavan, and Sekong provinces, directly benefiting 125,295 people, including 67,659 women and girls. The annual distribution of beneficiaries is detailed in the table below. These interventions encompassed small-scale, community-based water infrastructure utilizing diverse water sources, gravity-fed systems, and rainwater harvesting, complemented by technical assistance and guidance aligned with the Building Back Better principles.

YEAR	BENEFICIARIES BASED ON HANDOVER TO LOCAL AUTHORITIES AND COMMUNITIES
2021	2,295
2022	21,000
2023	23,000
2024	79,000
TOTAL	125,295

Throughout its duration, the project also implemented progressive Monitoring and Evaluation (M&E), tracking environmental, social, financial, and project management risks. Key M&E successes included the development of Annual Project Performance Reports (PPR) and a Community Project Performance Monitoring & Evaluation (CPPME) tool, designed to assess various aspects of the project, including planning, construction, and maintenance of climate and disaster-resilient infrastructure systems.

3. Efficiency (4)

The project, with a budget of USD 4.5 million and a duration of 54 months from January 2017 to June 2021, was implemented efficiently across three provinces in Lao PDR: Attapeu, Salavan, and Sekong. Of the total budget, USD 2.8 million was invested in resilient water-related infrastructure, benefiting 189 villages. Local construction companies, selected through a competitive bidding process, 66 water-related infrastructures in Attapeu, 61 in Salavan, and 62 in Sekong were completely built. Despite Covid-19 lockdowns from 2020-2022, which caused delays in construction and material transportation.

The institutional arrangement involved UN-Habitat signing separate Agreements of Cooperation (AOC) with the Department of Public Works and Transport (DPWT) in each province. UN-Habitat's country office provided regular support and consultation to the implementing agencies through various means, including formal meetings, technical consultations, and ad hoc communications. The project's success was largely attributed to the experience and technical expertise of the UN-Habitat team, particularly the Chief Technical Advisor and consultants, who were skilled in drafting water supply designs and preparing necessary documents.

Cost-effectiveness was a key feature of the project. The allocation of USD 2.8 million for concrete adaptation costs focused on the most vulnerable communities in 189 settlements, constructing infrastructure to enhance resilience against floods and droughts. UN-Habitat's cost-effective designs allowed for a greater number of beneficiaries. Additionally, US$687,640 was allocated to Components 1 and 2, supporting planning and capacity building to ensure sustainability and replication potential. The project's partnership model with communities and local government institutions significantly reduced costs through substantial in-kind and in-cash support, such as communities contributing labor for excavation and basic construction work.

4. Impact Outlook (5)

The project's main achievement was providing water supply infrastructure to vulnerable communities in three provinces, significantly improving their resilience to climate hazards such as droughts and floods. Surveys indicated that most stakeholders and beneficiaries reported increased satisfaction with their water supplies. The project contributed to normalizing resilient infrastructure and raised awareness among government authorities about climate vulnerability in their areas through climate risk and vulnerability assessments (CRVA) and relevant training. The introduction of clean piped water supply systems marked a significant impact in local communities, with many households gaining access to sanitation facilities and piped water for the first time. Interviews revealed high appreciation for these improvements among beneficiaries.

In addition, local employment during the construction phase provided villagers with new skills in construction and exposed them to Build Back Better (BBB) principles. While the long-term impact on employment opportunities remains to be seen, the project has laid the groundwork for improved construction practices in these communities.

The project successfully implemented interventions in all targeted areas of Attapeu, Salavan, and Sekong provinces, utilizing the allocated USD 2.8 million for concrete adaptation activities. These areas, characterized by extreme poverty (>60% of settlements), high percentages of ethnic minorities, limited access to basic services, and regular climate-related disasters, saw the installation of resilient water-related infrastructure benefiting over 125,000 people.

Field interviews also revealed that the water supply provided by the project has had a major positive impact on livelihoods. Villagers across all provinces noted the ability to access water year-round, regardless of wet or dry seasons, as a significant benefit. Many interviewees specifically highlighted the positive impact of having water taps installed in each house, demonstrating the project's tangible benefits to individual families and the broader community.

5. Sustainability (4)

The project's sustainability was addressed through institutional, technical, and financial aspects. Institutionally, it brought together key stakeholders at provincial, district, and village levels, training staff in tool usage and infrastructure maintenance. Local government officials were equipped to support community-driven processes, with tools localized for long-term use. Infrastructure sustainability was promoted through strong community engagement in design, planning, and construction, ensuring appropriateness and local ownership. Formal arrangements were made with provincial governments through Agreements of Cooperation (AoC) to ensure long-term maintenance of the infrastructure beyond the project's completion.

Technically, the project developed infographic profiles for 189 villages across three provinces, providing comprehensive overviews of each village's conditions and priority needs. This information proved invaluable for policymakers, particularly at the provincial level, in prioritizing water supply system construction. A web portal was also developed by UN-Habitat for knowledge management sustainability, capturing and disseminating all project information. The emphasis on technical training, knowledge generation, and dissemination was also taken into account for project sustainability, further strengthened by capacity building activities.

Financially, the project established a sustainable model for maintaining resilient water infrastructure through partnerships with local public utilities and communities. A pro-poor tariff system was implemented for water supplied by the project-constructed infrastructure, managed by District Nampapa (NPSE). This tariff, based on a 'willingness to pay' study, ensures system maintenance while remaining affordable for communities. Water supply groups were also established at the village level to oversee these arrangements.

6. Coherence (4)

The project demonstrated significant synergies with other UN-Habitat initiatives, particularly in Attapeu province's water and sanitation sector. Previous projects, such as the Government of Japan-funded rehabilitation project in flood-affected areas of Sanamxay District, contributed valuable experience and capacity to the current project. This long-term relationship with provincial water utilities has enabled knowledge transfer and improved efficiency across successive projects.

A standout feature of the project was the implementation of climate risk and vulnerability assessments (CRVA) in three key provinces. The success of these assessments has led the Lao PDR government to request UN-Habitat's assistance in conducting a comprehensive national CRVA, showcasing the project's potential for scaling up and expanding successful strategies across the country. This initiative significantly contributes to broader efforts in building climate resilience at various levels in Lao PDR.

The project aligned with several climate change adaptation initiatives in the country, focusing on improving water and sanitation infrastructures, schools, medical dispensaries, and community resilience through design and structural improvements for vulnerable households. Climate change vulnerability assessments were conducted through the lenses of exposure, sensitivity, and adaptive capacity to inform climate-adaptive interventions.

UN-Habitat also worked closely with relevant partners and line ministries, including the Ministry of Public Works and Transport, Ministry of Natural Resources and Environment, as well as their provincial and district departments. This collaboration focused on community-based water supply and sanitation issues across urban, peri-urban, emerging urban towns, and rural areas in Lao PDR. The project's success in implementing effective methodologies and fostering strong partnerships has positioned it as a model for future climate resilience initiatives in Lao PDR and potentially beyond, demonstrating the value of integrated approaches to addressing climate change impacts on vulnerable communities.

7. Cross-cutting issues (4)

The project demonstrated a strong commitment to gender equality and social inclusion (GESI) throughout its implementation. It engaged representatives from various ethnic groups using a community-based, people's process approach, considering the needs of women, disabled people, ethnic minorities, and children at all stages. This inclusive approach aimed to ensure long-term

sustainability and foster institutional learning, participation, and knowledge exchange. Gender rights were carefully considered during implementation, with efforts made to respect diverse beliefs and cultural practices. Provincial DPWT officials reported integrating gender and human rights concerns into the project, consulting local people about their spiritual and cultural practices before construction began. These considerations were incorporated into water supply design and construction.

Survey results showed minimal differences between men's and women's responses regarding project satisfaction. Both genders reported high levels of appreciation for the built water supply, with 86% of male respondents and 80% of female respondents rating their satisfaction with water taps at 4 or 5 out of 5. The project made efforts to include people with disabilities, though only two of the 20 surveyed households reported having a member with a disability. For example, in Salavan district, respondents noted that women and people with disabilities participated in consultation activities and village-level meetings.

Evaluation Criteria Rating	
Rating of performance	**Characteristics**
Highly satisfactory (5)	The project had several significant positive factors with no defaults or weaknesses
Satisfactory (4)	The project had positive factors with minor defaults or weaknesses
Partially satisfactory (3)	The project had moderate to notable defaults or weaknesses
Unsatisfactory (2)	The project had negative factors with major defaults or weaknesses
Highly unsatisfactory (1)	The project had negative factors with severe defaults or weaknesses

8. Recommendation

Project Planning and Implementation

- **Project Duration & Timing**: These types of complicated projects with 189 sub-projects spread across 3 provinces, 8 districts, and targeting remote settlements need a longer project duration, especially considering hard interventions, particularly construction work, must be conducted in the dry season or before the rainy season starts, as roads are often impassable during the rainy season.
- **Risk Mitigation**: The project must develop a plan for unexpected events that can cause delays in project implementation. For example, during the Covid-19 pandemic, work at the beginning of the year was suspended, speeding up the end of the project year and causing an extension.
- **Monitoring and Evaluation**: Ensure monitoring and evaluation (M&E) work continues after the project has ended in order to track if the built infrastructure remains functional. The project can seek support for monitoring this from similar projects under UN-Habitat.
- **Unexpected Needs**: During the interview, local people highlighted the need for toilet facilities. These could be considered for future initiatives.

Synergies and Partnerships

- **Collaboration with Government and Partners**: There is an opportunity to further develop synergies with other development and government partners in climate change adaptation and disaster risk management (DRM). This can be linked to the work UN-Habitat is doing in climate change adaptation, particularly in partnership with the Ministry of Natural Resources and Environment (MONRE).
- **Cross-Project Synergies**: Seek synergies and support with other projects on conducting climate vulnerability assessments or expanding them in other provinces and regions of the country.
- **Future Government Cooperation**: Secure support to enable UN-Habitat to respond to the Government's request for similar projects in other regions of the country.

Capacity Building and Knowledge Management

- **Build Back Better (BBB) Concept**: Promote the Build Back Better (BBB) concept in training manuals where possible. This could be incorporated into future training in other provinces.
- **Sustainability of Capacity Built**: Provide further support to ensure sustainability of capacity built and water infrastructure in the three project provinces and communities. Consider possible synergies with other ongoing or future projects such as AF2 and AF3 projects.
- **Knowledge Management System**: In addition to the internal database, create an accessible knowledge repository as part of the UN-Habitat knowledge management system so that infrastructure designs, training manuals, guidelines, etc., can be deposited as resources for future use by staff on other projects.
- **Share Monitoring Tools**: Explore the possibility of sharing widely the robust internal monitoring mechanism UN-Habitat established via its PPME tool.

Reputation and Knowledge Sharing

- **Showcasing Good Practices**: Find opportunities to present and showcase good project implementation practices (such as built small-scale water infrastructure) to the government and development partners.
- **Leveraging Positive Standing**: Build on the good standing that this project has given UN-Habitat in climate change adaptation and DRM.
- **Knowledge Exchange**: Share experiences, good practices, lessons learned, and challenges with similar projects under UN-Habitat, such as AF1 and AF2 projects.
- **Continued Communication with Local Authorities**: Continue communicating with local government authorities to ensure good cooperation for existing and future projects.

1. Introduction

1.1. Country Context and Project Background

Climate change presents Lao People's Democratic Republic (PDR) with significant challenges as current natural disasters are being exacerbated by increased climate variability. According to the recent studies, Lao PDR remains highly vulnerable to climate change. The projected changes in Lao PDR's mean annual temperatures are predicted to increase by 3.6°C by 2090 against the baseline data over 1986-2005, with similar projected rates of warming for all seasons.[1] Climate change has exposed the Lao PDR to a wide range of climate-related hazards over the past few decades, including severe and frequent floods and droughts.[2]

With reference to the extreme events that have occurred over the past three decades, the frequency and intensity of floods have been observed to have increased, often associated with typhoons and tropical storms.[3] From 1970 to 2010, for example, 33 extreme events occurred, mostly floods, affecting almost 9 million people and causing economic loss and damages of over USD 400 million.[4] Lao PDR is also very susceptible to droughts. There were five major drought events in the last 40 years, affecting over three million people.[5] Increases in temperature and the prolonged dry season are expected to accelerate the intensity of droughts and increase water stress, particularly in cultivated areas. The severity and frequency of floods and droughts triggered by climate change, are thus likely to affect both household crop production and food security in the Lao PDR.[6]

Water-related and shelter infrastructures are poorly developed in Lao PDR, and the impact of climate-induced hazards, including floods, droughts, and landslides, is severely affecting vulnerable communities, potentially deteriorating their health and well-being. The impacts of extreme climate events on agriculture are severe and include destroyed crops and seeds, thereby weakening food security and livelihoods. To improve the resilience and adaptive capacity of populations in Lao PDR, especially those living in the southern provinces, it is imperative to recognize what makes a community 'climate-fit' and how to improve the resilience of 'climate-weak' populations. Geography is an important consideration; the challenges are inherently greater in places that are more exposed to disasters such as floods, droughts, and landslides. Increased population pressure, both on urban areas and on marginal land, results in people living in more disaster-prone areas, such as along river banks, in low-lying areas, and below mountain slopes.[7]

As stated in the 8th Five Year National Socio-economic Plan (2016-2020), the government's main goal is to continue reducing poverty and to graduate from the Least Developed Country (LDC) Status by 2020.[8] The government aims to accomplish this through 1) sustained, inclusive economic growth, 2) achievement of off-track Millennium Development Goals (MDGs) through the provision and use of

[1] World Bank (2021). Climate Risk Country Profile: Lao PDR. https://climateknowledgeportal.worldbank.org/sites/default/files/2021-06/15505-Lao%20PDR%20Country%20Profile-WEB.pdf
[2] ADB. (2019). Disaster Risk Assessment: *Lao PDR Sustainable Rural Infrastructure and Watershed Management Sector Project*
[3] UNDP. (2009). NATIONAL ADAPTATION PROGRAMME OF ACTION TO CLIMATE CHANGE: *LAO PDR. United Nations Development Programme (UNDP).*
[4] World Bank (2011). Climate Risk and Adaptation Country Profile: *Lao PDR Vulnerability, Risk Reduction, and Adaptation to Climate Change.*
[5] Ibid note 3
[6] Ibid note 4
[7] UN-Habitat (2016). Project Document: *Enhancing the climate and disaster resilience of the most vulnerable rural and emerging urban human settlements in Lao PDR*
[8] GoL (2015). The 8th Five Year National Socio-economic Plan online: file:///Users/jorisoele/Downloads/Draft_8th_NSEDP_2016-20.pdf

services that are balanced geographically and distributed equitably between social groups and, 3) reduced effects of natural shocks as required for LDC graduation and sustainable management of natural resources exploitation.

UN-Habitat, the UN agency for human settlements, promotes socially and environmentally sustainable settlements. In Lao PDR, the UN-Habitat portfolio of projects has focused on provision of basic services to the poor through community-based interventions in settlements across Lao PDR as well as issues related to disaster response, climate change, renewable energy, land management and decentralisation of basic services. UN-Habitat is increasingly working on disaster risk management and climate-related issues in response to the needs of communities, particularly poor communities who are often the most adversely impacted by climate change. UN-Habitat, since 2007, has been working in the southern provinces focusing on issues related to disaster risk reduction, water, and sanitation and hygiene provisions besides improved shelter construction.

Led by the UN-Habitat Lao PDR Country Office, with the funding support from the Adaptation Fund (AF), the project "*Enhancing the climate and disaster resilience of the most vulnerable rural and emerging urban human settlements in Lao PDR*" was executed since 2017, with an objective is to "enhance the climate and disaster resilience of the most vulnerable human settlements in Southern Lao PDR by increasing sustainable access to basic infrastructure systems and services, emphasizing resilience to storms, floods, droughts, landslides and disease outbreaks". It combines a number of horizontally and vertically interrelated policy, planning and capacity development initiatives and has at its core the delivery of resilient infrastructure and services in target settlements that are characterized by a high exposure to climate hazards.

The project was implemented by the UN-Habitat Lao Country Office as the implementing entity in close cooperation and partnering with the Ministry of Public Works and Transport (MPWT) and Provincial Departments of Public Works and Transport and Nampapa State-own Enterprise of three project provinces of Attapeu, Salaavan and Sekong as the executing entity for coordination and the implementation of the project.[9] The project duration was 54 months from February 2017 to June 2021 with a total budget for the project of US$4.5 million. Due to the restrictions during the COVID-19 pandemic, the project was approved the no-cost extension for 18 months (2023).

The planned components and interventions are strongly rooted in national and local priorities while their basis is supported in the reshaped global development and climate change agenda. In particular, the project contributes to achieving the Sustainable Development Goal (SDG) 11 'Make cities and human settlements inclusive, safe, resilient and sustainable' (and several of its targets), and Goal 6 'Ensure availability and sustainable management of water and sanitation for all' (and its targets). Insights from the New Urban Agenda were also incorporated in the framework. There are four main components under this project with corresponding outcomes and outputs, as follows:

1. Component 1: Institutional level strengthening to reduce vulnerability in human settlements (soft)
    - Outcome 1.1: Reduced vulnerability at national, provincial and district level to climate-related hazards and threats

[9] UN-Habitat (2016). Project Document: *Enhancing the climate and disaster resilience of the most vulnerable rural and emerging urban human settlements in Lao PDR*

- Output 1.1.1: Integrated climate change vulnerability and disaster risk reduction assessments (incl. maps) conducted/produced in target areas.

- Outcome 1.2: Increased awareness on resilience building of human settlements and infrastructure systems
  - Output 1.2.1: Capacity development support provided to national government and local authorities.
- Outcome 1.3: Resilience building measures identified by provincial and district authorities which can feed into local development plans, emphasizing community climate change resilience, disaster preparedness, land use planning, water resource management and infrastructure development
  - Output 1.3.1: Provincial and district-level Climate Change Action Plans – including (as appropriate) implications for land use, water resource management and infrastructure developed.

2. Component 2: Building capacity at the human settlement and community level for climate resilience (soft)
   - Outcome 2.1: Community capacity to plan, construct and maintain resilient water-, drainage-, sanitation-, related infrastructure systems and to apply improved hygiene standards strengthened.
     - Output 2.1.1: Trainings and community action planning workshops provided to communities for the development of community resilience plans and to plan, construct and maintain climate and disaster resilient water, drainage, and sanitation related infrastructure systems and to improve hygiene standards.
3. Component 3: Enhance climate and disaster resilient infrastructure systems in human settlement (hard)
   - Outcome 3.1: 47,000 people have access to storm, flood, landslide-, drought- and disease resilient water, drainage, sanitation and health related infrastructure systems.
     - Output 3.1.1: Vulnerable infrastructure strengthened or new resilient infrastructure constructed in response to climate change impacts, including variability.
4. Component 4: Knowledge Management, Advocacy and Monitoring
   - Outcome 4.1: Project implementation is fully transparent. All stakeholders are informed of products and results and have access to these for replication.
     - Output 4.1.1: Project activities and results are captured and disseminated through appropriate information for the beneficiaries, partners and stakeholders and the public in general.[10]

Table 1: Project overview

Location	Lao PDR
Implementing Entity	UN-Habitat – Lao PDR Country Office
Executing Entity	Nampapa State-own Enterprise (NPSE) and Provincial Departments of Public Works and Transport (PPWT) of Attapeu, Salavan and Sekong
Funding Source	Adaptation Fund (AF)
Grant	USD 4,500,000

[10] UN-Habitat (2016). Project Document: *Enhancing the climate and disaster resilience of the most vulnerable rural and emerging urban human settlements in Lao PDR*

Duration	February 2017 – August 2023
Objective	enhance the climate and disaster resilience of the most vulnerable rural and emerging urban human settlements in Lao PDR

Source: Author, based on project document

The seven-year project, including the COVID-19 pandemic period, has been completed in August 2023. Thus, in line with the Evaluation Policy of the Adoption Fund 2022, the project was approved with the evaluation framework of terminal evaluations following the mid-term evaluation of the project which was conducted by the third party, Arcadis Nederland B.V., in May 2019.

The terminal evaluation is conducted at the request of UN-Habitat as part of the organisational effort to perform systematic and timely evaluation of all projects and to ensure that they are aligned with the organisational mandates, goals and activities. The evaluation is mandatory according to the 2013 UN-Habitat Evaluation Policy and the 2016 Revised UN-Habitat Evaluation Framework which require that a project of USD 1 million and above should have an end of project evaluation. Evaluation is central to UN-Habitat's mandate and activities, including programme planning, budgeting and the implementation cycle. Evaluation also supports UN-Habitat to manage its programmes in terms of their results by assessing the extent to which UN-Habitat humanitarian and development interventions effectively deliver results.

This terminal evaluation assessed project performance, covering the full term of the project from the design phase through to the project completion. It was carried out from July to August 2024. The evaluation synthesised achievements, results and lessons learned from the project. In addition to assessing the expected accomplishments of the project, the evaluation also had a focus on the cross-cutting issues of gender and human rights. The target audiences for the evaluation results are the UN-Habitat and other implementing partners, intended project beneficiaries and other relevant stakeholders.

The report begins with an introduction chapter which lays out the background and context of the project. This is followed by an overview of the project intervention and achievement. The evaluation approach and methodology are then explained. This is followed by the key findings of the evaluation. The final three sections report the lessons learned, recommendations and evaluation conclusion.

1.2. Target Beneficiaries and Project Location

The primary beneficiaries of the targeted project are 47,000 people (of which 24,000 women and girls) in 189 settlements of three provinces of Attapeu, Salavan and Sekong (see Figure 1). In these settlements, at least 60 per cent of the population lives in poverty and they are affected by floods, droughts, landslides and climate related diseases. No or limited basic services exist in these settlements. Moreover, the population consist of a high percentage of ethnic minorities. These groups all belong to the Mon-Khmer ethno-linguistic family. This family is especially vulnerable to climate change because they are the poorest among the ethno linguistic families (with an average poverty rate is 54.3%). Besides that, they lack access to basic infrastructure, services, including healthcare and information (due to remoteness and langauge and cultural barriers) and they are exposed to multiple climate change related hazards.

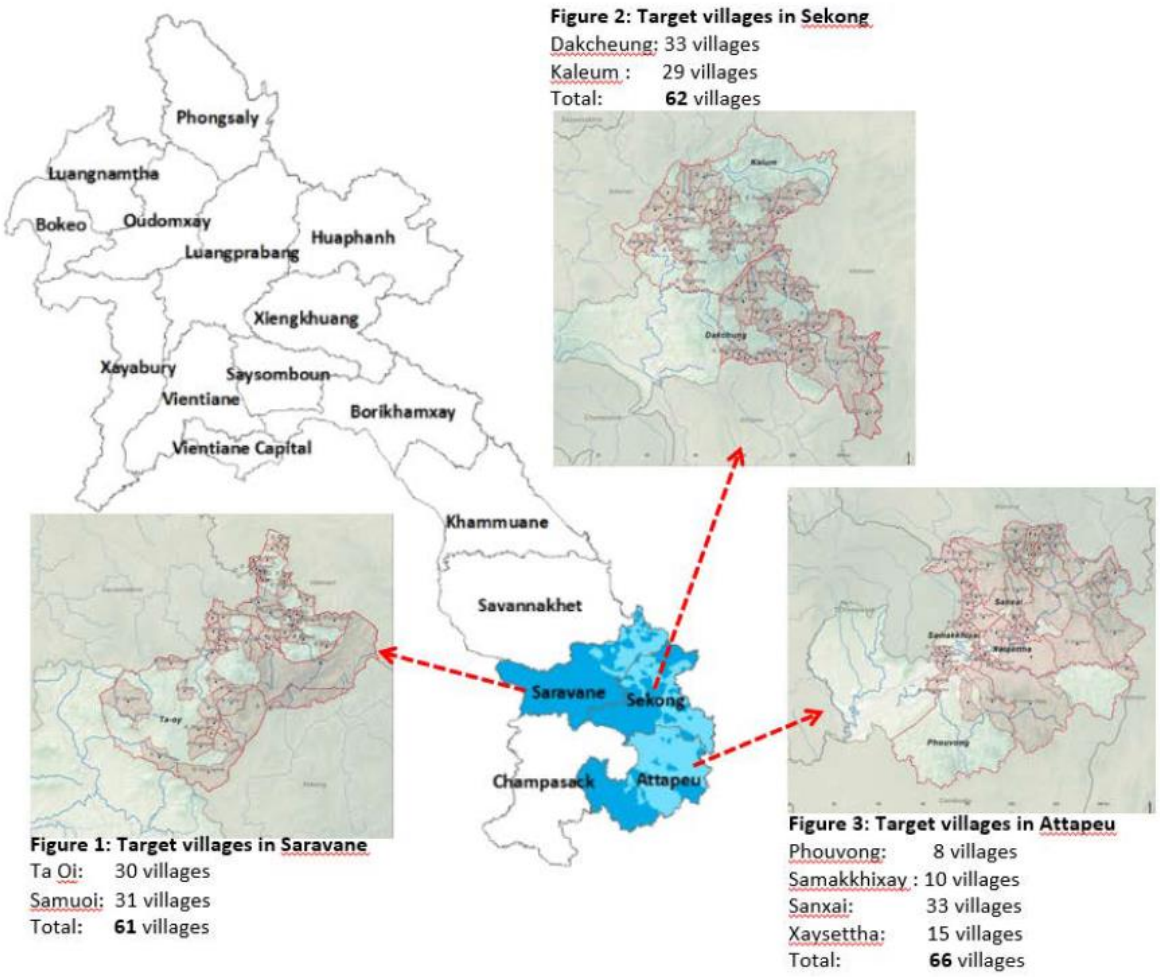


Figure 1: Target villages and districts in project provinces (Attapeu, Salavan and Sekong)

1.3. Purposes and Objectives

1.3.1. Purposes

The terminal evaluation aims to provide independent evidence regarding the project's performance and its achievements at the objective, expected outcomes, and output levels. It also seeks to enhance learning by generating insights, lessons learned, and recommendations to inform management decision-making for future programming, funding, and implementation modalities.

More specifically, the evaluation will inform the development of the future portfolio, with particular attention to identifying opportunities and areas for future action that will strengthen results and further enhance climate resilience in Lao PDR. Additionally, it will leverage influence strategies and identify opportunities for scaling up and replicating the implementation approach used.

1.3.2. Objectives

The objective of the evaluation is to assess, as systematically and objectively as possible the relevant, efficiency, effectiveness, sustainability impact outlook and coherence of the project. The specific objectives of the evaluation are:

- To assess the performance of the project in terms of achievement of the results at objective, expected accomplishment (outcome) and output levels;
- To assess the **relevance**, **efficiency**, **effectiveness**, **sustainability**, **impact**, and **coherence** of the project in improving conditions of the target communities in terms of climate resilience building;
- To assess project management modalities, appropriateness of partnerships, working arrangements, adequacy of resources and how these may have impacted on the effectiveness of the project;
- To assess the how the COVID -19 affected the performance of the project;
- To assess how cross-cutting issues such as gender equality, youth and human rights were integrated in the project; and
- To identify lessons learned and make strategic, programmatic and management recommendations on what further needs to be done to effectively promote and improve climate resilience in targeted settlements.

Internally, the evaluation will contribute to UN-Habitat's planning, reporting and accountability. The sharing of evaluation results from this evaluation will inform the UN-Habitat, Adaptation Fund Board and local implementing partners and other stakeholders on what worked well, what did not work well and why.

1.4. Scope of Evaluation

The evaluation focused on the life cycle of the project (from design phase, through its implementation phase), covering the entire period from February, 2017 to August 2023. It will assess the planning, funding, implementation and, monitoring and reporting on the project as well as assess achievements of outputs and expected accomplishments (outcomes) and processes that influenced the achievements, including readiness, ownership, stakeholder involvement, financial management, supervision and backstopping. Further, it will identify and analyze constraints, challenges and opportunities, and assess how cross-cutting issues of gender equality, human rights, climate and youth have been integrated in the planning and implementation of the project.[11]

Apart from evaluating performance of the project focusing on achievements in terms of outputs, outcomes and objective, the evaluation also answered evaluation questions, which covered the evaluation criteria **of relevance, effectiveness, efficiency, impact outlook, sustainability, coherence** as well as assess the integration of cross-cutting issues. The following questions are the minimum requirement but not limit the analysis made in the report of terminal evaluation (see Table 2).

Table 2: Evaluation criteria and questions

Criteria	Evaluation questions
Relevance	Did the project do the right things? To what extent were the projects objectives and design relevant to beneficiaries, Adaption Fund, UN-Habitat, country, institutions' needs?

[11] UN-Habitat (2024). Terms of Reference: *Terminal Evaluation of the "Enhancing the climate and disaster resilience of the most vulnerable rural and emerging urban human settlements in Lao PDR"*

Effectiveness	To what extent did the project enhance the climate change resilience of the targeted settlements?
Efficiency	How well were resources used?
Impact	What difference has the project made?
Sustainability	To which extent will the benefits and achieved outcomes of the project continue or are likely to continue when funding from the Adaption fund ends?
Coherence	To what extent did other projects, support or complement the project?
Cross-cutting issues	To what extent were cross-cutting issues of gender, human rights, environment and disability considered and integrated into UN-Habitat Programme design and implementation?

Source: Author, based on the terminal evaluation TOR

2. Overview of the Evaluated Intervention

2.1 Alignment with UN-Habitat Priorities

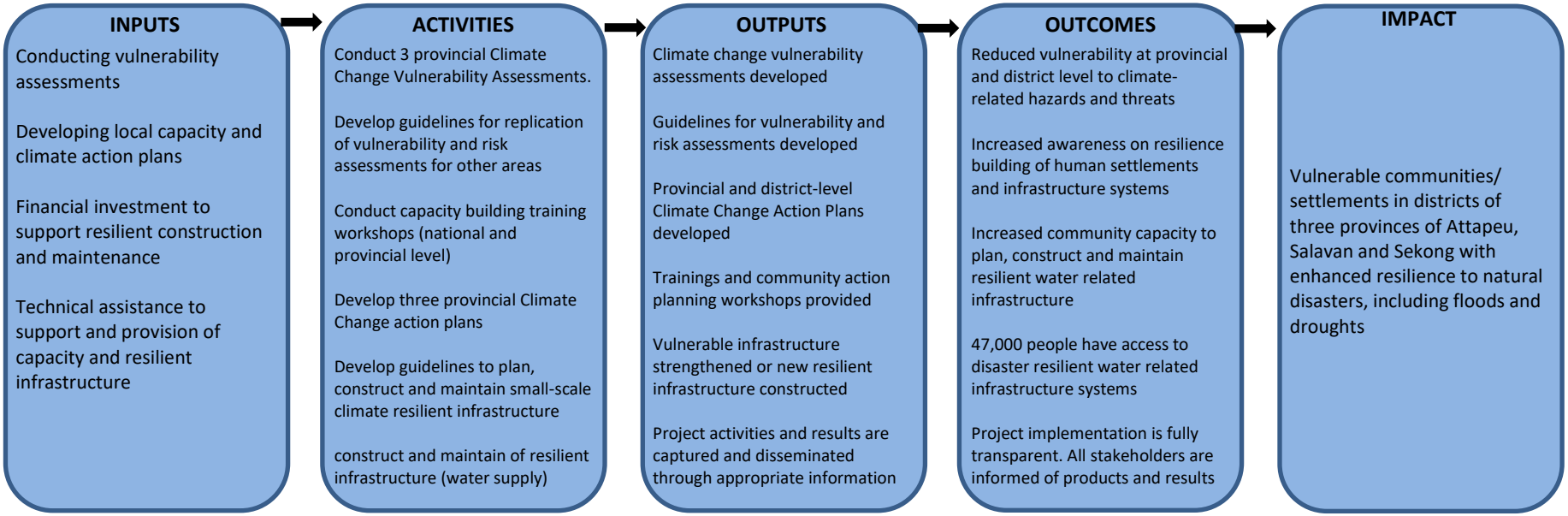
The project was designed and implementation commenced in the time of UN-Habitat's Strategic Plan 2014-2019. It was aligned with the strategic plan, and supports Focus Areas 5 (Housing and Slum Upgrading) and 6 (Risk Reduction and Rehabilitation). The project covers four of the identified five key entry points to Focus Area 6, basic infrastructure and services; land use and tenure; and climate change and urban environment. In addition, the cross-cutting issues, particularly climate change and human rights, were mainstreamed into the project.

2.2 Theory of Change

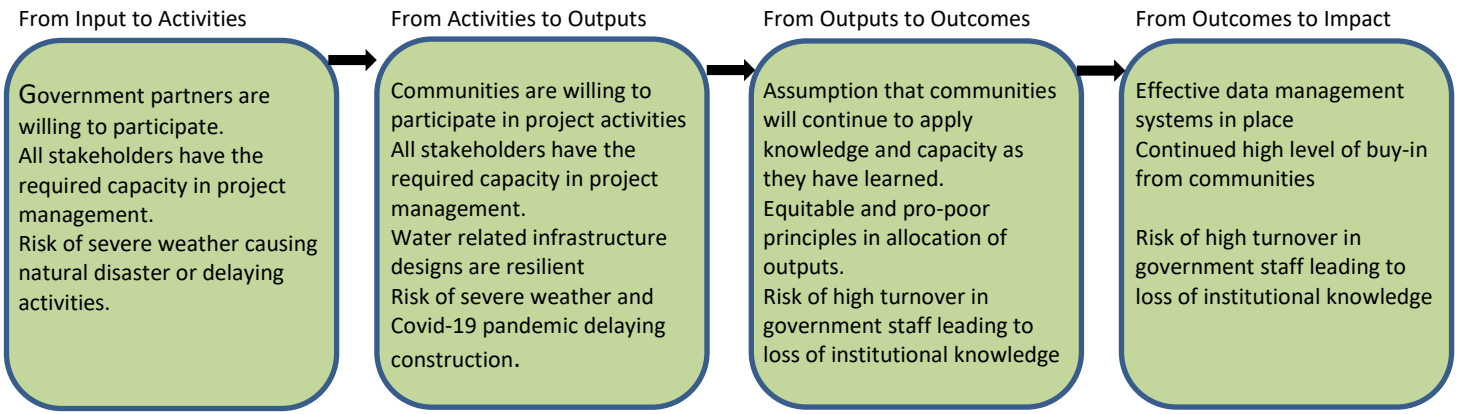
The evaluation Terms of Reference (TOR) require using a Theory of Change (TOC) framework, which outlines the causal chain from project design to expected impact, including activities, outputs, outcomes, and impacts along with assumptions and risks. The TOC was developed to align with the project logframe, and is shown as Figure 2. The changes that were made demonstrate the ability of both the donor and the coordinating agency to pivot in response to changes in context, and to meet the needs of the Government and beneficiaries. The changes are clearly shown in the documentation which was produced at different stages of the project. The evaluation was based on the workplan, logframe and theory of change.

Due to uncertainties, the TOC may need adjustments throughout the project. The evaluation consultant reviewed project documents, including the logframe and TOC, but found a lack of clarity in causal links due to unidentified risks and assumptions. Adaptations made since the project's inception also need to be documented. The evaluation consultant has created a following TOC based on available project information and staff consultations. The TOC shows steps in the project from start to end, including activities, outputs, outcomes and impacts, and provides assumptions and risks between project steps which is shown in Figure 2 below.

Figure 2: Theory of change (TOC)



ASSUMPTIONS AND RISKS



2.3 Project Key Partners and Stakeholders

The key partners and stakeholders in the project were UN-Habitat and the Government of Lao PDR, with the Adaptation Fund providing funding through the provision of a grant. Specifically, the project was implemented through two partnerships between and UN-Habitat – Lao PDR Country Office and Provincial Departments of Public Works and Transport (DPWT) of Attapeu, Salavan and Sekong Provinces, as the institutional responsibilities for the basic infrastructure sector lie with MPWT at the central level. By partnering with the key government institutions in the water supply sector, the project was firmly anchored in the country's recovery programme.

As the overall coordinator, a number of units from UN-Habitat had roles in the project. The lead organisational unit was UN-Habitat's Regional Office for Asia and the Pacific (ROAP). The UN-Habitat Lao PDR Country Office, which is an office of the Urban Basic Services Branch, coordinated with all other stakeholders and was responsible for the project implementation. Team members of UN-Habitat Lao PDR's climate change-related projects also contributed to the project which included the Regional Advisor, the Chief Technical Advisor, Project Manager, and Project Assistant.

While the project management team of the government entities comprised representatives from the WASH sector. It included DPWTs of Attapeu, Salavan and Sekong Provinces, Nam Papa State-Owned Enterprise (NPSE) in these provinces. In each province, the implementing entity worked closely with the local authorities, local communities, project consultants and UN-Habitat. Local government authorities play a key role in planning, developing and implementing the community infrastructures in close consultation with the communities and other stakeholders. Particularly, the District Authority facilitated the mobilisation of local resources and knowledge in the target areas to support project implementation and sustainable utilisation of the services and facilities after project completion. The District Authority was also responsible for ensuring access by poor and excluded groups to the services and facilities provided by the project. The project utilised a community-based approach which has proved to be an efficacious approach in previous UN-Habitat projects in Lao PDR.

In addition to MPWT, MPI and MONRE were all stakeholders external to the project. MPI, in particular, is the ministry which was in charge of the project approval in the beginning phase of the project. While MONRE is led in the climate change related work, especially ones related to adaptation and building resilience. Other national governments/ministries are responsible for coordination and monitoring with UN-Habitat as well as in knowledge management-related activities, such as diffusion of results to provinces that are not directly involved in the project.

2.4 Key Assumptions

The following key assumptions were identified in the PAG and logframes:

- Data collecting is accurate, collaborative and inclusive
- Government institutions are willing to participate
- Information sharing is transparent and accessible by all
- The beneficiaries are selected on a need basis, and the construction process is non-discriminatory and inclusive Local artisans are willing to learn the relevant principles
- Capacity building workshop considers the local context and tailors the module/guideline for the audience
- All stakeholders have the required capacity in project management

- There is a high level of buy-in from target communities, and direct beneficiaries of the basic infrastructure (water supply)
- Effective data management systems in place

2.5 Project Achievement

The project achieved its objective of providing capacity development and climate resilient infrastructure to the vulnerable communities in three provinces of Attapeu, Salavan and Sekong. In particular, the project has a target of 189 settlements/communities and 47,000 people (of which 24,000 women and girls) are primary beneficiaries (see Annex 14: List of infrastructure built in 189 villages/communities in project provinces). The logic model of the project presented in the *Project Results Framework* is summarized in Table 3 below. It includes for components, six outcomes and six outputs, and their respective activities which were achieved at the end of the project. At the time of the evaluation, activities in three provinces of Attapeu, Salavan and Sekong were completed. The completion meetings and achievement of the project activities, especially the water supply construction in the project districts and provinces, are shortly summarised below:

- **Attapeu**: The project completion meeting was conducted on 9 June 2023 in Attapeu province with relevant stakeholders. 66 physical water-related infrastructures were completely constructed (100%) in four Districts (Samakkhisay, Saysettha, Sansay and Phouvong) of Attapeu Province. These include new small-scale water infrastructure using solar pumps, new gravity feed systems with slow sand filtration tanks, and new 24/7 small-scale water supply with distribution networks and household water meter connections in rural areas. The project was completed in 66 villages, benefiting a total of 76,476 people, of which 41,569 are women.
- **Salavan:** The project completion meeting was conducted on 7 June 2023 in Salavane province with relevant stakeholders. The meeting concluded that 61 physical infrastructures were constructed (100%) in two Districts (Taoi and Samuay) of Salavane Province. This includes eco-friendly innovations such as small-scale water Infrastructure Systems using "Hydraulic Ram Pumps". These pumps use the force of gravity to pump water, without using any electricity or gasoline, thus keeping the costs of operations and maintenance at a minimum. Other completed infrastructures include new small-scale water systems using solar pumps, new gravity feed systems with slow sand filtration tanks, and new 24/7 small-scale water supply with distribution networks and household water meter connections in rural areas. The project was completed in 61 villages, benefiting a total of 23,601 people, of which 12,238 are women.
- **Sekong**: The project completion meeting was held on 15 June 2023 at Nampapa office in Sekong province with relevant stakeholders. It was reported that 62 physical infrastructures were completely built (100%) in two Districts (Kaleum and Dakcheunk) of Sekong Province. These include new small-scale water infrastructure using solar pumps, new gravity feed systems with slow sand filtration tanks, and new 24/7 small-scale water supply with distribution networks and household water meter connections in rural areas. The project was completed in 62 villages, benefiting a total of 21,824 people, of which 11,202 are women.

Table 3: Project outcomes, indicators, targets, activities and achievement status[12]

Project Outcome and Output	Indicator and Target	Activity and Result	Achievement Status
Project component 1: Institutional level strengthening to reduce vulnerability in human settlements			
Outcome 1.1. Reduced vulnerability at national, provincial and district level to climate-related hazards and threats	Number of local vulnerability assessments reports that are available/processed to national government agencies for policy making. Targets: 3 provincial reports 8 districts reports	Conduct 3 provincial Climate Change Vulnerability Assessments. Conduct 8 District-level Climate Change Vulnerability Assessments (highlighting specific vulnerabilities in 189 settlements. Develop guidelines for replication of vulnerability and risk assessments for other areas	Achieved
Output 1.1.1. Integrated climate change vulnerability and disaster risk reduction assessments (including maps) conducted/produced in target areas	Number of climate change vulnerability and disaster risk assessments produced at the provincial, district and settlement/ community level. Targets: 3 Provincial 8 district (highlighting specific vulnerabilities in 189 settlements.		Achieved
Outcome 1.2. Increased awareness on resilience building of human settlements and infrastructure systems as a result of enhanced institutional capacity	Number of targeted institutions with increased capacity to reduce vulnerability to climate variability risks. Targets: National Government / MPWT (1) can provide guidance to sub-national level on resilient infrastructure development Provincial governments (3) and district governments (8) actively participate and	Project tool compilation and development (comprising of assessment and planning approach, guidelines for resilient infrastructure, and technical standards, environmental and social safeguards and community action planning tools) National Stakeholder Workshop (national and provincial participants)	Achieved

[12] UN-Habitat (2016). Project Document: *Enhancing the climate and disaster resilience of the most vulnerable rural and emerging urban human settlements in Lao PDR*

	guide community level adaptation investments	National training of facilitators workshop	
Output 1.2.1. Capacity development support provided to national government and local authorities	Number of staff trained to roll-out the project and to improve community-level resilience. Targets: National-level government (20); Provincial-level (30); District-level (40)	(national and provincial participants) District level workshops in support of project roll out (provincial and district-level participants)	Achieved
Outcome 1.3. Resilience building measures identified by provincial and district authorities which can feed into local development plans emphasizing community climate change resilience, disaster preparedness, land use planning, water resource management and infrastructure development.	Provincial governments and district authorities are aware of pro-poor, rights-based, gender sensitive, climate change adaptation options. Targets: 3 provincial development plans 8 district development plans	1.3.1.1 Develop three provincial Climate Change action plans including implications for land use, water resource management and infrastructure (e.g. on maps). 1.3.1.2 Develop eight district-level Climate Change action plans, highlighting particular vulnerabilities of the 189 communities, including implications for land use, water resource management and infrastructure (e.g. on maps)	Achieved
Output 1.3.1. Provincial and district-level Climate Change Action Plans – including (as appropriate) implications for land use, water resource management and infrastructure, developed. Based on the vulnerability assessments and in close consultation with provincial and district level authorities and the communities concerned, evidence-based and specific adaptation options are identified.	Number of government entities on provincial and district level that developed initial climate change action plans and adaptation options. Targets: 3 provincial development plans 8 district development plans		Achieved
Project component 2: Building capacity at the human settlement and community level for climate resilience			
Outcome 2.1. Community capacity to plan, construct and	No. of targeted communities with increased capacity, incl.	Community workshops/trainings in support of project roll	Achieved

maintain resilient water-, drainage-, sanitation-, related infrastructure systems and to apply improved hygiene standards strengthened.	representatives of all ethnicities, women (50%), young people, elderly, people with disabilities and other people with vulnerabilities participate in the planning process. Targets: 189 (or less if clustering is possible)	out: vulnerability and risk assessment support, developing/updating community plans, selecting infrastructure projects. Community trainings for planning, construction and maintaining resilient infrastructure and to apply improved hygiene standards Develop guidelines to plan, construct and maintain small-scale climate and disaster resilient infrastructure systems	
Output 2.1.1. Trainings and community action planning workshops provided to communities for the development of community resilience plans and to plan, construct and maintain climate and disaster resilient water-, drainage-, and sanitation- related infrastructure systems and to improve hygiene standards.	Number of actionable plans developed. Targets: 189 (or less if clustering is possible)		Achieved
Project component 3: Enhance climate and disaster resilient infrastructure systems in human settlement			
Outcome 3.1. 47,000 people have access to storm, flood, landslide-, drought- and disease resilient water, drainage, sanitation and health related infrastructure systems.	Number of people that have access to improved or newly constructed resilient infrastructure. Target: 47.000	3.1.1.1. Sub-project identification (based on VA's and community-based selection criteria) 3.1.1.2. Environmental and social risk assessments (if required) of sub-projects 3.1.1.3. Provincial government procurement procedures 3.1.1.4. Participative planning, construction and maintenance of resilient infrastructure	Achieved
Output 3.1.1. Vulnerable infrastructure strengthened or new resilient infrastructure constructed in response to climate change impacts, including variability	Number of physical infrastructure improved or newly constructed to withstand climate change and variability-induced stress. Target: Number to be defined.		Achieved

Project component 4: Ensure project compliance with AF and UN-Habitat standards for knowledge Management and Advocacy			
Outcome 4.1. Project implementation is fully transparent. All stakeholders are informed of products and results and have access to these for replication.	No of products available online	4.1.1.1. Knowledge management and advocacy 4.1.1.2. Capture and disseminated project results through appropriate information for the beneficiaries, partners and stakeholders and the public in general.	Achieved
Output 4.1.1. Project activities and results are captured and disseminated through appropriate information for the beneficiaries, partners and stakeholders and the public in general.	No of materials		Achieved

Source: Project Document and Reports

3. Approach and Methodology

The evaluation is conducted as systematically and impartially as possible and in line with the United Nations Evaluation Group (UNEG) Norms and Standards for evaluation in Nations System Evaluation policy of the Adaptation Fund (2022),[13] UN-Habitat Evaluation Policy (2013),[14] and the Revised UN-Habitat Evaluation Framework (2016).[15] The evaluation consultant applied a results-based approach (Theory of Change/TOC), in assessing the extent to which the project contributed to the observed achieved results, assessing how activities and outputs contributed to the expected accomplishments (outcomes). The TOC building on the logic framework of the project forms the basis for the evaluation, serving as a tool for assessing the project's performance. The evaluation will also use participatory and utilization focused approaches, to enhance engagement of the stakeholders in the evaluation process and the utilization of evaluation results.

In addition, the evaluation is informed by a conceptual and interactive research design that included document analysis of project documents and reports. A participatory approach involves as wide a range of stakeholders as resources permit. Key stakeholders include the UN-Habitat Lao PDR staff, government agencies and beneficiaries. The involvement of stakeholders in the evaluation aims to improve their ownership of the project, improve the credibility and transparency of the evaluation process, and enhance the relevance and quality of the evaluation. The evaluation was followed the United Nations Evaluation norms and standards

A variety of methodologies is applied to collect data to answer the evaluation questions. By triangulating available data sources, the evaluation will seek to establish strong evidence base and maximize the credibility of its analysis. Where relevant, applicable and feasible, the data was

[13] https://www.adaptation-fund.org/document/evaluation-policy-of-the-adaptation-fund-graphically-edited/
[14] https://unhabitat.org/sites/default/files/2014/04/UN-Habitat-evaluation-policy-2013.pdf
[15] https://unhabitat.org/sites/default/files/2021/08/revised_un-habitat_evaframework_with_ed_memo.pdf

disaggregated by gender. Taking into account the time, resources and data availability constraints, the following methods will be used in this evaluation:

3.1 Desk-based and Literature Review

The first step of the evaluation involves an extensive literature/secondary data review, with a comprehensive examination of project documents, particularly the project reports, providing a starting point for the analysis in the inception phase. A wide range of project documents were provided by the UN-Habitat country office and reviewed to support the evaluation, including project document, work plans, progress reports, mid-term evaluation, cooperation agreements, project completion reports of three provinces, training and capacity building reports and materials, publications, outreach and communication materials, website, etc. Additionally, various national strategic and policy documents were reviewed where available. Table 4 below provides a list of documents received and analyzed through desk review, including but not limited to:

Table 4: List of relevant documents and project reports

Document	Received
The Project Document (Approved Project Proposal)	✓
Agreements of Cooperation (AoC)	✓
Project logframe	✓
Mid-term project evaluation report	✓
Project completion report of Attapeu, Salavan and Sekong Provinces	✓
Project Inception Workshop/Kick-off Meeting Report (including list of participants)	✓
Project Annual Progress Reports	✓
Minutes of meetings	✓
Training reports	✓
New Urban Agenda of UN-Habitat	✓
UN-Habitat Country Programme document	✓
Lao PDR UNPF 2017-2021	✓
8th NSEDP (2016-2020)	✓
Lao PDR National Strategy on Climate Change	✓
Lao PDR Climate Change Decree	✓
Lao PDR Nationally Determined Contribution (NDC) 2020	✓
Sendai Framework for Disaster Risk Reduction 2015-2030	✓

Source: Author

3.2 Primary Data Collection

The data collection for the evaluation is involved a mixed approach, including key informant interviews, focus group discussion, surveys and field visits, as detailed below:

1. **Key Informant Interviews (KII):** The data collection for KII was conducted on 05 August 2024 in Salavan Province with key stakeholders involved with the project (see Annex 12: List of Participants). During the meeting, interviews were held with 9 key stakeholders involved in the planning, implementation, and reporting of the project (UN-Habitat team and provincial government partners), as well as beneficiaries. Semi-structured interviews were conducted with stakeholders based on the evaluation questions, allowing for clarification and validation of project documents. The selection of interviewees has ensured representation of all stakeholders with key roles in the design, implementation, and monitoring of the project. The majority of the interviews was conducted in the Lao language, and the evaluation consultant translated the interview transcripts into English.
2. **Focus Group Discussions (FGD):** In addition to KIIs, during the data collection mission in Salavan Province, about 20 FGDs were held with project beneficiaries to gather their views and experiences regarding the project. To ensure that the voices of women, youth, and vulnerable groups are heard, three focus group discussions were organized: one for women, one for young people, and one for men. The discussions were based on the evaluation questions and conducted in the Lao language. After the discussions, the evaluation consultant translated the transcripts into English. See Annex 13 for completed survey forms.
3. **Surveys:** 20 surveys were completed by local implementing entities and beneficiaries in three provinces. Specifically, beneficiaries involved in the project's infrastructure construction in three provinces were asked to complete a questionnaire to provide quantitative data reflecting their experiences and outcomes from the project. The questionnaires were simple and completed with assistance from the evaluator. Written responses were also translated by the consultant.
4. **Field Visits to Assess Completed Activities:** The consultant also visited project sites where the water supply infrastructure has been constructed in the provinces of Attapeu, Salavan, and Sekong to observe the completed construction. This helped provide an opportunity to gather additional data from beneficiaries.

The selection of key stakeholders for the KII, FGD and surveys is based on a review of the project documents, terminal evaluation ToR, and consultations with the project team. This ensures representation of all stakeholders with key roles in the project implementation and engagement, as well as in climate change adaptation planning. The data collection tools (interview questions/survey form) were developed in English (see Annex 5 – KII Questions and Annex 6 – FGD Questions). However, the majority of the consultations/interviews were conducted in the local language (Lao). The consultant translated interview transcripts into English, involving a degree of interpretation of responses. A list of key stakeholders interviewed for data collection is provided in table 4 below.

Table 5: Key stakeholders for the data collection

Stakeholder	Types of stakeholders	Data collection method
UN-Habitat	Implementing Entity	Key Informant Interviews (KII)

• Regional Advisor • Chief Technical Advisor • Project Manager/Project Engineer		
Department of Water Supply, Ministry of Public Works and Transport (MPWT)	Executing Entity /national government stakeholders	KII
Provincial Departments of Public Works and Transport (PPWT) of: • Attapeu Province • Salavan Province • Sekong Province	Executing Entity /provincial government stakeholders	KII
Nampapa State-own Enterprise (NPSE) of: • Attapeu Province • Salavan Province • Sekong Province	Executing Entity /provincial government stakeholders	KII
District Offices of Public Works and Transport (DPWT) of Districts in Attapeu, Salavan and Sekong Provinces	District government stakeholders	KII
Villagers in three provinces of Attapeu, Salavan and Sekong	Beneficiaries	Focus Group Discussion (FDG), and survey

Source: Author, based on Project Document and Terminal Evaluation ToR (2024).

The evaluation sought to make deliberate efforts to consult vulnerable beneficiaries in project provinces. Key stakeholders were kept informed of the evaluation processes including design, information collection, and evaluation results dissemination to create a positive attitude for the evaluation and enhance its utilization. Stakeholders were involved either directly through interviews, focus group discussions or surveys, or given opportunity to comment on the evaluation products. UN-Habitat also facilitated the evaluation consultant for the engagement with main stakeholders.

3.3 Data Analysis

The data analysis employed mixed methods – based on qualitative and quantitative data collection – in order to best reflect the results and provide necessary information to evaluate the project achievement (outcomes). The information received from the interviews, FGD and surveys, which used to facilitate quantitative and qualitative assessment of the results. By assessing and analyzing the project from beginning to end, there is an opportunity to compare the original project design with the activities that were implemented. There was also a comparison of expected accomplishments with the actual results of the project. The analysis primarily considered the relevant principles of the evaluation developed by the UN-Habitat which assessed against key criteria **of relevance, effectiveness, efficiency, impact outlook, sustainability, coherence** as well as the integration of cross-cutting issues seeking to answer evaluation questions and sub-question as defined in table 6 below.

Table 6: Evaluation criteria, questions and methods

Criteria	Evaluation questions and sub-questions	Methods and means of verification
Relevance	Did the project do the right things? To what extent were the projects objectives and design relevant to beneficiaries, Adaption Fund, UN-Habitat, country, institutions' needs? • To what extent was the project relevant to requirements/needs of the beneficiaries (national and local governments)? • what extent was the implementation strategy responsive to donor and UN-Habitat strategies? • To what extent were the project's intended outputs and outcome consistent with national and local policies and priorities, and the needs of target beneficiaries? • To what extent is UN-Habitat's comparative advantage in this area of work compared with other UN entities and key partners? • To what extent were the identification of key stakeholders and target groups (including gender analysis and analysis of vulnerable groups) and of institutional capacity issues relevant?	• Review SDGs, New Urban Agenda (NUA), Lao PDR UNPF and relevant international agreements, Lao PDR NSEDP, national policies, local development plans, etc. • Conduct Key Informant Interviews (KII)s with UN-Habitat, Government entities • Conduct Focus Group Discussions (FGD)s with beneficiaries.
Effectiveness	To what extent did the project enhance the climate change resilience of the targeted settlements? • To what extent did the project, improve knowledge on resilience against climate-induced events, increase physical infrastructure and strengthen institutional capacity to reduce risks associated with climate-induced events? • To what extent has the project proven to be successful in terms of ownership in relation to the local context and the needs of beneficiaries? • To what extent and in what ways has ownership, or lack of it, impacted the effectiveness of the project? • Was the monitoring and evaluation system in place and facilitated tracking of progress towards achievement of outcomes and objective of the project, using indicators of achievement? How was the information provided through the early warning system used during the project implementation to improve performance? • To what extent did the assumptions and risk assessments at results level turn out to be	• Review project reports • Conduct KII with UN-Habitat, national and local governments • Conduct FGD and surveys with beneficiaries.

	inadequate or invalid, or unforeseen external factors intervened, and how flexible the project's management has been to ensure that the results would still achieve the intended purpose?	
Efficiency	How well were resources used? • To what extent did resources and management structure of the project support efficiency for project implementation? • To what extent did the project management and local partners have the capacity to design and implement the project? • To what extent were the institutional arrangements of UN-Habitat adequate for the project? What type of (administrative, financial and managerial) obstacles did the project face and to what extent has this affected the project? • To what extent the project demonstrated value for money, as well what was the quality of the monitoring performed during the implementation and measures taken to adapt as necessary? • To what extent did activities and outputs contribute to the expected accomplishments (outcomes) and objective of the project? • To what extent was monitoring and reporting on the project transparent and satisfied key stakeholders?	• Review project documents. • Conduct KII with UN-Habitat, national and local governments.
Impact	What difference has the project made? • To what extent has the project generated changes in the targeted settlements? • Did the project produce any unintended or unexpected impacts, and if so, how have these affected the overall impact?	• Conduct KII with UN-Habitat, national and local governments. • Conduct FGD and surveys with beneficiaries.
Sustainability	To which extent will the benefits and achieved outcomes of the project continue or are likely to continue when funding from the Adaption fund ends? • To what extent was capacity developed for the sustainability of the project achievement? Is there sufficient awareness in support of projects' objectives? • To what extent did the project engage the participation of key stakeholders in design, implementation, monitoring, and reporting to see that it is in their interest that the project benefits continue?	• Conduct KII with UN-Habitat, national and local governments. • Conduct FGD and surveys with beneficiaries.

	• To what extent was the theme of the project aligned with national/local development priorities? What is the likelihood of financial and economic resources being available one the Adaptation Fund ends? • Are systems for accountability and required technical know-how in place? To what extent can the project be replicated or scaled up at national or local levels? • To what extent did the project foster innovative partnerships with local institutions and authorities and other development partners?	
Coherence	To what extent did other projects, support or complement the project? • Was the project coherent and implemented in synergies and interlinkages with other Adaption Fund development projects? • Was the project coherent or complementary and in coordination with other UN-Habitat projects and programmes?	• Conduct KII with UN-Habitat, national and local governments.
Cross-cutting issues	To what extent were cross-cutting issues of gender, human rights, environment and disability considered and integrated into UN-Habitat Programme design and implementation?	

Source: Author

3.4 Evaluation Limitations

Some limitations under this evaluation are summarised as follow:

1. **Time Constraints**: The assignment a very short timeframe of two months to complete the evaluation.
2. **Monitoring Data Availability**: There is a concern about the availability of monitoring data and reports, which could affect the evaluation's ability to fully assess the project's impact and effectiveness.
3. **Field Visit Limitations**: The consultant was only able to visit some target towns and provinces due to time constraints. This limitation could impact the comprehensiveness of the evaluation, as it might not capture the full diversity of the project's impact across different locations.
4. **Impact Assessment Challenge**: Determining the project's long-term impact is identified as a challenge. This could potentially affect the evaluation's conclusions on the project's sustainability and overall success.
5. **Language and Translation Issues**: Since most interviews and discussions were conducted in Lao, there might be some risks related to the accuracy of translation and interpretation, which could impact the evaluation's findings.

4 Key Findings of the Evaluation

4.1 Relevance

The project was consistent with government policies and strategies. It made a particular contribution to the Government's Socio-Economic Development Plan. The **8th National Scio-Economic Development Plan (NSEDP) (2016-2020)** is the overarching development plan in Lao PDR for the duration of the project.[16] The 8th NSEDP emphasized sustainable development, aiming to reduce vulnerability to climate impacts while promoting socio-economic growth. Key measures included incorporating climate resilience into infrastructure projects, enhancing agricultural productivity with climate-smart practices, and strengthening institutional capacities for climate change management. The project is particularly aligned with Outcome 3, Output 2 which is to "Prepare to Cope with the Disaster Risks and Impacts from Climate Change".

The project was consistent with national climate change policy. It made a particular contribution to the **National Strategy on Climate Change Strategy (2010)** and **the Nationally Determined Contribution (NDC)**.[17] [18] These strategics documents aims to create an enabling environment for improving mitigation and adaptation to changing climatic conditions in a way that promotes sustainable economic development. The National Strategy on Climate Change, particularly, defines four goals, including increasing the resilience of key sectors of the national economy and natural resources to climate change and its impacts. Due to the strong linkages and several synergies between mitigation, prevention and preparedness in climate change adaptation, the adaptation options for agriculture and food security of the Strategy have high relevance for disaster risk reduction (DRR).

The project was aligned with sectoral priorities. In particular, the **National Housing and Urban Development Strategy and Vision towards 2030** emphasizes the need for city development and the establishment of urban development strategies at all district and city levels in accordance with the national direction. The Strategy outlines objectives, policies, and programs in the urban sector, aligning with Ministry of Public Works and Transport's long-term plans. It aims to develop all urban areas, from the capital city to village clusters, to gradually reduce the development gap between urban and rural areas, strengthen the capacity of urban management authorities, and create favorable conditions for civil society and the private sector to actively participate in urban management and development.[19]

The project also aligned with local level plans. Through providing improved water supply for the poorest and vulnerable families in the target villages, the project supported the Provincial and District Development and Poverty Eradication Plans. It also aligned with the Provincial and District Disaster Response Plans. At the village level, the interviewed villagers in Attapeu, Salavan and Sekong also reported that the project met villagers' needs, and it aligned with village development and disaster response plans.

[16] GoL (2015). 8th National Scio-Economic Development Plan (NSEDP) (2016-2020), https://laopdr.un.org/en/13284-8th-national-socio-economic-development-plan-2016-2020#:~:text=The%208th%20NSEDP%20paves%20the,2030%20Agenda%20for%20Sustainable%20Development.
[17] GoL (2010). National Strategy on Climate Change, https://climate-laws.org/document/strategy-on-climate-change-of-the-lao-pdr-2010-and-climate-change-action-plan-2013-2020_18f9
[18] GoL (2015). Nationally Determined Contribution (NDC), https://unfccc.int/sites/default/files/NDC/2022-06/NDC%202020%20of%20Lao%20PDR%20%28English%29%2C%2009%20April%202021%20%281%29.pdf
[19] GoL (2023). National Urban Development Strategy (2023-2030) and the Vision towards 2035

Apart from the national, sectoral and local plans and policies, the project was also designed and implementation commenced in the time of **UN-Habitat's Strategic Plan 2014-2019**. It was aligned with the strategic plan, and supports Focus Areas 5 (Housing and Slum Upgrading) and 6 (Risk Reduction and Rehabilitation). The project covers four of the identified five key entry points to Focus Area 6, these being shelter and housing; basic infrastructure and services; land use and tenure; and climate change and urban environment. In addition, the cross-cutting issues, particularly climate change and human rights, were mainstreamed into the project.

Additionally, the project aligns with the shelter output statement of the **United Nations Sustainable Development Cooperation Framework (UNSDCF) 2021-2025** for Lao PDR which states that, "Government institutions at the national and sub-national levels have strengthened capacity to provide access to appropriate, safe, serviced and affordable shelter to all people, including the most vulnerable (such as migrants, displaced, and disabled)." Through its equitable provision of adequate basic services infrastructure such as water supply, and its participatory planning processes, the project also aligns with the **New Urban Agenda of the UN-Habitat**. Its design and implementation are also consistent with the guidelines adopted by the UN-Habitat.

The project also contributes to achieving the **Sustainable Development Goal (SDG)**, including Goal 11 'Make cities and human settlements inclusive, safe, resilient and sustainable' (and several of its targets); Goal 6 'Ensure availability and sustainable management of water and sanitation for all' (and its targets); and Goal 13 'Take urgent action to combat climate change and its impacts'. In particular, sub-goal 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries. In particular, the project aligns with the Sendai Framework for Disaster Risk Reduction.

In addition, the project is well aligned with the **Priorities of Adaptation Fund**. This includes, "adaptation to adverse effects of climate change, building a sustainable and resilient international community through efforts to address global challenges, and mainstreaming disaster risk reduction [and] disaster risk reduction and post-disaster recovery measures".

More importantly, all project activities are aligned and in compliance with existing **laws, regulations, standards,** and **procedures** endorsed by the government, including Lao PDR Construction Law, Lao PDR Water Supply Law (2009), Lao PDR Building Codes and Building Control (2013), Building Back Better Principles Guideline for Shelter and Sanitation (2012), Lao PDR Initial Environmental Examination (IEE) and Environmental and Social Impact Assessment (ESIA) (2012), National Standard on Quality Management for Drinking Water and Household Water Supply (2005), among others.

Regarding the project relevance for the villagers/beneficiaries, many respondents in Districts of Attapeu Province highlighted during interviews that the project, especially the water supply, has been significant for their families. It helped improve people's livelihoods in different ways – such as for drinking, cooking, and gardening. A respondent from Samakkhixay District of Attapeu notably said that the gravity-fed water system built by the project is important and provides many benefits for his family, as it helps address the water scarcity issue for villagers by allowing them to have water in every season. Furthermore, it also helps save time previously spent traveling to gather water from different sources for family members.

Likewise, interviewees in Dakcheung District of Sekong Province noted that the water supply provided by the project is important for their family as it provides convenience and helps improve the livelihood of family members in various aspects. In Salavan, villagers also stated that the water supply is very important as it helps improve many family members' livelihoods. For example, a respondent in Lava Tai Village of Samuay District mentioned that the water supply built by the project is really meaningful to his family as it helps improve lives in terms of health and livelihood. A villager in Padu village in Taoi District of Salavan also stated that once the water supply was provided by the project, people's livelihoods improved and most people found it more convenient to gather water than before.

Figure 3: Interviews held in the project villages for data collection

In conclusion, the project met the immediate needs of vulnerable communities. It was consistent with government plans, strategies, and regulations, and it made a particular contribution to local development and disaster response plans. The project also aligned with relevant climate change and sectoral policies. It supported global priorities such as the Sustainable Development Goals (SDGs), particularly SDGs 11, 13, and 6, UNSDCF, the New Urban Agenda, and the Sendai Framework for Disaster Risk Reduction. The project was well aligned with the priorities of the Adaptation Fund. More importantly, the project also met the needs of the project villagers.

4.2 Effectiveness

The project met the objective of providing policy and institutional level strengthening to reduce vulnerability in vulnerable settlements (soft); enhancing capacity at the human settlement and community level capacities for climate resilience (soft); and building climate and disaster resilient infrastructure systems in human settlement (hard) as follow:

4.2.1 Strengthening policy and institutional level capacity to reduce climate vulnerability in human settlements (soft)

One of the key achievements of the project focused on reducing vulnerability at national, provincial and district level to climate-related hazards and threats through the conducting 3 provincial Climate Change Vulnerability Assessments (see Figure 4) and 8 District-level Climate Change Vulnerability Assessments (highlighting specific vulnerabilities in 189 settlements) (Reports can be accessed through the following links: https://unhabitat.la/projects/af1/). It also completed developing guidelines for replication of vulnerability and risk assessments for other areas. The UN-Habitat team also highlighted that the information generated by the vulnerability assessments allowed provinces, districts and settlements to plan for resilient development, including identifying low risk areas for development and identifying and prioritizing intervention that are resilient, sustainable and focused on the needs of vulnerable groups.

Figure 4: Climate change vulnerability assessment reports

The assessed climate change vulnerability reports in three provinces were further used to identify resilience building measures by provincial and district authorities which fed into local development plans emphasizing community climate change resilience, disaster preparedness, land use planning, water resource management, and infrastructure development. According to the review, the information generated by the vulnerability assessment reports were also used to develop climate change action plans (three provincial level and 8 district level plans). The development of community plans (incl. maps) included risk maps of flood plains and areas at risk of droughts, landslides and dengue (and other diseases) and related to this: appropriate watershed management options, water use and safety plan (i.e. water distribution), preparedness and post hazards recovery processes, possibly supported with adjusted policy and regulations (including for land use) that recognize

emerging climate change vulnerabilities and disaster risks.

4.2.2 Enhancing community level capacities for climate resilience (soft)

The project also achieved the awareness raising activities on resilience building of human settlements and infrastructure systems as a result of enhanced institutional capacity through providing national training of facilitators workshop (national and provincial participants and providing district level workshops in support of project roll out (provincial and district-level participants. The relevant trainings/workshops were provided through the project implementation at the national, provincial and district level.

During the trainings/workshops, barriers and opportunities for increasing the resilience of human settlements and infrastructure systems (by reviewing relevant planning practices, policies, legislation and finance) were also identified. In all three provinces, the focus was on training DPWT staff. It was reported that there were 72 participants (13 females) in the training, with representatives from the provincial and district offices of PWT. The quality of the training and the resources produced appeared to the evaluators to be of an excellent standard. The training was very well documented, and a training manual produced which is detailed, easy to follow, and a useful resource for future trainings.

The trainings also entailed identifying opportunities for livelihood/economic development planning support and for sustaining and up-scaling the project, including a strategy to capture and disseminate lessons learned. Mechanism at the local level, such as that of refresher trainings (based on established tools such as training manuals) were also institutionalized ensuring that the capacity built is not only sustained but also could be considered for possible roll-outs in other districts, which are not within the current project scope. More importantly, simple tools were also developed to support the workshops and to provide further guidance for the roll out to the community level and to provide guidance for policy.

According to the review, several training workshops were held in the recent year (2023) for key stakeholders of the three project provinces, focusing on maintaining small-scale climate and disaster-resilient infrastructure systems (see Figure 5). The purpose of the training was to provide basic operation and maintenance (O&M) skills for rural small-scale water infrastructure, such as repairing leakages in the pipe network or replacing water taps. The Manual on O&M was introduced, which enabled the trainees to acquire basic knowledge that would allow them to independently perform day-to-day repairs on the small-scale water infrastructure system. At the end of the O&M training, trainees from 10 represented villages also received the Manual on O&M, water pipes and fittings, water taps, glue, and the relevant tools for repairs.

Figure 5: Training workshops held in the project provinces

4.2.3 Building climate resilient water related infrastructure systems in human settlement (hard)

The project met the objective of providing water supply infrastructures to the communities that are vulnerable to the climate change and the natural disasters (floods and droughts). The effectiveness of the project is particularly evident in its success in delivering water supply infrastructure, notably the construction of water supply systems, to 189 communities and villages across the three provinces of Attapeu, Salavan, and Sekong. These provinces are among the most rural and vulnerable areas in Lao PDR, where access to such essential infrastructure is often limited.

Interventions constructed and provided in vulnerable communities across three provinces include small-scale community-based water infrastructure using spring/surface or underground water sources, gravity feed systems with protection of water sources, rainwater harvesting with roof or underground catchments to collect rainwater for use during the dry season, technical assistance, and guidance on Building Back Better (BBB) principles related to shelter and WASH infrastructure.

The project achieved its objective of providing capacity development and climate-resilient infrastructure to vulnerable communities in the three provinces of Attapeu, Salavan, and Sekong. The project targeted 189 settlements/communities and 47,000 people (of which 24,000 are women and

girls) as primary beneficiaries. In **Attapeu**, the project completely constructed 66 physical water-related infrastructures (100%) in four districts (Samakkhisay, Saysettha, Sansay, and Phouvong). These include new small-scale water infrastructure using solar pumps, new gravity feed systems with slow sand filtration tanks, and new 24/7 small-scale water supply with distribution networks and household water meter connections in rural areas (see Figure 6). The project was completed in 66 villages, benefiting a total of 64,706 people, of which 33,324 are women.

According to interviews, many villagers in Attapeu stated that the project made a difference in their lives and families. One respondent reported that the water supply provided convenience for water gathering since it was established near their house. It helps reduce distance and save time for adults and children collecting water. An interviewee in Phouvong District noted that since the water supply was constructed, it made a major difference to their family, especially in providing more convenience for water collection as water taps were set up in their house. This reduced time and distance for water collection, allowing them to have more time for other activities.

Figure 6: Water infrastructure built in Attapeu

In **Salavan**, the project constructed 61 physical water-related infrastructures (100%) in two districts (Taoi and Samuay) of Salavane Province. These include eco-friendly innovations such as small-scale

water infrastructure systems using "Hydraulic Ram Pumps." These pumps use the force of gravity to pump water without using electricity or gasoline, thus keeping operation and maintenance costs to a minimum. Other constructions include new small-scale water infrastructure using solar pumps, new gravity feed systems with slow sand filtration tanks, and new 24/7 small-scale water supply with distribution networks and household water meter connections in rural areas (see Figure 7). The project was completed in 61 villages, benefiting a total of 23,845 people, of which 11,975 are women.

According to field visits, an interviewee from Awai Village in Samuay District of Salavan said that the major difference this project made for her family is the increased convenience in collecting water. She no longer has to travel far to collect water from natural sources, which helps reduce time. The water supply can also be used for gardening purposes. Similarly, a villager from Lava Tai Village in Taoi District stated that the water supply has improved his livelihood. It provides water for both drinking and daily use, and can also be used for gardening.

Figure 7: Water infrastructure built in Salavan

In **Sekong**, 62 physical infrastructures were completely built (100%) in two districts (Kaleum and Dakcheung). These include new small-scale water infrastructure using solar pumps, new gravity feed systems with slow sand filtration tanks, and new 24/7 small-scale water supply with distribution networks and household water meter connections in rural areas (see Figure 8). The project was completed in 62 villages, benefiting a total of 22,929 people, of which 16,694 are women. In terms of local views, one major difference raised by a respondent from Kaleum District is that the water supply helps improve livelihoods by reducing water gathering time and increasing income from gardening.

People's health has improved since the project has provided clean water, which helps save time previously spent traveling to collect water from different sources in the community.

Figure 8: Water infrastructure built in Sekong

Remarkably, the implementation of this activity in three provinces has had a significant impact, improving the livelihoods of approximately 125,295 villagers who have directly benefited from the new water supply systems. According to the UN-Habitat report, this achievement far surpasses the original target set by the project, which aimed to benefit only 47,000 people. By reaching over 125,295 beneficiaries (67,659 women) – more than triple the initial goal – the project has not only fulfilled but greatly exceeded its objectives. This substantial overachievement highlights the project's success and underscores its capacity to deliver additional benefits beyond what was initially anticipated. The outcomes of this activity serve as a powerful example of the potential impact that well-executed development initiatives can have, especially in challenging and underserved regions. This success story not only adds significant value to the current project but also sets a positive precedent for future projects in similar contexts.

4.2.4 Monitoring, reporting and evaluation

The Monitoring and Evaluation (M&E) of progress in achieving project results were progressively implemented throughout project duration. The status of identified environmental and social risks and the ESMP, including those measures required to avoid, minimize, or mitigate environmental and social

risks were also monitored throughout the project (annual project performance, mid-term and terminal reports (Being conducted in time of writing this report). The same applies to financial and project management risks and mitigation measures.

Participatory monitoring mechanisms (involving different levels of government and communities) was also developed and put in place for the collection and recording of data to support the M&E of indicators. This allowed beneficiary communities to work directly with the project's M&E consultant, to highlight issues in project delivery and to strengthen adaptation benefits, including in replication and sustaining the project's gains. Data collected included marginalized groups (e.g. women) aggregated (for each project workshops and training). Project site visits were also regularly conducted by the project team based on an agreed schedule to assess project progress first hand.

According to the review, the project team also developed an M&E Plan during the project's inception phase, which was presented to all stakeholders during the inception workshops. Importantly, the **Annual Project Performance Report** (PPR) have been prepared to monitor progress made since the project's start and ending in particular for the previous reporting period. The PPR includes the progress on the project's objective and outcomes – each with indicators, baseline data and end- of-project targets (cumulative), project outputs delivered per project outcome (annual), Lessons learned/good practice and Annual Work Plan and expenditure.

In addition, one of the key successes of the project in the area of monitoring and evaluation (M&E), was the development of the **Community Project Performance Monitoring & Evaluation (CPPME)** tool by the project team (see Figure 9). This tool was specifically designed to monitor and evaluate various aspects of the project, including the planning, construction, and maintenance of small-scale climate and disaster-resilient infrastructure systems (water supply). Further, it incorporated environmental and social risk assessments within Salavane, Sekong, and Attapeu Provinces, covering the four areas of operation (AOCs) across these three provinces. The CPPME tool proved to be useful in assisting and facilitating the project team, especially the UN-Habitat team, by enabling them to effectively track the progress of ongoing activities. It also provided the flexibility to adjust schedules and make necessary changes to the project plan in response to emerging needs or challenges.

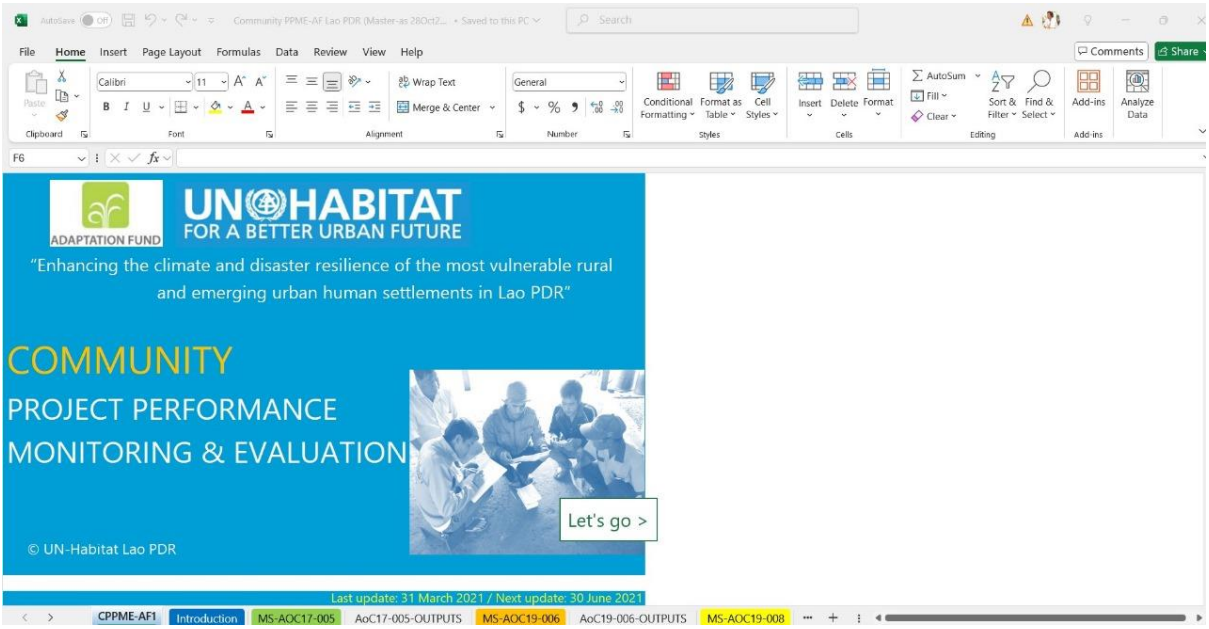


Figure 9: Community Project Performance Monitoring & Evaluation (CPPME) tool

Furthermore, the tool contributed significantly to keeping the result tracker tool, which was developed separately, updated with the latest progress data. According to feedback from interviews, the CPPME tool greatly enhanced the project's capacity to stay on course and meet its objectives. It stands as an excellent example for other projects, particularly those involving hard infrastructure, demonstrating a robust and effective approach to monitoring and evaluation. The success of the CPPME tool not only underscores its value within this specific project but also serves as a showcase for similar initiatives in the future, highlighting its potential for broader application in monitoring and evaluation practices across other projects.

Finally, an independent **Terminal Evaluation** is also taking place as the last M&E-related activity before the operational closure of the project, in accordance with AF guidance and following the OECD DAC framework. The terminal evaluation has focused on the delivery of the project's results, as initially planned and then reflected in the M&E framework, including the implementation of environmental and social mitigation measures (and as corrected after the Mid-Term Evaluation, if any such correction took place).

In summary, the project effectively met the objective of providing both soft and hard interventions to vulnerable communities. In particular, the implementation of hard interventions under this project in three provinces has had a significant impact, improving the livelihoods of approximately 125,295 villagers who have directly benefited from the new water supply systems. There was also strong awareness and capacity building along with water supply construction. Additionally, the monitoring and reporting of the activities were timely, meaningful, and thorough. According to the survey, many interviewees commented on the very good quality of the water supply infrastructure provided. Regarding overall satisfaction, many villagers in project provinces expressed a high level of satisfaction with the water supply systems, especially the design and construction phase – since the design was consulted with the villagers and they also participated in consultation activities prior to construction.

4.3 Efficiency

4.3.1 Resources

The project duration was planned for 54 months from January 2017 to June 2021 with a total budget of USD 4.5 million (of which USD 2.8 million was invested in resilient water-related infrastructure). According to the evaluation, it was found that, overall, the project had been implemented in an efficient manner. The efficient use of funds in three provinces enabled additional water supply systems to be added to the project, greatly increasing its value to beneficiaries in 189 villages. Construction in the three provinces of Attapeu, Salavan, and Sekong was carried out by local construction companies which received contracts through a competitive bidding process. The process was managed by a bidding management committee with oversight by UN-Habitat. The prequalification and evaluation phase for construction companies began with advertisements on local radio, in newspapers, and on TV.

In the three provinces, there was a trade-off between the number of water supplies that could be constructed. The 66 water-related infrastructures in Attapeu, 61 in Salavan, and 62 in Sekong were all constructed by different companies at a unit cost of approximately USD 5,000-15,000. All construction was completed by 2023. This was timely, particularly considering that Lao PDR was in various stages of Covid-19 lockdown from 2020-2022. Not only did the lockdown prevent construction work from

being carried out, but it also prevented materials from being transported from Vientiane. A strict Work-From-Home (WFH) order and inter-provincial travel ban were among the restrictions imposed during the lockdown period, preventing any monitoring missions to the project sites.

Although most water supplies were constructed on time in the three provinces, a few were delayed due to the impacts of the Covid-19 lockdown. However, a no-cost extension was obtained for 18 months (until August 2023) due to the Covid-19 impacts. Once the document was signed, it took a little under six months for the works to be completed and inspected.

4.3.2 Institutional Arrangement

UN-Habitat signed three separate Agreements of Cooperation (AOC) for the project implementation. Agreements were signed with Attapeu DPWT, Salavan DPWT, and Sekong DPWT. The UN-Habitat country office provided support to, and consulted regularly with, the implementing agencies (DPWT) through formal meetings such as inception meetings, technical meetings in the provinces and Vientiane, ad hoc meetings on a needs basis, email exchanges, and calls.

An observation found during the evaluation is the experience of the project team (UN-Habitat), especially Chief Technical Advisor and consultant. These people were technically qualified to draft the water supply designs and to draw up documents. Their experience provided them with the knowledge of what would work on the ground. Further, the senior UN-Habitat team built effective relationships with Government officials, which added to the strength of the collaboration between UN-Habitat and the Government. The project team and consultants' troubleshooting skills and general competency were key factors in the smooth and timely running of the project. Coordination between stakeholders at the local level in the three provinces was good. The project team was heavily involved and worked closely with DPWT and the villages.

4.3.3 Cost Effectiveness and In-kind Contribution in Project Operations

According to the analysis, regarding concrete adaptation costs, US$2.8m was allocated to the poorest settlements, focusing on the most vulnerable communities in 189 settlements to construct infrastructure (water supply) that made them more resilient, especially to floods and droughts. UN-Habitat's cost-effective designs enabled a greater number of people to benefit. The hard component was backed up by US$687,640 from the soft Components 1 and 2 (see Table 3 in Section 2.5) that supported planning and capacity building, ensuring that these benefits are sustained and replication potential exists.

The project was also implemented in close partnership with communities and local government institutions. This model of partnership allowed significant cost reduction as communities and local government partners provided substantial in-kind and in-cash support. One great example is that communities provided in-kind contributions by helping with digging and other excavation works, as well as basic masonry/carpentry work (see Figure 10). Furthermore, community members were contracted and trained to provide semi-skilled and skilled services. This is particularly relevant for water supply infrastructure where communities were directly engaged in the construction through community agreements and government agencies and other stakeholders.

Figure 10: Community in-kind contributions by helping in digging and other excavation works

Apart from this, the project also demonstrated cost-effectiveness of technical options. Traditionally, UN-Habitat projects have shown high technical cost-effectiveness – for example, basic services projects related to water supply and sanitation are often delivered at a mere 30 percent of costs when compared to similar projects implemented by IFIs. A project example is UN-Habitat's MEK WATSAN project in Lao PDR, Cambodia, and Vietnam. The evaluation report showed that UN-Habitat was able to deliver very competitively priced basic services to communities. As for resilient design of basic infrastructure, the initial costs are estimated to be around 30-50 percent higher than non-resilient design. However, the infrastructure is expected to last at least twice as long (thus is more sustainable and cost-effective) as non-resilient designed infrastructure because it can still be accessible during and after every flood, storm, and drought. As for the costs per infrastructure type, this varied significantly

depending on the type and location of such an intervention (i.e., remoteness, size, terrain, etc.). This was particularly relevant to hard interventions (water supply infrastructure) of the project.

Overall, the project had been implemented in an efficient manner. The efficient use of funds in provinces enabled water supply systems to be added to the project, which greatly increased the value of the project to beneficiaries. When compared to similar projects, this project delivered better quality water supply infrastructure at a lower cost. The project was implemented through cooperation agreements with the Department of Public Works and Transport (DPWT) in three provinces. This enabled smooth and timely implementation.

4.4 Impacts

The main achievement of the project was providing water supply infrastructure to households in the most vulnerable communities of three provinces. Assessments were carried out through consultations with local authorities, provincial DPWT, and villagers. The construction of water supply infrastructure helped improve the livelihood of local people and increase climate resilience across the most vulnerable villages. Notably, resilient water supply infrastructures were constructed, and there was widespread appreciation among stakeholders in the communities.

According to surveys, most stakeholders and beneficiaries reported being happier with their water supplies than previously. The establishment of water supplies is enabling people to be more resilient to climate hazards such as droughts. Additionally, it appeared to the evaluators that the project has contributed significantly to the normalization of resilient infrastructure such as water supplies. Especially, there is a higher level of resilience to both drought and flood. Furthermore, through the climate risk and vulnerability assessment (CRVA) and relevant training, government authorities in the project provinces have become aware of the high degree of vulnerability to disasters in their areas.

The provision of piped water supply facilities contributes to the government's development goals and will likely have a normative impact on community practices. A clean piped water supply system in all project provinces was a new development in local people's lives. Many households had not previously had sanitation facilities or piped water, and the provision of these was a significant change. According to interviews, all householders who had received access to the piped water supply system were very appreciative of it. During the evaluation, there was also much discussion about the need for toilets. This was also raised by the Director of DPWT Salavan during the field visit, who described many families requiring toilet and sanitation facilities. This request can be further considered for other incoming projects.

The project made a point of employing local people during the construction phase. While villagers have gained skills in construction, there is not yet evidence that there will be opportunities for them in their home area to use these skills in further employment or to increase their income. Through community consultations and the visibility of construction sites, villagers have been exposed to new construction ideas and Build Back Better (BBB) principles. In addition, large numbers of villagers in three provinces have been trained in the basics of construction. It is too soon to tell how the new construction practices will be incorporated into future constructions.

As for concrete adaptation activities to enhance resilient infrastructure systems in rural and vulnerable settlements, the requested amount (USD 2.8 million) was spent to implement interventions in 100

percent of the targeted areas in the provinces of Attapeu, Salavan, and Sekong. These areas are extremely poor (>60 percent of the settlements live in extreme poverty) with a high percentage of ethnic minorities, no or limited access to basic services, and regular occurrences of floods, droughts, landslides, and climate-related diseases. According to the analysis, the project has provided new resilient water-related infrastructure to over 47,000 people (Project target), which has contributed to and positively impacted practices in the project communities. Table 7 summarizes an overview of positive impacts of this project (outcomes) compared to no project/funding (baseline).

Table 7: summarizes an overview of positive impacts of this project compared to no project

Outcomes	Baseline (without project)	Impacts (with project)
Outcome 1.1: Reduced vulnerability at national, provincial and district level to climate-related hazards and threats	National government and local authorities don't have the tools to analyze and identify climate change vulnerabilities and disaster risks at the local level	National government and local authorities have used tools to identify climate change vulnerabilities and disaster risks at the local level
Outcome 1.2: Increased awareness on resilience building of human settlements and infrastructure systems as a result of enhanced institutional capacity	Planning practices, policies & legislation and budgets don't support the national government and local authorities to implement measures to reduce climate change impacts (floods, droughts, landslides, diseases) to human settlements and infrastructure systems	National government and local authorities have a supporting planning and governance framework in place to implement measures to reduce climate change impacts (floods, droughts, landslides, diseases) to human settlements and infrastructure systems, also after project termination.
Outcome 1.3: Resilience building measures identified by provincial and district authorities which can feed into local development plans, emphasizing community climate change resilience, disaster preparedness, land use planning, water resource management and infrastructure development	National government and local authorities will not be able to respond to climate change impacts because local development plans do not include specific action plans (and allocated budgets) to reduce these impacts	Climate change action plans are developed include disaster risk sensitive land use and water components (e.g. maps), allowing national government and local authorities to respond to climate change impacts
Outcome 2.1: Community capacity to plan, construct and maintain resilient water-, drainage-, sanitation-, related infrastructure systems and to apply improved hygiene standards strengthened	Communities/households are not able to plan, construct and maintain resilient water-, drainage-, sanitation-, and health related infrastructure systems to reduce climate change impacts and to use improved hygiene standards to avoid climate related diseases.	Communities/households are able to respond to climate change impacts by planning, constructing and maintaining resilient water, drainage, sanitation, and health related infrastructure systems and to use improved hygiene standards.
Outcome 3.1: 47,000 people have access to storm, flood,	The poorest and most vulnerable people in Lao PDR will continue	The wellbeing/health/safety of the poorest and most

landslide-, drought- and disease resilient water, drainage, sanitation and health related infrastructure systems	to suffer (health issues/mortality; costs caused by health issues and loss of assets) due to climate change impacts, also negatively affecting national development goals.	vulnerable people in Lao PDR are improved, also positively contributing to national development goals.
Outcome 4.1: Project implementation is fully transparent. All stakeholders are informed of products and results and have access to these for replication.	No knowledge management and advocacy system is in place to ensure the project is fully transparent and lessons are recorded	The knowledge management and advocacy system in place ensure the project is fully transparent and lessons are recorded

Regarding the primary data collected from field interviews, many villagers in Attapeu noted that the main benefit they can see is the water supply provided by the project, which allows people to have water to use even in wet or dry seasons. This has had a major positive impact on their livelihood. For example, one interviewee in Attapeu stated that a tangible benefit he can see is the water supply provision by the project, particularly the support in establishing water taps in each house. This has made a major positive impact on his family.

Likewise, respondents in Taoi District of Salavan also mentioned that the water supply allows them to use water for different purposes. It helps family members reduce time and distance in collecting water from streams, as they did in the past. During interviews in Sekong, many interviewees notably reported that the water supply provided numerous co-benefits for their family members. In particular, it reduces time and distance for collecting water and can be used for gardening. For instance, one interviewed villager in Dakcheung District of Sekong stated that the water supply provides benefits for family members, allowing them to have water for drinking and gardening. As a result, this helps improve villagers' livelihoods.

In terms of adverse impacts, all villagers highlighted during the interviews that no adverse impacts occurred during the construction and implementation phases. Most respondents in all provinces also reported no observed impacts during the implementation and construction phase. For example, one interviewee in Samuay District of Salavan mentioned that the project did not have any unexpected impacts on his family.

In summary, it appears that the project has contributed positively and significantly to the normalization of resilient water infrastructure in the project provinces. Many stakeholders were positive about the project design, planning, and construction, and suggested various aspects that could serve as a model for other projects. There is potential for this to impact future WASH and shelter interventions, with replication of effective aspects of the project.

4.5 Sustainability

Sustainability was considered in terms of institutional, technical, financial and information management aspects as detailed below.

4.5.1 Institutional Sustainability

The project aims to achieve a long-lasting impact through a number of measures. It has brought together key stakeholders at the provincial, district, and village levels. As mentioned in Section 4.2, key staff have been trained in using tools and maintaining the built infrastructure. The local government officials will also support the community-driven process (through facilitation and technical support). Tools have been provided and localized as part of the project. The emphasis on technical training, knowledge generation, and dissemination is hence a key component of achieving sustainability, which further strengthened through capacity build activities.

Infrastructure sustainability (durability and maintenance) is directly and indirectly promoted through the strong engagement of communities. Communities have actively engaged in the design and planning of infrastructures, ensuring that these are appropriate and truly needed. The communities have also engaged in the water infrastructure construction and are jointly responsible for monitoring the construction process (Section 4.3). The project team also reported that formal arrangements have been made in the project, including with provincial and district governments, through the Agreement of Cooperation (AoC) modality, to ensure that these agencies are responsible for the long-term maintenance of infrastructure provided by the project, even after the project is complete.

4.5.2 Technical Aspect

One of the notable showcases of the project's success is the development of the infographic profiles for 189 villages of three project provinces for climate change vulnerability assessments. According to the project team, this was a time-consuming task, as it required the collection and integration of data from villages across the three provinces of Attapeu, Salavan, and Sekong. Despite the lengthy process, the creation of these village profiles proved to be highly valuable.

The infographics provided a concise yet comprehensive overview of each village's conditions, including social and environmental factors, as well as their priority needs. This detailed information has been particularly beneficial for policymakers, especially at the provincial government level, as it enabled them to prioritize the construction of water supply systems in the villages that needed them most. The infographic not only guided decision-making within the current project but also offers a resource that can be regularly updated and utilized in future initiatives. Its ongoing relevance ensures that the data collected will continue to inform and support other development efforts, making it a significant long-term asset. Examples of these village infographics can be found in Annex 8.

As part of a communications strategy, UN-Habitat has developed PDF and hard-copy based infographics for each village (total of 189) populated with the data and statistics collected from data collection. Manually creating or editing each village profile Infographic can be cumbersome and time intensive. To streamline the process for efficiency, UN-Habitat has developed this system to automate the Infographic file generation process through the following website 'https://af.unhabitatlaos.org/infographic/?lang=eng&vc=1702037'. (See Figure 11)

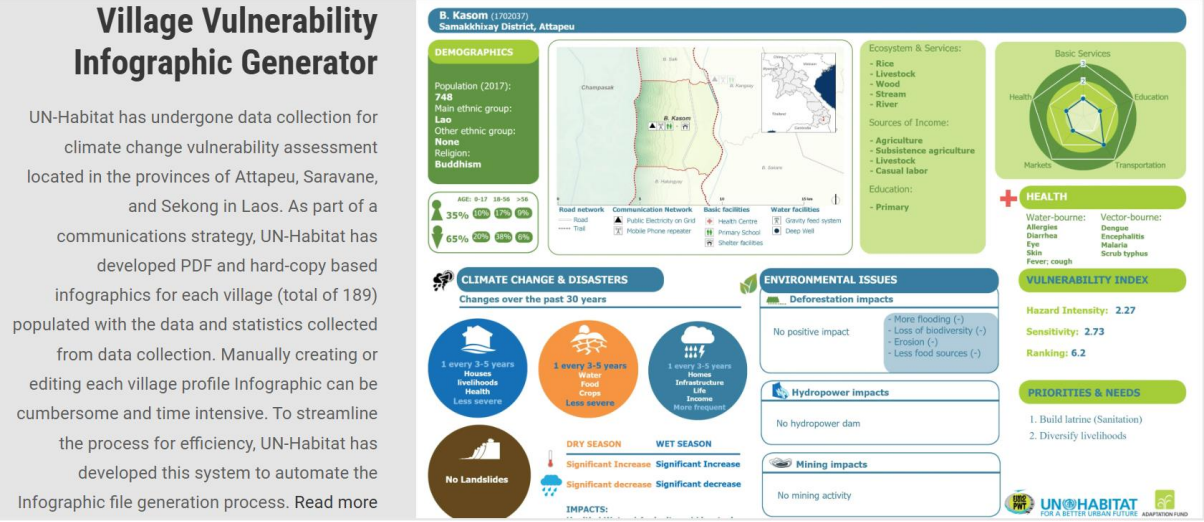


Figure 11: Village profile infographic developed by the project

Regarding capacity development under this project, significant efforts were made to train provincial and district-level staff from the outset to ensure technical sustainability. The training sessions focused on crucial topics such as climate change adaptation planning and climate risk and vulnerability assessment, aligned with the development of related reports in the three provinces of Attapeu, Salavan, and Sekong. According to the interviews, a total of 72 staff members across these provinces received training, including 13 women. While this represents a substantial achievement, reaching approximately 80 percent of the initial target of training 90 staff, the project faced challenges in fully meeting its goal.

One of the key obstacles was the travel restrictions imposed during the COVID-19 pandemic, which significantly hindered the project team's ability to travel to the project areas and deliver training sessions as planned. Despite these challenges, the project successfully equipped a significant number of staff with the skills and knowledge needed to contribute to climate change adaptation efforts in their respective regions. The training provided not only enhanced the capacity of the staff involved but also laid a strong foundation for continued development and resilience-building in the provinces. This capacity-building component of the project is a critical factor in its overall success and sustainability, ensuring that the trained staff can continue to apply and disseminate their knowledge long after the project's completion.

4.5.3 Financial Sustainability

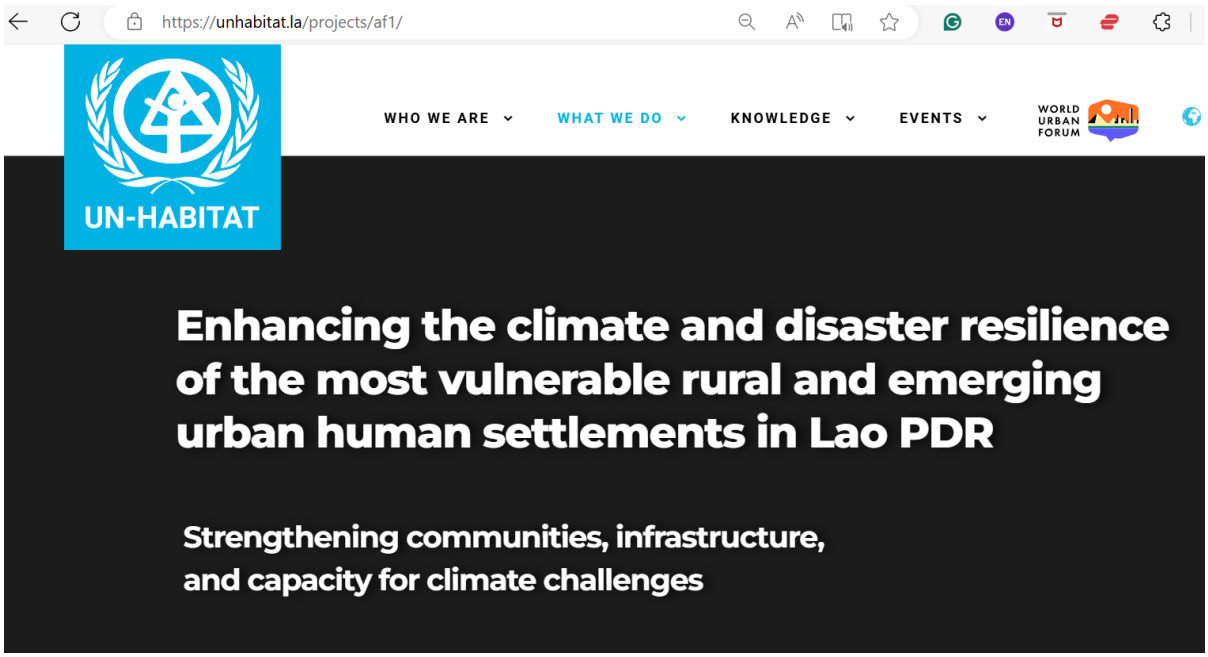
On the community/household scale, resilient water infrastructure will be maintained in partnership with local public utilities and communities/households moving forward. This will ensure that after the project, using appropriate pro-poor tariffs, the established systems are maintained. The project has established a pro-poor tariff for water supplied by infrastructure constructed or restored under the project and managed by NPSE (District Nampapa). This was formed as an agreement between the community and the District Nampapa. At the village level, water supply groups have been established. Prior to establishing a tariff, a 'willingness to pay' study was also carried out at the village level, which establishes how much communities/households are able to pay. Such a tariff increases the incentive for communities to maintain their facilities while generating a revenue stream that can be used for operation and maintenance.

Regarding the primary data received from the interviews, many villagers in Taoi District of Salavan mentioned that after the project ended and the water supply began operating, people in the village have been contributing a tariff (water use fee) for maintenance – for example, 50,000 kip is paid as tariff per household. Notably, one respondent from Lava Tai Village in Samuay District stated that he has contributed to the project financially by buying equipment in case it breaks or is not functioning. One interviewee said that he can contribute to the project as workforce for construction as well as maintenance as needed. He also mentioned that some families can contribute to the tariff for water fees. Notably, he also observed that some family members contributed raw materials for the water supply construction.

4.5.4 Information Management Sustainability

The web portal for the project has been developed by UN-Habitat to ensure knowledge management sustainability. All information about the project has been captured, communicated, and disseminated through this website, including project background and components, project climate change vulnerability assessments, project village infographics, and so on. (The website can be access through the following https://unhabitat.la/projects/af1/) (see Figure 12). In addition, UN-Habitat staff also reported that the design of infrastructure as well as internal project information developed throughout the project implementation were recorded and stored in the UN-Habitat database and distributed among government partners. This database has been developed in conjunction with the government, ensuring that ownership continues after the project has been implemented.

Figure 12: Project web protal



In summary, UN-Habitat anchored the project in the country's institutional setup by partnering with government institutions. UN-Habitat took a long-term view of capacity, and the project was implemented in partnership with Provincial DPWT and Nampapa of three provinces, thus contributing to institutional sustainability. Through learning by doing and through capacity-building workshops, the DPWTs increased their capacity in project implementation and maintenance. Recipients of the water infrastructure were identified before construction began, giving them a sense of ownership

throughout the process. Several stakeholders saw potential for replication of different aspects of the project, including the community-based implementation and the ownership of the project through stakeholder involvement at different levels. Financial sustainability was also ensured through establishing pro-poor tariffs for maintaining the constructed water infrastructure and forming agreements between the community and local government institutions (Nampapa). UN-Habitat developed a web portal for the project to ensure knowledge management sustainability.

4.6 Coherence

There are unquestionable synergies between different UN-Habitat projects. UN-Habitat has carried out a number of projects in Attapeu in the water and sanitation sector, working with NPSE Attapeu. The outcomes from previous projects contributed to this project in terms of the capacity built in NPSE Attapeu. The Government of Japan funded project, *Rehabilitation and Reconstruction of Housing Sector in Floods Affected Areas of Lao PDR*, had a focus on housing construction and small-scale water supply systems for flood affected settlements in Sanamxay District of Attapeu Province. From this project NPSE staff gained experience in constructing formalised water supply systems for rural villages, and they were able to quickly identify the appropriate design for water supply systems for the target villages. This shows the impact of UN-Habitat's long-term relationship with a number of provincial water utilities, whereby capacity built in one project contributes to results in succeeding projects.

The project demonstrated exemplary practices that can inspire and guide other projects across the country. One of the most notable aspects of this project is the implementation of climate risk and vulnerability assessments (CRVA) in three key provinces. These assessments have proven to be so effective and valuable that the Lao PDR government has decided to replicate this approach at the national level. Recognizing the success of the project's methodologies, the government has requested the assistance of UN-Habitat to conduct a comprehensive national climate risk and vulnerability assessment. This initiative not only showcases the potential for scaling up successful strategies but also paves the way for their expansion into other regions and sectors throughout the country. By doing so, it can be said that the project contributes significantly to the broader efforts of building climate resilience across different levels in Lao PDR.

Overall, the project is aligning and partnering with several initiatives focusing on climate change adaptation in the country, particularly in the process of conducting assessments mentioned above to improve existing water and sanitation infrastructures, schools, medical dispensaries, and community resilience through design/structural improvements of shelters for poor and vulnerable households. Climate change vulnerability assessments of settlements have been conducted through the lenses of exposure, sensitivity, and adaptive capacity to change in order to plan and design climate change adaptive interventions. UN-Habitat itself is also working closely with relevant partners and line ministries, including the Ministry of Public Works and Transport, Ministry of Health, Ministry of Planning and Investment, and Ministry of Agriculture and Forestry, as well as their departments at the provincial and district levels, on community-based water supply and sanitation issues in urban, peri-urban, emerging urban towns, and rural areas across Lao PDR. See a list of climate change adaptation projects implemented by UN-Habitat, different partners and ministries in Annex 11.

4.7 Cross-cutting Issues

Increasing resilience to flooding and other extreme weather events caused by climate change was a central aim of the project. Climate change mitigation was built into the project through the consideration of energy efficiency in the design and construction of water supplies, with solar panels installed for some villages. Furthermore, the project aimed to provide water supplies to the most vulnerable people affected by natural disasters. This was done through links to the Government's poverty reduction plans and using Government data. In three provinces, the selection of the most vulnerable communities was done through conducting climate risk and vulnerability assessments.

Regarding **gender equality and social inclusion (GESI)**, it is reported that the needs of women, disabled people, ethnic groups, and children are considered at all stages of the project, as it seeks to engage representatives of communities from different ethnic groups through a community-based and people's process approach. The engagement of all stakeholders aims to ensure the long-term sustainability of the project. For the same purpose, the project also attempts to develop participatory monitoring processes, which triggered institutional learning processes, participation, knowledge exchange, and replication and scale-up of good practices.

Specifically, **gender** rights were taken into consideration during the implementation process. Gender roles are clearly defined in the target communities, and this was evident in the surveys through which men, more than women, reported visiting the water supplies when they were under construction. Provincial DPWT officials did not report issues with gender and human rights but noted that they had integrated these concerns into the project. In particular, an effort was made to respect people's different beliefs. For example, before construction started, local people were consulted about their spiritual and cultural practices, recognizing that different ethnic groups have different practices. Traditions and cultural preferences were incorporated into the water supply design and construction.

According to the survey, there was not a marked difference between the responses of men and women. The main difference was that, of the 20 people surveyed, men had been more involved in the water supply construction than women. Both men and women rated their feeling of appreciation for their built water supply similarly. The satisfaction reported with the water supply was comparable, with 86% of male respondents and 80% of female respondents rating their satisfaction with built water taps in their houses at 4 or 5 out of 5. When rating their satisfaction with the overall project (design, planning, construction, and involvement) out of 5, all respondents rated it at 4 or 5.

There was more of a difference in the survey responses between the different **ethnic groups**. All 11 Lao Loum respondents rated their satisfaction with the water supply at 4 or 5 out of 5, whereas 14 of 17 Oi respondents rated it 3 or 4 out of 5. There are many possible reasons for the differences in responses between Lao Loum and Oi respondents, and it is not possible to attribute causality to any particular phenomenon or manner in which the survey was carried out. However, it is worth noting for future reference.

Of all 20 surveyed households in all three provinces, only two reported having a household member with a **disability**. The respondent's family member was partially blind but was able to see well enough to use the stairs to gain access to the house facilities.

Overall, many respondents in Districts of Salavan indicated notably that women and people with disabilities have participated in the consultation activities and meetings at the village level. For example, women in Phorbei Village of Taoi District also participated in the consultation meeting held by the project during the construction phase. However, men participated in the construction as the workforce.

Similar to other districts of Salavan, women and people with disabilities in Districts of Attapeu have participated in the consultation meetings, but not construction activities, as most men helped the project as labor for construction. Likewise, according to the report during the interview, most women in Sekong did not participate in the construction activities. However, they joined the consultation meetings held by the project. In short, most men were more involved in the project as labor for the water supply construction than women, while women only participated in the consultation activities.

Regarding capacity building, UN-Habitat staff noted the difficulty of identifying women to include in the project while respecting the Government's selection of the beneficiaries and participants. Of about 70 Government officials who participated in the training in three provinces, only 13 were women.

5 Lessons Learned

- Working directly with provincial-level government entities proved to be effective since it was more decentralized, efficient, and less bureaucratic (than central government bodies alone) in both administrative and operational matters.
- The model of working through government partners has long-term benefits in terms of capacity building and awareness-raising in the government partners.
- Working through government partners at different levels was also a cost-efficient model due to the use of government infrastructure and resources (in-kind and co-finance).
- Working with Provincial DPWT on various aspects, such as conducting a transparent, accountable pre-qualification and bidding process, allowed DPWT staff to learn by doing, and capacity was increased. The retention of oversight by UN-Habitat ensured cost-efficient delivery.
- A strong presence of UN-Habitat in a country can stimulate or facilitate further project development. The presence of UN-Habitat's multidisciplinary team was a key feature in its role in this project.
- Good communication with the UN-Habitat Regional Office, donor, and government partners, both officially and unofficially, ensures that there are no surprises to them in the event of requests such as an extension to the project due to the Covid-19 pandemic.
- Synergies and partnering among UN-Habitat projects made a considerable contribution to the project's achievements. This was particularly the case in the water supply component and activities. This shows the benefit of long-term relationships with government agencies and development partners.
- Constant consulting with the target communities and involving them in decision-making processes enhanced their sense of ownership in the project. Time invested in consultations and encouragement given to beneficiaries to be involved in the project implementation is worthwhile in terms of beneficiaries' participation in and commitment to the project implementation and its outcomes.

- Conducting Provincial and District Climate Vulnerability Assessments showcases the potential for scaling up at the national level and also paves the way for their expansion into other provinces throughout the country.
- The internal M&E tool 'Community Project Performance Monitoring & Evaluation (CPPME)' developed by UN-Habitat enabled the project team to effectively track the progress of ongoing activities on the ground and provided the flexibility to adjust schedules and make necessary changes to the project plan.
- Using community labor in the construction work makes a major contribution to effective project implementation on the ground and enhances ownership in the project.
- The cultures of different ethnic groups in Lao PDR are gendered in different ways, and the inclusion of women in the project helped challenge cultural norms. Partnership with the village-level Lao Women Union is of mutual benefit in increasing women's inclusion.

6 Recommendations

Project Planning and Implementation

- **Project Duration & Timing**: These types of complicated projects with 189 sub-projects spread across 3 provinces, 8 districts, and targeting remote settlements need a longer project duration, especially considering hard interventions, particularly construction work, must be conducted in the dry season or before the rainy season starts, as roads are often impassable during the rainy season.

- **Risk Mitigation**: The project must develop a plan for unexpected events that can cause delays in project implementation. For example, during the Covid-19 pandemic, work at the beginning of the year was suspended, speeding up the end of the project year and causing an extension.

- **Monitoring and Evaluation**: Ensure monitoring and evaluation (M&E) work continues after the project has ended in order to track if the built infrastructure remains functional. The project can seek support for monitoring this from similar projects under UN-Habitat.

- **Unexpected Needs**: During the interview, local people highlighted the need for toilet facilities. These could be considered for future initiatives.

Synergies and Partnerships

- **Collaboration with Government and Partners**: There is an opportunity to further develop synergies with other development and government partners in climate change adaptation and disaster risk management (DRM). This can be linked to the work UN-Habitat is doing in climate change adaptation, particularly in partnership with the Ministry of Natural Resources and Environment (MONRE).

- **Cross-Project Synergies**: Seek synergies and support with other projects on conducting climate vulnerability assessments or expanding them in other provinces and regions of the country.

- **Future Government Cooperation**: Secure support to enable UN-Habitat to respond to the Government's request for similar projects in other regions of the country.

Capacity Building and Knowledge Management

- **Build Back Better (BBB) Concept**: Promote the Build Back Better (BBB) concept in training manuals where possible. This could be incorporated into future training in other provinces.
- **Sustainability of Capacity Built**: Provide further support to ensure sustainability of capacity built and water infrastructure in the three project provinces and communities. Consider possible synergies with other ongoing or future projects such as AF2 and AF3 projects.
- **Knowledge Management System**: In addition to the internal database, create an accessible knowledge repository as part of the UN-Habitat knowledge management system so that infrastructure designs, training manuals, guidelines, etc., can be deposited as resources for future use by staff on other projects.
- **Share Monitoring Tools**: Explore the possibility of sharing widely the robust internal monitoring mechanism UN-Habitat established via its PPME tool.

Reputation and Knowledge Sharing

- **Showcasing Good Practices**: Find opportunities to present and showcase good project implementation practices (such as built small-scale water infrastructure) to the government and development partners.
- **Leveraging Positive Standing**: Build on the good standing that this project has given UN-Habitat in climate change adaptation and DRM.
- **Knowledge Exchange**: Share experiences, good practices, lessons learned, and challenges with similar projects under UN-Habitat, such as AF1 and AF2 projects.
- **Continued Communication with Local Authorities**: Continue communicating with local government authorities to ensure good cooperation for existing and future projects.

7 Evaluation Conclusions

Relevance: 5

Project was relevant to local and national needs. It, in particular, was consistent with government plans, strategies and regulations. The project also aligned with relevant climate change and sectoral policies. It supported global priorities such as the Sustainable Development Goals (SDGs), particularly SDGs 11, 13 and 6, UNSDCF, the New Urban Agenda and the Sendai Framework for Disaster Risk Reduction. The project was also well aligned with the priorities of the Adaptation Fund and met the needs of the local communities and villagers.

Effectiveness: 4

The project has been effective in achieving its objectives and components (both soft and hard). In particular, the implementation of hard interventions under this project in three provinces has had a significant impact, improving the livelihoods of approximately 125,295 villagers who have directly benefited from the new water supply systems There is also opportunity for conducting the monitoring and evaluation work after the project ended, and the integration of cross-cutting issues.

Efficiency: 4

The project had been implemented in an efficient manner. The efficient use of funds in provinces enabled water supply systems to be added to the project and this added greatly to the value of the project to beneficiaries. Resources were used efficiently at the sub-project level and there was adequate capacity for project implementation. The institutional arrangements through cooperation agreements with the local government authorities enabled a smooth and timely implementation.

Impact Outlook: 5

The project appears to be having a significant impact in terms of providing and normalising resilient housing. Many stakeholders were positive about the project design, planning and construction, and suggested various aspects that could be a model for other projects. Further support may be required to ensure long term impact for government institutions.

Sustainability: 4

The positive effects of resilient water infrastructure appear sustainable. There is potential for replication of several aspects of the project, including institutional, technical, financial and information management. In particular, the Capacity building may require further support for future projects to ensure sustainability.

Coherence: 4

The project was embedded in Government systems and complementary to other relevant projects. There was synergy between UN-Habitat projects. UN-Habitat is also working closely with the relevant partners and line ministries. This enhanced synergies among projects under the UN-Habitat.

Cross-cutting issue: 4

Cross-cutting issue was considered by the project. In particular, the gender and ethic people rights were taken into consideration during the implementation process. Gender roles are clearly defined in the target communities and this was evident by participating and involving in the project consultation processes. Most men also contributed as the workforce for the construction work.

Table 8: Evaluation criteria ratings

Evaluation Criteria	
Rating of performance	**Characteristics**
Highly satisfactory (5)	The project had several significant positive factors with no defaults or weaknesses
Satisfactory (4)	The project had positive factors with minor defaults or weaknesses
Partially satisfactory (3)	The project had moderate to notable defaults or weaknesses
Unsatisfactory (2)	The project had negative factors with major defaults or weaknesses
Highly unsatisfactory (1)	The project had negative factors with severe defaults or weaknesses

In conclusion, it was clear that the project had met its objective of providing resilient infrastructure for vulnerable communities in the three provinces of Attapeu, Salavan, and Sekong. According to the survey, beneficiaries expressed appreciation and acknowledgment of the built infrastructure. Especially, there was widespread appreciation for the formalized water supply systems. This also contributed to the appreciation and good standing of the project among a wide range of stakeholders and onlookers from the local to the national level.

In terms of outputs, the project has met the requirements of effectiveness and efficiency. The hardware components of the project were delivered to a high standard. This is a testament to the expertise and experience of UN-Habitat and the implementing agencies. The project, through its partnerships and community-based approach, has also strengthened cooperation and relationships from the national to the local level. At the national level, UN-Habitat is now known for its climate change adaptation work. This is an encouraging sign pointing to the ability to cooperate promptly in the case of future work.

At the impact level, there is an opportunity to increase the long-term impact of the capacity-building activities by following up with future support as requested by project provinces. Sustainability is a major consideration. Effective measures had been taken to ensure the sustainability of the water supply systems, including capacity building, financial, and information management aspects. The project was also strengthened by a greater focus on cross-cutting issues, including gender and human rights as they relate to ethnic groups. There is an opportunity to partner with local mass organizations for mutual benefit in increasing the impact of projects.

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Annex 1: Evaluation Criteria and Questions

Criteria	Evaluation questions and sub-questions
Relevance	Did the project do the right things? To what extent were the projects objectives and design relevant to beneficiaries, Adaption Fund, UN-Habitat, country, institutions' needs? • To what extent was the project relevant to requirements/needs of the beneficiaries (national and local governments)? • what extent was the implementation strategy responsive to donor and UN-Habitat strategies? • To what extent were the project's intended outputs and outcome consistent with national and local policies and priorities, and the needs of target beneficiaries? • To what extent is UN-Habitat's comparative advantage in this area of work compared with other UN entities and key partners? • To what extent were the identification of key stakeholders and target groups (including gender analysis and analysis of vulnerable groups) and of institutional capacity issues relevant?
Effectiveness	To what extent did the project enhance the climate change resilience of the targeted settlements? • To what extent did the project, improve knowledge on resilience against climate-induced events, increase physical infrastructure and strengthen institutional capacity to reduce risks associated with climate-induced events? • To what extent has the project proven to be successful in terms of ownership in relation to the local context and the needs of beneficiaries? • To what extent and in what ways has ownership, or lack of it, impacted the effectiveness of the project? • Was the monitoring and evaluation system in place and facilitated tracking of progress towards achievement of outcomes and objective of the project, using indicators of achievement? How was the information provided through the early warning system used during the project implementation to improve performance and to adapt to changing needs? • To what extent did the assumptions and risk assessments at results level turn out to be inadequate or invalid, or unforeseen external factors intervened, and how flexible the project's management has been to ensure that the results would still achieve the intended purpose?
Efficiency	How well were resources used? • To what extent did resources and management structure of the project support efficiency for project implementation? • To what extent did the project management and local partners have the capacity to design and implement the project? • To what extent were the institutional arrangements of UN-Habitat adequate for the project? What type of (administrative, financial and managerial) obstacles did the project face and to what extent has this affected the project? • To what extent the project demonstrated value for money, as well what was the quality of the monitoring performed during the implementation and measures taken to adapt as necessary?

	• To what extent did activities and outputs contribute to the expected accomplishments (outcomes) and objective of the project? • To what extent was monitoring and reporting on the project transparent and satisfied key stakeholders?
Impact	What difference has the project made? • To what extent has the project generated changes in the targeted settlements? • Did the project produce any unintended or unexpected impacts, and if so, how have these affected the overall impact?
Sustainability	To which extent will the benefits and achieved outcomes of the project continue or are likely to continue when funding from the Adaption fund ends? • To what extent was capacity developed for the sustainability of the project achievement? Is there sufficient awareness in support of projects' objectives? • To what extent did the project engage the participation of key stakeholders in design, implementation, monitoring, and reporting to see that it is in their interest that the project benefits continue? • To what extent was the theme of the project aligned with national/local development priorities? What is the likelihood of financial and economic resources being available one the Adaptation Fund ends? • Are systems for accountability and required technical know-how in place? To what extent can the project be replicated or scaled up at national or local levels? • To what extent did the project foster innovative partnerships with local institutions and authorities and other development partners?
Coherence	To what extent did other projects, support or complement the project? • Was the project coherent and implemented in synergies and interlinkages with other Adaption Fund development projects? • Was the project coherent or complementary and in coordination with other UN-Habitat projects and programmes?
Cross-cutting issues	To what extent were cross-cutting issues of gender, human rights, environment and disability considered and integrated into UN-Habitat Programme design and implementation?

Annex 2: Rating of Performance by Evaluation Criteria

Rating of performance	Characteristics
Highly satisfactory (5)	The programme/project had several significant positive factors with no defaults or weaknesses in terms of relevance/ appropriateness of project design/ efficiency/ effectiveness/ sustainability/ impact outlook.
Satisfactory (4)	The programme/project had positive factors with minor defaults or weaknesses in terms of relevance/ appropriateness of project design/ efficiency/ effectiveness/ sustainability/ impact outlook.
Partially satisfactory (3)	The programme/project had moderate to notable defaults or weaknesses in terms of relevance/ appropriateness of project design/ efficiency/ effectiveness/ sustainability/ impact outlook.
Unsatisfactory (2)	The programme/project had negative factors with major defaults or weaknesses in terms of relevance/ appropriateness of project design/ efficiency/ effectiveness/ sustainability/ impact outlook.
Highly unsatisfactory (1)	The programme/project had negative factors with severe defaults or weaknesses in terms of relevance/ appropriateness of project design/ efficiency/ effectiveness/ sustainability/ impact outlook.

Source: UN-Habitat Evaluation Unit 2015

Annex 3: Questions for Key Informant Interviews (KII)

Stakeholder types	Evaluation criteria and questions
UN-Habitat: • Regional Advisor • Chief Technical Advisor • Project Manager/Project Engineer	Relevance: • To what extent was the project relevant to needs and priority of the country? • How and to what extent are the project interventions/activities aligned to the adaptation fund and UN-Habitat strategies? • To what extent is UN-Habitat's comparative advantage of this project compared with other UN entities and development partners? Effectiveness: • In your opinion, how and to what extent did the project enhance the climate change resilience of the targeted settlements? • To what extent did the project, improve or increase knowledge and institutional capacity of key stakeholders on climate resilience? • How has the project proven to be successful in terms of ownership in relation to the country context and the needs of beneficiaries? • Was the monitoring and evaluation system in place and facilitated tracking of progress towards achievement of outcomes and objective of the project, using indicators of achievement? Efficiency: • In your opinion, how well were resources used for the project implementation? • To what extent did resources of the project support efficiency for project implementation? • To what extent did government entities have the capacity to design and implement the project? • What type of financial and managerial obstacles did the project face and to what extent has this affected the project? • To what extent did activities contribute to the expected outcomes and objective of the project? • How was monitoring and reporting on the project transparent and satisfied key stakeholders?

Stakeholder types	Evaluation criteria and questions
	Impact: • In your view, what major difference has the project made? • To what extent has the project generated changes in the targeted settlements? Please provide an example? • Did the project produce any unexpected impacts, and if so, what are these impacts and how have these affected the overall impact? Sustainability: • In your view, are the benefits and achieved outcomes of the project likely to continue when funding from the Adaption fund ends? How and to which extent? • To what extent was capacity developed for the sustainability of the project achievement? • How and to what extent did the project engage the participation of key stakeholders in design, implementation, monitoring, and reporting to ensure the sustainability of the project? • To what extent can the project be replicated or scaled up (in other areas of the country)? • To what extent did the project enhance innovative partnerships with other development partners? Coherence: • To what extent did other projects, support or complement this project? • Was the project implemented in synergies with other Adaption Fund development projects? If so, please elaborate more? • Was the project complementary and in coordination with other UN-Habitat projects? Cross-cutting issues: • To what extent were cross-cutting issues of gender, human rights, environment and disability considered for this project?
National Government: • Department of Water Supply, Ministry of Public Works and Transport (MPWT)	Relevance: • To what extent was the project relevant to needs of the national government? • To what extent were the project's activities consistent with or contributed to national policies and development plans? Effectiveness:

Stakeholder types	Evaluation criteria and questions
	• In your opinion, how and to what extent did the project enhance the climate change resilience? • To what extent did the project, improve or increase knowledge and institutional capacity of the national stakeholders on climate resilience? • How and to what extent has the project proven to be successful in terms of ownership in the project implementation for the national government? • Was the monitoring and evaluation system in place at the national level and facilitated tracking of progress towards achievement of outcomes and objective of the project? Efficiency: • In your opinion, how well were resources used for the project implementation? • To what extent did resources of the project support efficiency for project implementation? • To what extent did national government have the capacity to design and implement the project? • What type of administrative, financial and managerial obstacles did the you face and to what extent has this affected the project? • How was monitoring and reporting on the project transparent and satisfied you (as the national stakeholders)? Impact: • In your view, what major difference has the project made? • To what extent has the project generated changes in the targeted settlements? • Did the project produce any unexpected impacts, and if so, what are these impacts? Sustainability: • In your view, are the project likely to continue when funding from the Adaption fund ends? How and to which extent? • To what extent was capacity developed for the sustainability of the project achievement? • How and to what extent did the project engage the participation of the national stakeholders in design, implementation, monitoring, and reporting to ensure the sustainability of the project? • What is the likelihood of financial resources being available from the government entity once the Adaptation Fund ends?

Stakeholder types	Evaluation criteria and questions
	• To what extent can the project be replicated in other provinces or scaled up at national level? Coherence: • To what extent did other projects, support or complement the project? • Was the project implemented in synergies with other projects under your ministry? If so, please elaborate more? • Was the project complementary and in coordination with other public projects and programmes? Cross-cutting issues: • To what extent were cross-cutting issues of gender, human rights, environment and disability considered and integrated into your sector's policies and development plans? • Do you have any suggestions as to how the project could be improved?
Provincial and District Governments: • Provincial Department of Public Works and Transport (PPWT) of Attapeu, Salavan and Sekong Provinces • Nampapa State-own Enterprise (NPSE) of Attapeu, Salavan and Sekong Provinces • District Office of Public Works and Transport (DPWT) of Districts in Attapeu, Salavan and Sekong Provinces	Relevance: • To what extent was the project relevant to needs of the local (provincial and district) governments? • To what extent were the project's activities consistent with local policies and development plans? Effectiveness: • In your opinion, how and to what extent did the project enhance the climate change resilience of the targeted settlements? • To what extent did the project increase knowledge and institutional capacity of the local government on climate resilience? • How and to what extent has the project enhanced ownership in the project implementation for the local government? Efficiency: • In your opinion, how well were resources used for the project implementation? • To what extent did local government have the capacity to design and implement the project? • What type of financial and managerial obstacles did you face and to what extent has this affected the project?

Stakeholder types	Evaluation criteria and questions
	• How was monitoring and reporting on the project transparent and satisfied you (as local stakeholders)? Impact: • In your view, what major difference has the project made? • To what extent has the project generated changes in the targeted settlements? • Did the project produce any unexpected impacts, and if so, what are these impacts? Sustainability: • Is there sufficient awareness for the local stakeholders in support of projects' objectives? If so, how? • How and to what extent did the project engage the participation of local stakeholders in design, implementation, monitoring, and reporting to ensure the sustainability of the project? • What is the likelihood of financial resources being available from the local governments once the Adaptation Fund ends? • To what extent did the project enhance partnerships with local institutions and authorities? Coherence: • To what extent did other projects in your province or district, support or complement this project? • Was the project implemented in synergies with other projects in your provinces? If so, please elaborate more? Cross-cutting issues: • To what extent were cross-cutting issues of gender, human rights, environment and disability considered under this project for your provinces or districts? • Do you have any suggestions as to how the project could be improved?

Annex 4: Focus Group Discussion (FGD) Questions

1. How important is the new construction (water supply) of this project for your family?
2. What difference does this new construction mean to your family? Consider livelihood, health, etc. Are these better than before?
3. What do you like about the project? Why?
4. How well are you satisfied the project in overall (design, construction, consultation phases, etc.)?
5. In your view, what are the main benefits you can see that the project has brought?
6. Are there any negative impacts you faced, especially, the construction phase? If so, what are they?
7. What can you contribute to the project once the it ends, such as the water supply maintenance, etc.?
8. Have you involved with the project during the design or construction phase? If so, to what extent?
9. Have women and disable groups engaged in the consultation meetings during the construction phase? If so, how?
10. Now you have water supply, what are you looking forward to?

Annex 5: Survey Questions (Beneficiaries)

Name (optional): .....

1. Age

15-20	21-30	31-40	41-50	51-60	61-70	71+

2. Ethnic group:

Lao Loum	other (specify): .....

3. What are your thoughts about the project (i.e., water supply)?

1 (Not very satisfied)	2	3 (Satisfied)	4	5 (Extremely satisfied)

4. To what extent does the project meet the needs of your family?

1 (Very low)	2	3 (Moderate)	4	5 (Very high)

5. To what extent the main benefits you can see that the project has brought?

1 (Very low)	2	3 (Moderate)	4	5 (Very high)

6. How happy are you with your water supply?

1 (Not very happy)	2	3 (Happy)	4	5 (Extremely happy)

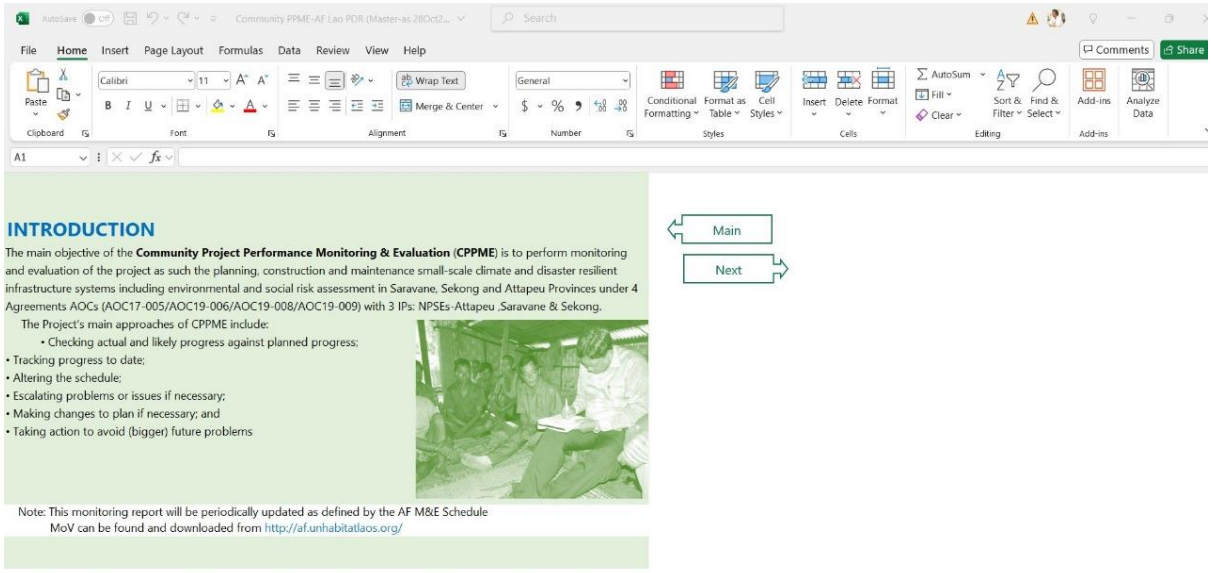
7. To what extent are you concerned about the project in terms of adverse impacts?

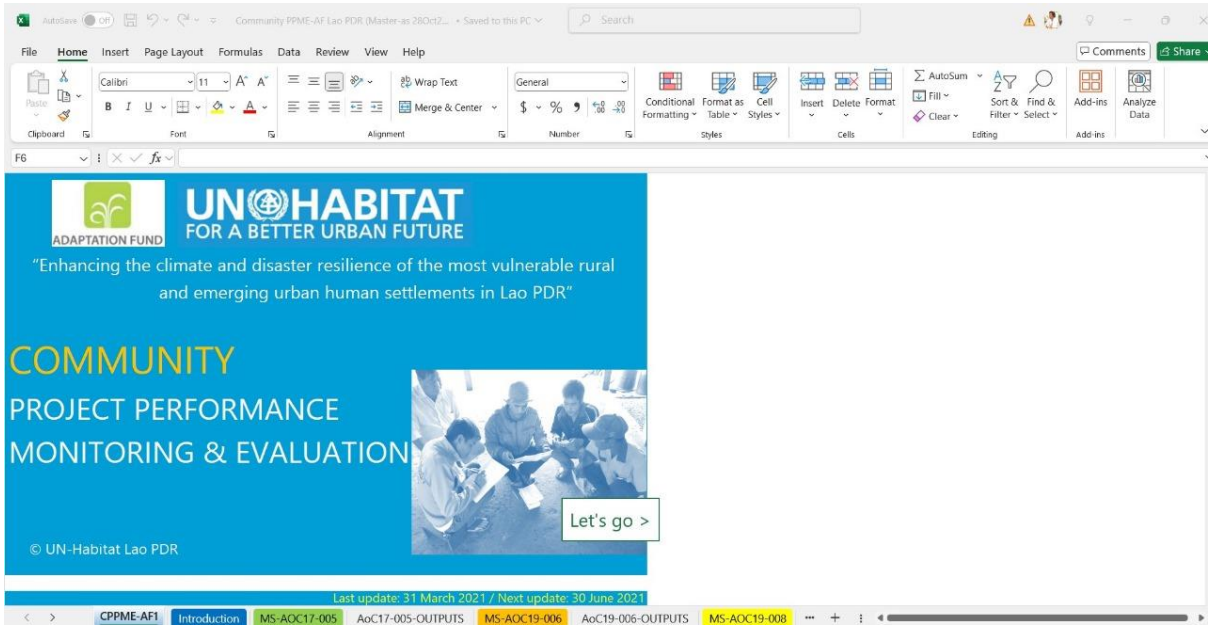
1 (Very low)	2	3 (Moderate)	4	5 (Very high)

8. To what extent has the project and water supply changed your family's life?

1 (Very low)	2	3 (Moderate)	4	5 (Very high)

Annex 6: Community Project Performance Monitoring and Evaluation (CPPME)





Annex 7: Project Result Tracker

ADAPTATION FUND

Results Tracker for Adaptation Fund (AF) Projects

Goal: Assist developing-country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change in meeting the costs of concrete adaptation projects and programmes in order to implement climate-resilient measures.

Important: Please read the following guidance document (also posted on the Adaptation Fund website) before entering your data
Link: http://www.adaptation-fund.org/sites/default/files/Results%20Framework%20and%20Baseline%20Guidance%20final.pdf

Adaptation Fund Strategic Results Framework

Project ID	LAO/MIE/DRR/2016/1
Implementing Entity	United Nations Human Settlements Programme
Type of implementing entity	MIE
Country	Lao People's Democratic Republic
Region	Asia-Pacific
Sector	Multi-sector

		Baseline information			
			Total (direct + indirect beneficiaries)	Direct beneficiaries supported by the project	Indirect beneficiaries supported by the project
Impact: Increased resiliency at the community, national, and regional levels to climate variability and change	**Core Indicator**: No. of beneficiaries	*Total*			
		% of female beneficiaries			
		% of Youth beneficiaries			

Results Tracker

	Target performance at completion				Performance at mid-term			
	Total (direct + indirect beneficiaries)	Direct beneficiaries supported by the project	Indirect beneficiaries supported by the project		Total (direct + indirect beneficiaries)	Direct beneficiaries supported by the project	Indirect beneficiaries supported by the project	
Total	107,000	47,000	60,000	*Total*	3371	3371		
% of female beneficiaries	50.00%	50.00%	50.00%	*% of female beneficiaries*	50.48%	50.48%		
% of Youth beneficiaries	30.00%	30.00%	30.00%	*% of Youth beneficiaries*	48.00%	48.00%		

Target performance at completion			Performance at mid-term		
Number of targeted stakeholders	Hazards information generated and	Overall effectiveness	Number of targeted stakeholders	Hazards information generated and	Overall effectiveness

Results Tracker

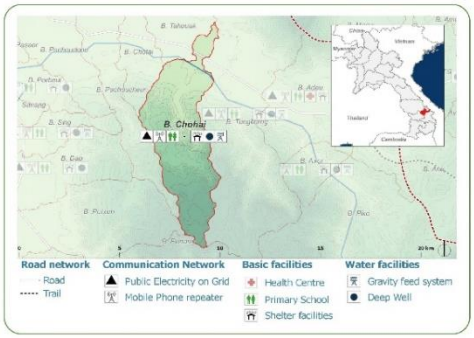
Annex 8: Infographic of Project Villages

All infographic of the 189 villages can be found through this link:
https://af.unhabitatlaos.org/infographic/?lang=eng&vc=1702037

B. Chohai (1402011)
Ta oi District, Saravane

DEMOGRAPHICS

Population (2017):
569
Main ethnic group:
Bakoe
Other ethnic group:
None
Religion:
Animism



Ecosystem & Services:
- **Rice**
- **Maize**
- **Livestock**
- **Vegetables**
- **River**

Sources of Income:
- **Subsistence agriculture**
- **Livestock**

Education:
- **Primary**

HEALTH

Water-bourne:
Allergies
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Encephalitis
Malaria

CLIMATE CHANGE & DISASTERS
Changes over the past 30 years

	DRY SEASON	WET SEASON
	Slight increase	Slight increase
	Slight Decrease	Slight Decrease

IMPACTS:
Health / Water / Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts
+ More agricultural land (+)
- Loss of biodiversity (-)
- Less food sources (-)

Hydropower impacts
No hydropower dam

Mining impacts
No mining activity

VULNERABILITY INDEX

Hazard Intensity: 0.8
Sensitivity: 3.8
Ranking: 3.04

PRIORITIES & NEEDS

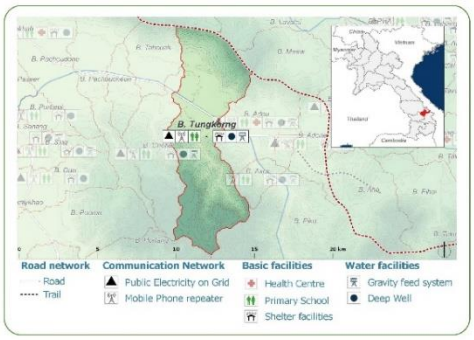
1. Increase agricultural production (expand production area)
2. Construct water facility (borehole)
3. Construct bridge (suspended)

UN-HABITAT FOR A BETTER URBAN FUTURE ADAPTATION FUND

B. Tungkorng (1402012)
Ta oi District, Saravane

DEMOGRAPHICS

Population (2017):
968
Main ethnic group:
Bakoe
Other ethnic group:
Katang
Religion:
Animism



Ecosystem & Services:
- **Rice**
- **Maize**
- **Livestock**
- **Vegetables**
- **River**

Sources of Income:
- **Subsistence agriculture**
- **Livestock**

Education:
- **Primary**

HEALTH

Water-bourne:
Allergies
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Encephalitis
Malaria

CLIMATE CHANGE & DISASTERS
Changes over the past 30 years

	DRY SEASON	WET SEASON
	Slight increase	Slight Decrease
	Slight Decrease	Slight Decrease

IMPACTS:
Health / Water / Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts
+ More agricultural land (+)
- Loss of biodiversity (-)
- Less food sources (-)

Hydropower impacts
No hydropower dam

Mining impacts
No mining activity

VULNERABILITY INDEX

Hazard Intensity: 0.6
Sensitivity: 3.5
Ranking: 2.1

PRIORITIES & NEEDS

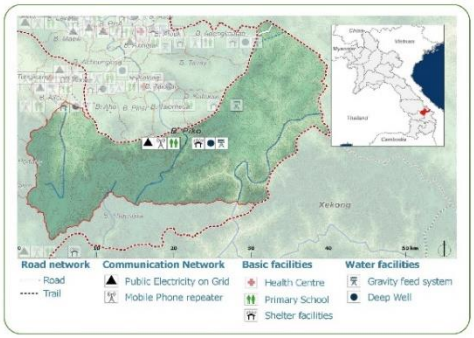
1. Increase agricultural production (expand production area)
2. Construct water facility (borehole)
3. Construct pipe distribution system

UN-HABITAT FOR A BETTER URBAN FUTURE ADAPTATION FUND

B. Piko (1402013)
Ta oi District, Saravane

DEMOGRAPHICS

Population (2017):
739
Main ethnic group:
Bakoe
Other ethnic group:
Ta Oy, Katang
Religion:
Animism



Ecosystem & Services:
- **Rice**
- **Maize**
- **Livestock**
- **Vegetables**
- **Wood**
- **Stream**

Sources of Income:
- **Subsistence agriculture**
- **Livestock**

Education:
- **Primary**
- **High school**

HEALTH

Water-bourne:
Allergies
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Encephalitis
Malaria

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years

DRY SEASON	WET SEASON
Slight increase	Slight Decrease
Some decrease	Slight Decrease

IMPACTS:
Health / Water / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

+ More agricultural land (+)
- Loss of biodiversity (-)
- Erosion (-)
- Less food sources (-)

Hydropower impacts

No hydropower dam

Mining impacts

No mining activity

VULNERABILITY INDEX

Hazard Intensity: 0.93

Sensitivity: 2.9

Ranking: 2.71

PRIORITIES & NEEDS

1. Construct water facility (borehole)
2. Repair water reservoir
3. Build latrine (Sanitation)

B. Adone (1402014)
Ta oi District, Saravane

DEMOGRAPHICS

Population (2017):
675
Main ethnic group:
Bakoe
Other ethnic group:
Lao
Religion:
Animism

Ecosystem & Services:
- **Rice**
- **Maize**
- **Livestock**
- **Grass**
- **Vegetables**
- **River**

Sources of Income:
- **Subsistence agriculture**
- **Livestock**
- **Casual labor**

Education:
- **Primary**

HEALTH

Water-bourne:
Allergies
Eye
Skin

Vector-bourne:
Dengue
Encephalitis

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years

DRY SEASON	WET SEASON
Slight increase	Slight increase
Slight Decrease	Slight Decrease

IMPACTS:
Health / Water / Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

+ More agricultural land (+)
- Loss of biodiversity (-)
- Less food sources (-)

Hydropower impacts

No hydropower dam

Mining impacts

No mining activity

VULNERABILITY INDEX

Hazard Intensity: 0.8

Sensitivity: 3.07

Ranking: 2.45

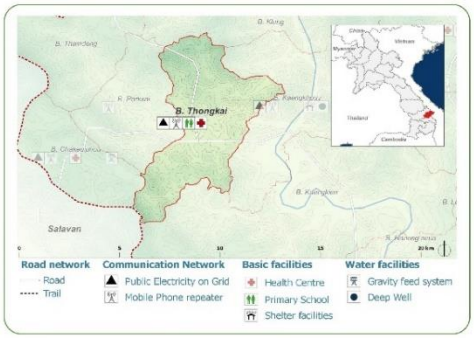
PRIORITIES & NEEDS

1. Improve water reservoir
2. Improve pipe distribution system
3. Construct water facility (borehole)

B. Thongkai (1502003)
Kaleum District, Sekong

DEMOGRAPHICS

Population (2017):
1879
Main ethnic group:
Ngkriang (Ngè')
Other ethnic group:
Katu, Oy
Religion:
Animism



Ecosystem & Services:
- **Stream**
- **Water spring**

Sources of Income:
- **Agriculture**
- **Subsistence agriculture**
- **Livestock**

Education:
- **Kindergarten**
- **Primary incomplete**
- **Primary**
- **High school**

HEALTH

Water-bourne:
Allergies
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Encephalitis
Malaria

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years

1 every 10 years
Houses
livelihoods
Health
Less severe

1 every 10 years
Water
Food
Crops
More severe

More than 1 per year
Homes
Infrastructure
Life
Income
More frequent

People injuried

DRY SEASON	WET SEASON
Significant Increase	Slight increase
Slight Decrease	Slight Decrease

IMPACTS:
Health / Water / Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

+ Industrial develop (+)
+ More agricultural land (+)
- Erosion (-)
- Less food sources (-)

Hydropower impacts

No hydropower dam

Mining impacts

No mining activity

VULNERABILITY INDEX

Hazard Intensity: 1.57
Sensitivity: 2.67
Ranking: 4.18

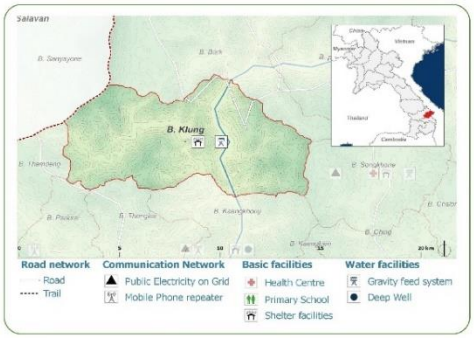
PRIORITIES & NEEDS

1. Build latrine (Sanitation)
2. Construct water facility (gravity fed)
3. Improve water quality

B. Klung (1502005)
Kaleum District, Sekong

DEMOGRAPHICS

Population (2017):
210
Main ethnic group:
Oy
Other ethnic group:
Ngkriang (Ngè'), Lao
Religion:
Animism



Ecosystem & Services:
- **None**

Sources of Income:
- **Casual labor**

Education:
- **Primary incomplete**

HEALTH

Water-bourne:
Allergies
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Encephalitis
Malaria

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years

1 every 10 years
Houses
livelihoods
Health
Less severe

1 every 10 years
Food
Less severe

1 every 10 years
Homes
Infrastructure
Income
Less frequent

No Landslides

DRY SEASON	WET SEASON
Significant Increase	Some increase
Slight Decrease	Significant Increase

IMPACTS:
Health / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

+ More agricultural land (+)
- Loss of biodiversity (-)
- Landslides
- Erosion (-)
- Less food sources (-)

Hydropower impacts

No hydropower dam

Mining impacts

No mining activity

VULNERABILITY INDEX

Hazard Intensity: 1.63
Sensitivity: 3.2
Ranking: 5.23

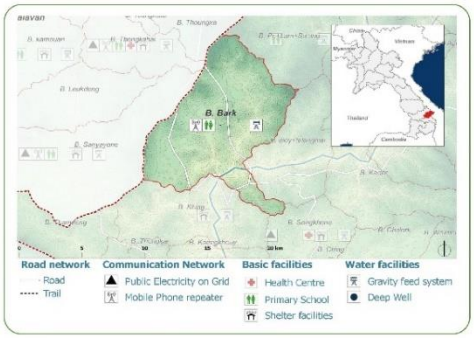
PRIORITIES & NEEDS

1. Build latrine (Sanitation)
2. Vaccinate animals/lifestock

B. Bark (1502006)
Kaleum District, Sekong

DEMOGRAPHICS

Population (2017):
209
Main ethnic group:
Ngkriang (Ngè')
Other ethnic group:
Oy
Religion:
Animism



Ecosystem & Services:
- **None**

Sources of Income:
- **Subsistence agriculture**

Education:
- **Primary**

HEALTH

Water-bourne:
Allergies
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Encephalitis
Malaria

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years

1 every 10 years
Houses
livelihoods
Health
Less severe

1 every 10 years
Water
Food
Crops
More severe

More than 1 per year
Homes
Infrastructure
Income
More frequent

People injuried

DRY SEASON	WET SEASON
Slight increase	Slight increase
Slight increase	Slight increase

IMPACTS:
Health / Water / Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

+ Industrial develop (+)
+ More agricultural land (+)

- Loss of biodiversity (-)
- Landslides
- Erosion (-)
- Less food sources (-)

Hydropower impacts

No hydropower dam

Mining impacts

No mining activity

VULNERABILITY INDEX

Hazard Intensity: 1.07

Sensitivity: 3.7

Ranking: 3.95

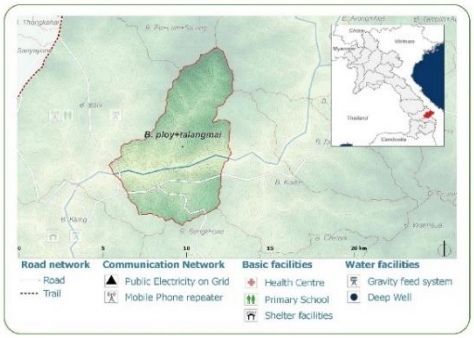
PRIORITIES & NEEDS

1. Construct water facility (gravity fed)
2. Build latrine (Sanitation)

B. Ploy+Talangmai (1502007)
Kaleum District, Sekong

DEMOGRAPHICS

Population (2017):
300
Main ethnic group:
Ngkriang (Ngè')
Other ethnic group:
None
Religion:
Animism



Ecosystem & Services:
- **Stream**

Sources of Income:
- **Subsistence agriculture**

Education:
- **Primary incomplete**

HEALTH

Water-bourne:
Allergies
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Encephalitis
Malaria

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years

1 every 10 years
Houses
livelihoods
Health
Less severe

1 every 3-5 years
Water
Food
Crops
More severe

More than 1 per year
Homes
Infrastructure
Income
Less frequent

People injuried

DRY SEASON	WET SEASON
Slight increase	Slight increase
Slight Decrease	Slight Decrease

IMPACTS:
Health / Water / Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

+ Industrial develop (+)
+ More agricultural land (+)

- Loss of biodiversity (-)
- Less food sources (-)

Hydropower impacts

No hydropower dam

Mining impacts

No mining activity

VULNERABILITY INDEX

Hazard Intensity: 1.33

Sensitivity: 3.9

Ranking: 5.2

PRIORITIES & NEEDS

1. Improve water quality
2. Build latrine (Sanitation)
3. Training; management and maintenance (Sanitation)

B. Kador (1502008)
Kaleum District, Sekong

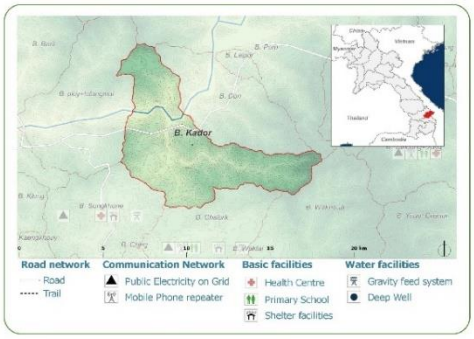
DEMOGRAPHICS

Population (2017):
155

Main ethnic group:
Katu

Other ethnic group:
Ngkriang (Ngè'), Oy

Religion:
Animism



Ecosystem & Services:
- **Grass**
- **Stream**
- **River**
- **Water spring**

Sources of Income:
- **Casual labor**

Education:
- **None**

HEALTH

Water-bourne:
Allergies
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Encephalitis
Malaria

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years

1 every 10 years
Houses
livelihoods
Health
Less severe

1 every 10 years
Food
More severe

1 every 10 years
Homes
Infrastructure
Income
Less frequent

No Landslides

DRY SEASON	WET SEASON
Some increase	Some increase
Some increase	Significant Increase

IMPACTS:
Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

+ More agricultural land (+)

No negative impact

Hydropower impacts

No hydropower dam

Mining impacts

No mining activity

VULNERABILITY INDEX

Hazard Intensity: 2.87

Sensitivity: 4.2

Ranking: 12.04

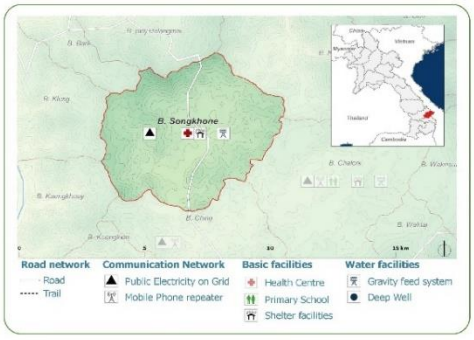
PRIORITIES & NEEDS

1. Improve water quality
2. Construct water facility (gravity fed)
3. Build latrine (Sanitation)

B. Songkhone (1502018)
Kaleum District, Sekong

DEMOGRAPHICS

Population (2017):
512
Main ethnic group:
Ngkriang (Ngè')
Other ethnic group:
Katu, Hrlak (Alak)
Religion:
Animism



Ecosystem & Services:
- **Stream**
- **Water spring**

Sources of Income:
- **Subsistence agriculture**
- **Livestock**

Education:
- **Primary incomplete**

HEALTH

Water-bourne:
Allergies
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Encephalitis

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years

1 every 10 years
Houses
livelihoods
Health
Less severe

1 every 10 years
Water
Food
Crops
Less severe

More than 1 per year
Homes
Infrastructure
Income
More frequent

No Landslides

DRY SEASON	WET SEASON
Slight increase	Slight increase
Slight Decrease	Slight Decrease

IMPACTS:
Health / Water / Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

+ Industrial develop (+)
+ More agricultural land (+)

- Loss of biodiversity (-)
- Erosion (-)
- Less food sources (-)

Hydropower impacts

No hydropower dam

Mining impacts

No mining activity

VULNERABILITY INDEX

Hazard Intensity: 0.93

Sensitivity: 3.57

Ranking: 3.33

PRIORITIES & NEEDS

1. Build latrine (Sanitation)
2. Training; management and maintenance (Sanitation)
3. Training and awareness raising (Food source)

B. Toiy (1701006)
Xaysetha District, Attapeu

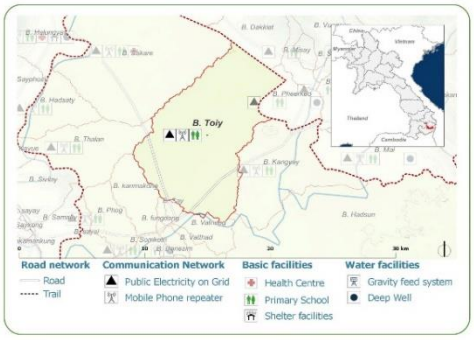
DEMOGRAPHICS

Population (2017):
1179

Main ethnic group:
Lao

Other ethnic group:
None

Religion:
Buddhism



Ecosystem & Services:
- **None**

Sources of Income:
- **Agriculture**
- **Subsistence agriculture**
- **Livestock**
- **Casual labor**

Education:
- **Kindergarten**
- **Primary**

HEALTH

Water-bourne:
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Malaria

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years

1 every 10 years
Houses
livelihoods
Health
Less severe

1 every 10 years
Water
Food
Crops
Less severe

1 every 3-5 years
Homes
Infrastructure
More frequent

No Landslides

	DRY SEASON	WET SEASON
	Significant Increase	Slight increase
	Significant decrease	Significant decrease

IMPACTS:
Health / Water / Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

+ Industrial develop (+)

- Less food sources (-)

Hydropower impacts

No positive impact

- Water availability (-)

Mining impacts

No mining activity

VULNERABILITY INDEX

Hazard Intensity: 2.83

Sensitivity: 2.93

Ranking: 8.31

PRIORITIES & NEEDS

1. Construct water facility (borehole)
2. Build latrine (Sanitation)
3. Improve water quality

UN HABITAT FOR A BETTER URBAN FUTURE ADAPTATION FUND

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B. Kangyay (1701007)
Xaysetha District, Attapeu

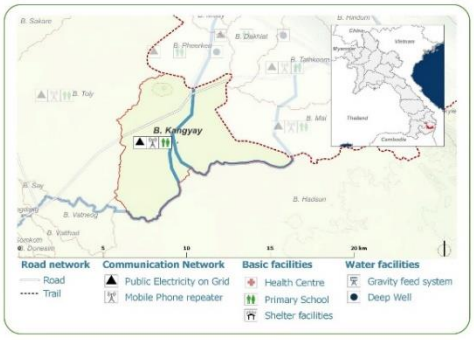
DEMOGRAPHICS

Population (2017):
1742

Main ethnic group:
Cheng

Other ethnic group:
Lao

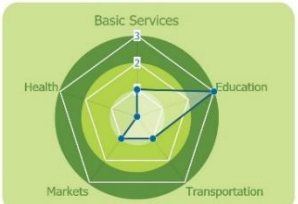
Religion:
Buddhism, Animism



Ecosystem & Services:
- **None**

Sources of Income:
- **Agriculture**
- **Subsistence agriculture**
- **Livestock**
- **Casual labor**

Education:
- **Kindergarten**
- **Primary**
- **High school**



HEALTH

Water-bourne:
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Malaria

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years

1 every 10 years
Houses
livelihoods
Health
Less severe

1 every 10 years
Water
Food
Crops
Less severe

1 every 3-5 years
Homes
Infrastructure
More frequent

No Landslides

	DRY SEASON	WET SEASON
	Significant Increase	Significant Increase
	Significant decrease	Significant decrease

IMPACTS:
Health / Water / Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

+ Industrial develop (+)

- Less food sources (-)

Hydropower impacts

No positive impact

- Water availability (-)

Mining impacts

No mining activity

VULNERABILITY INDEX

Hazard Intensity: 2.13

Sensitivity: 2.67

Ranking: 5.69

PRIORITIES & NEEDS

1. Construct water facility (gravity fed)
2. Build latrine (Sanitation)
3. Improve water quality

UN HABITAT FOR A BETTER URBAN FUTURE ADAPTATION FUND

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B. Hadsun (1701011)
Xaysetha District, Attapeu

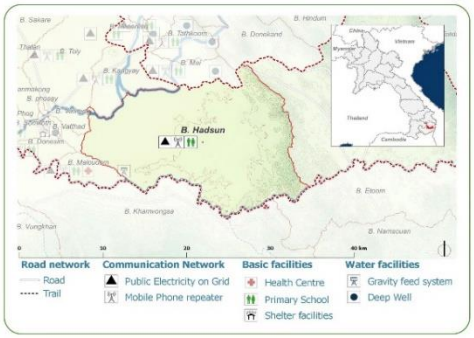
DEMOGRAPHICS

Population (2017):
1832

Main ethnic group:
Brao

Other ethnic group:
Lao

Religion:
Buddhism



Ecosystem & Services:
- **None**

Sources of Income:
- **Subsistence agriculture**
- **Livestock**
- **NTFP**

Education:
- **Primary**

HEALTH

Water-bourne:
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Encephalitis
Malaria

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years

1 every 10 years
Houses
livelihoods
Health
Less severe

1 every 10 years
Water
Food
Crops
Less severe

1 every 3-5 years
Homes
More frequent

No Landslides

DRY SEASON	WET SEASON
Significant Increase	Significant Increase
Significant decrease	Significant decrease

IMPACTS:
Health / Water / Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

+ Industrial develop (+)

- Loss of biodiversity (-)
- Less food sources (-)

Hydropower impacts

No positive impact

- Water availability (-)

Mining impacts

No positive impact

- Water contamination(-)

VULNERABILITY INDEX

Hazard Intensity: 2.13

Sensitivity: 3.23

Ranking: 6.9

PRIORITIES & NEEDS

1. Construct water facility (gravity fed)
2. Build latrine (Sanitation)
3. Plant trees

B. Thalan (1701018)
Xaysetha District, Attapeu

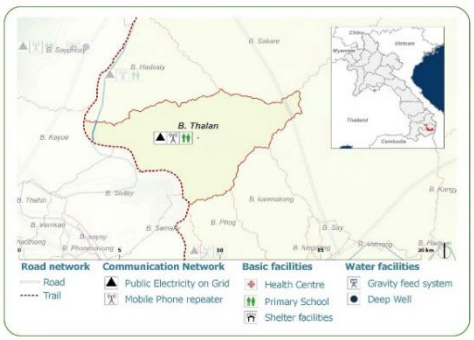
DEMOGRAPHICS

Population (2017):
1181

Main ethnic group:
Cheng

Other ethnic group:
None

Religion:
Buddhism



Ecosystem & Services:
- **None**

Sources of Income:
- **Agriculture**
- **Subsistence agriculture**
- **Livestock**

Education:
- **Primary**
- **High school**

HEALTH

Water-bourne:
Diarrhea
Eye
Skin

Vector-bourne:
Dengue
Malaria

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years

1 every 10 years
Houses
livelihoods
Health
Less severe

1 every 10 years
Water
Crops
Less severe

1 every 3-5 years
Homes
Infrastructure
Not changing

No Landslides

DRY SEASON	WET SEASON
Significant Increase	Significant Increase
Some decrease	Some decrease

IMPACTS:
Health / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

+ Industrial develop (+)

- Less food sources (-)

Hydropower impacts

No hydropower dam

Mining impacts

No mining activity

VULNERABILITY INDEX

Hazard Intensity: 1.93

Sensitivity: 3.13

Ranking: 6.06

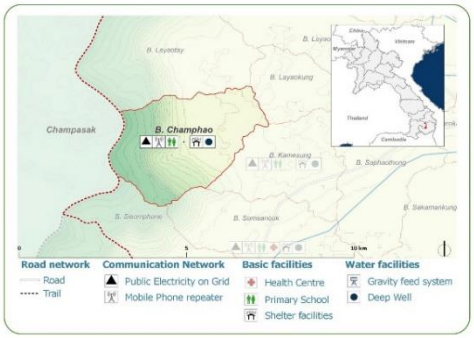
PRIORITIES & NEEDS

1. Construct water facility (borehole)
2. Build latrine (Sanitation)
3. Village drug kit

B. Champhao (1702018)
Samakkhixay District, Attapeu

DEMOGRAPHICS

Population (2017):
968
Main ethnic group:
Oy
Other ethnic group:
Lao, Khmu
Religion:
Animism



Ecosystem & Services:
- **Rice**
- **Livestock**
- **River**

Sources of Income:
- **Subsistence agriculture**
- **Livestock**
- **Casual labor**

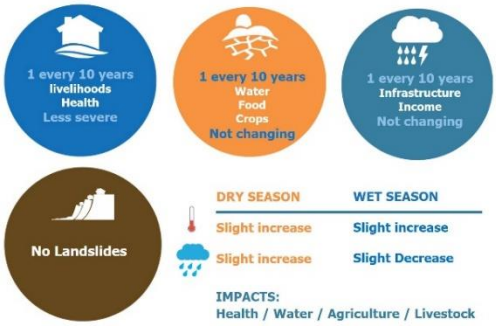
Education:
- **Primary**

HEALTH

Water-bourne:	Vector-bourne:
Allergies	**Dengue**
Diarrhea	**Encephalitis**
Eye	**Malaria**
Skin	**Scrub typhus**

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years



DRY SEASON	WET SEASON
Slight increase	Slight increase
Slight increase	Slight Decrease

IMPACTS:
Health / Water / Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

No positive impact

- Loss of biodiversity (-)
- Less food sources (-)

Hydropower impacts

No positive impact

- Water availability (-)

Mining impacts

No mining activity

VULNERABILITY INDEX

Hazard Intensity: 0.97
Sensitivity: 3.53
Ranking: 3.42

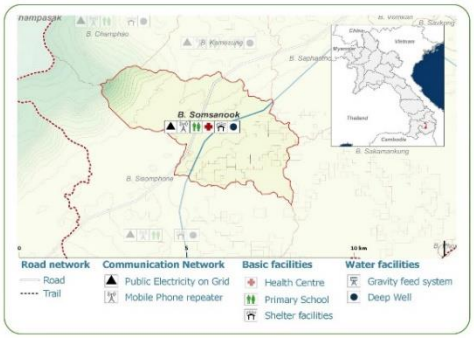
PRIORITIES & NEEDS

1. Construct water facility (borehole/gravity fed)

B. Home (1702020)
Samakkhixay District, Attapeu

DEMOGRAPHICS

Population (2017):
949
Main ethnic group:
Oy
Other ethnic group:
Brao, Lao
Religion:
Buddhism



Ecosystem & Services:
- **Rice**
- **Livestock**
- **Stream**
- **River**

Sources of Income:
- **Agriculture**
- **Subsistence agriculture**
- **Livestock**
- **Casual labor**

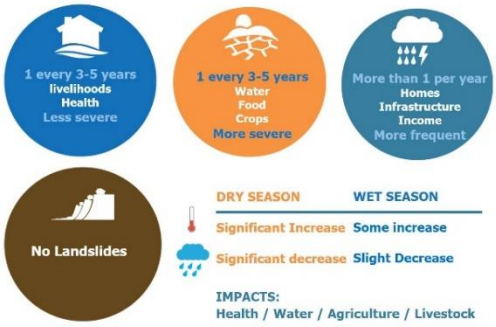
Education:
- **Primary incomplete**
- **Primary**
- **High school**

HEALTH

Water-bourne:	Vector-bourne:
Allergies	**Dengue**
Diarrhea	**Encephalitis**
Eye	**Malaria**
Skin	
Scrub typhus	

CLIMATE CHANGE & DISASTERS

Changes over the past 30 years



DRY SEASON	WET SEASON
Significant Increase	Some increase
Significant decrease	Slight Decrease

IMPACTS:
Health / Water / Agriculture / Livestock

ENVIRONMENTAL ISSUES

Deforestation impacts

No positive impact

- Loss of biodiversity (-)
- Erosion (-)
- Less food sources (-)

Hydropower impacts

No positive impact

- Water availability (-)

Mining impacts

No mining activity

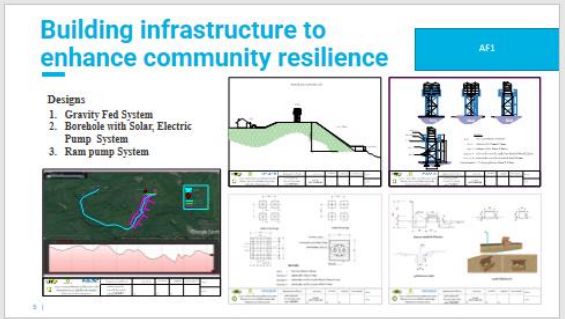
VULNERABILITY INDEX

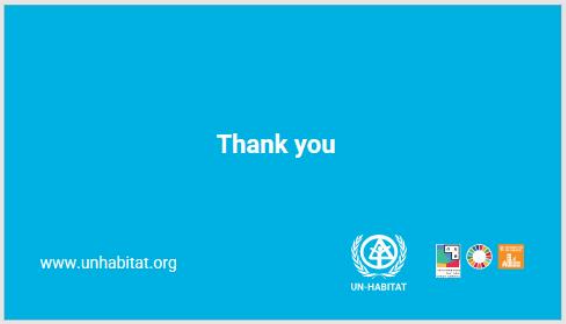
Hazard Intensity: 3.53
Sensitivity: 2.53
Ranking: 8.95

PRIORITIES & NEEDS

1. Construct water facility (borehole)

Annex 9: Completion Report Presentation Materials





ການພັດທະນາລະບົບພື້ນຖານໂຄງລ່າງ ໃຫ້ທົນທານກັບການປັບຕົວເຂົ້າກັບດິນຟ້າອາກາດ ແລະ ໄພພິບັດ ທີ່ມີຄວາມສ່ຽງຫລາຍທີ່ສຸດ ໃນທີ່ບຖານຊົນນະບົດ ແລະ ຕົວເມືອງຂອງ ສປປ ລາວ

ອົງການສັນຍາຮ່ວມມື ລະຫວ່າງ UN-HABITAT ແລະ NPSE-ATTAPEU AOC17-006

ລາຍງານສົ່ງສຳເລັດການກໍ່ສ້າງ 66 ບ້ານ ຂອງແຂວງ ອັດຕະປື

1

- **ຄຳນຳ**

ໂຄງການ AF1 ໄດ້ສະໜັບສະໜູນການພັດທະນາລະບົບໂຄງລ່າງ ສຳລັບການສະໜອງນ້ຳໃຫ້ພຽງພໍ ແລະມີຄວາມຍືນຍົງເພື່ອຕອບສະໜອງກັບຄວາມຮຽກຮ້ອງຕ້ອງການຂອງປະຊາຊົນບ້ານ ແລະ ເມືອງເປົ້າໝາຍ ພາຍໃນແຂວງອັດຕະປື. ທັງເປັນການປັບຕົວເຂົ້າກັບສະພາບອາກາດ ແລະ ໄພພິບັດ ທີ່ມີຄວາມສ່ຽງຫລາຍທີ່ສຸດ ໃນເຂດຊົນນະບົດ ແລະ ຕົວເມືອງຂອງສາມແຂວງພາກໃຕ້ (ອັດຕະປື, ສາລະວັນ ແລະ ເຊກອງ). ໂຄງການດັ່ງກ່າວ, ໄດ້ຮັບທຶນສະໜັບສະໜູນ ຈາກກອງທຶນການປັບຕົວເຂົ້າກັບສະພາບການປ່ຽນແປງດິນຟ້າອາກາດເຊິ່ງຈັດຕັ້ງປະຕິບັດໂດຍອົງການສະຫະປະຊາຊາດດ້ານເຄຫາສະຖານ (UN-Habitat) ແລະ ໄດ້ຮັບການຊີ້ນຳຈາກກະຊວງໂຍທາທິການ ແລະ ຂົນສົ່ງ ແລະ ອົງການປົກຄອງທ້ອງຖິ່ນ (ແຂວງອັດຕະປື, ສາລະວັນ ແລະ ເຊກອງ) ຢູ່ພາຍໃນ 8 ເມືອງເປົ້າໝາຍ, ຈຳນວນ 189 ບ້ານ ພາຍໃນ 3 ແຂວງດັ່ງກ່າວ.

- **ຈຸດປະສົງ**

ເພື່ອປະເມີນຜົນວຽກງານທີ່ໄດ້ຈັດຕັ້ງປະຕິບັດສຳເລັດແລ້ວໃນໄລຍະຜ່ານມາຈຳນວນ 66 ໜູ່ບ້ານເປົ້າໝາຍພາຍໃນແຂວງອັດຕະປື,(ໂຄງການທົດລອງ 8 ບ້ານ) ເພື່ອແຈ້ງໃຫ້ທຸກພາກ ສ່ວນທີ່ກ່ຽວຂ້ອງຮັບຊາບຢ່າງເປັນທາງການກ່ຽວກັບຜົນສຳເລັດຂອງໂຄງການ ພ້ອມທັງ ປຶກສາຫາລື ແລະ ຖອດຖອນບົດຮຽນ,ໂອກາດ ແລະ ຄວາມເປັນຮ່ວງໃນການຈັດຕັ້ງປະຕິບັດໂຄງການ.

2

ສາລະບານ

I. ສັນຍາຮ່ວມມື ລະຫວ່າງ **UN-Habitat** ແລະ **NPSE-ATTAPEU**

1. ອົງປະກອບຂອງສັນຍາ

1.1 ສັນຍາ ມີ 3 ອົງປະກອບ.

II. ສັງລວມບ້ານເປົ້າໝາຍການກໍ່ສ້າງນ້ຳປະປາຊຸມຊົນ ຢູ່ ແຂວງອັດຕະປື

2.1 **ເມືອງ:ສາມັກຄີໄຊ**. ໄດ້ຮັບທຶນກໍ່ສ້າງ 10 ບ້ານ

2.2 ເມືອງພູວົງ.ໄດ້ຮັບທຶນກໍ່ສ້າງ 8 ບ້ານ

2.3 ເມືອງໄຊເສດຖາ.ໄດ້ຮັບທຶນກໍ່ສ້າງ 15 ບ້ານ,

2.4 ເມືອງຊານໄຊ.ໄດ້ຮັບທຶນກໍ່ສ້າງ 33 ບ້ານ,

3

I . ສັນຍາຮ່ວມມື ລະຫວ່າງ **UN-Habitat** ແລະ **NPSE-ATTAPEU**

UN-Habitat/Adaptation Fund

ໄລຍະສັນຍາ: 12 ເດືອນ

1. ອົງປະກອບຂອງສັນຍາ

1.1 ສັນຍາ ມີ 3 ອົງປະກອບດັ່ງນີ້:

- **June 2019 – May 2020 : 12** ເດືອນ ແລະ 3 ອົງປະກອບ

A. [illegible]

B. [illegible] **66** ບ້ານ

C. [illegible]

4

II. ສັງລວມບ້ານເປົ້າໝາຍການປັບປຸງນ້ຳປະປາຊຸມຊົນ ຢູ່ ແຂວງອັດຕະປື

ແຂວງ	ເມືອງ	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ອັດຕະປື	ພູວົງ	[illegible]	[illegible]	8	8	0
ອັດຕະປື	ສາມັກຄີໄຊ	[illegible]	[illegible]	10	10	0
ອັດຕະປື	ໄຊເສດຖາ	[illegible]	[illegible]	15	15	0
ອັດຕະປື	ຊານໄຊ	[illegible]	[illegible]	33	33	0
ລວມ				66	66	0

5

ສັງລວມການປັບປຸງກໍ່ສ້າງ 4 ເມືອງ ຂອງແຂວງ ອັດຕະປື

ລ/ດ	ເມືອງ	ຈຳນວນບ້ານ	ກໍ່ສ້າງແລ້ວ	ກຳລັງກໍ່ສ້າງ	ຍັງບໍ່ທັນກໍ່ສ້າງ	ວຽກທີ່ປະຕິບັດໄດ້ຄິດໄລ່ເປັນ%
I	ເມືອງສາມັກຄີໄຊ	10	10	0	0	100
II	ເມືອງພູວົງ	8	8	0	0	100
III	ເມືອງໄຊເສດຖາ	15	15	0	0	100
IV	ເມືອງຊານໄຊ	33	33	0	0	100
	ລວມ	66	66	0	0	100%

6

ງົບປະມານການກໍ່ສ້າງ

7

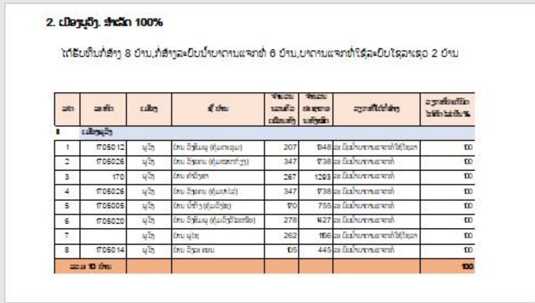
1. ເມືອງສາມັກຄີໄຊ. ສຳເລັດ 100%

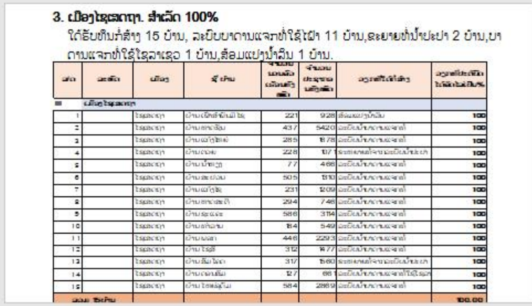
ໄດ້ຮັບທຶນກໍ່ສ້າງ 10 ບ້ານ,ກໍ່ສ້າງລະບົບນ້ຳບາດານແຈກຢາຍຕິດຕັ້ງກົງເຕີ 9 ບ້ານ,ສ້ອມແປງນ້ຳລິນ 1 ບ້ານ.

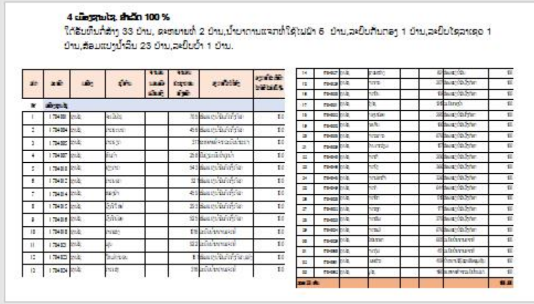
ລ/ດ	[illegible]	ເມືອງ	ຊື່ບ້ານ	[illegible]	[illegible]	[illegible]	[illegible]
I	ເມືອງສາມັກຄີໄຊ						
1	1702036	[illegible]	[illegible]	150	827	[illegible]	100
2	1702038	[illegible]	[illegible]	305	1708	[illegible]	100
3	1702039	[illegible]	[illegible]	183	917	[illegible]	100
4	170218	[illegible]	[illegible]	130	836	[illegible]	100
5	1702019	[illegible]	[illegible]	146	752	[illegible]	100
6	3233820	[illegible]	[illegible]	169	860	[illegible]	100
7	4765621	[illegible]	[illegible]	328	1683	[illegible]	100
8	1702035	[illegible]	[illegible]	126	552	[illegible]	100
9	1702037	[illegible]	[illegible]	138	755	[illegible]	100
10	1702043	[illegible]	[illegible]	470	2480	[illegible]	100
ລວມ 10 ບ້ານ							100

8

9







ຂໍ້ສະດວກ

ໄດ້ຮັບການຊ່ວຍເຫຼືອຈາກອົງການ UN-habitat ເພື່ອປັບປຸງຊີວິດການເປັນຢູ່ຂອງປະຊາຊົນໃຫ້ດີຂຶ້ນ.

ອົງການປົກຄອງທ້ອງຖິ່ນຂັ້ນແຂວງ,ຂັ້ນເມືອງ ແລະ ຂັ້ນບ້ານໄດ້ໃຫ້ການຮ່ວມມືເປັນຢ່າງດີ.

ພໍ່ແມ່ປະຊາຊົນຢູ່ບ້ານ ຜູ້ທີ່ໄດ້ຮັບຜົນປະໂຫຍດຈາກໂຄງການກໍ່ໄດ້ທຸ້ມເທສົມທົບແຮງງານເຂົ້າໃສ່ໂຄງການ, ເຮັດໃຫ້ໂຄງ ການສຳເລັດເປັນກ້າວໆມາ.

ລະບົບການຊີ້ນຳການລາຍງານ ແລະ ແກ້ໄຂບັນຫາຕ່າງໆຢູ່ຂັ້ນບ້ານ ກໍ່ໄດ້ຮັບການປັບປຸງວ່ອງໄວດີຂຶ້ນ.

16

ຂໍ້ຫຍຸ້ງຍາກ

ສະຖານທີ່ກໍ່ສ້າງສ່ວນຫຼາຍເປັນເຂດພູດອຍ, ເປັນໃນພູສູງ,ລະບົບເສັ້ນທາງຄົມມະນາຄົມກໍ່ບໍ່ດີ ເຮັດໃຫ້ມີຄວາມຫຍຸ້ງຍາກໃນການໄປ-ມາ.

ການກໍ່ສ້າງກໍ່ຖືກຊ້ອງລະດູຝົນ ແລະ ລະດູການຜະລິດ,ປະຊາຊົນໃຫ້ການສົມທົບອອກແຮງງານຊັກຊ້າ ເຮັດໃຫ້ການດຳເນີນງານບໍ່ໄດ້ຕາມແຜນການ.

- ພະຍາດໂຄວິດ 19 ມີການລະບາດ,ເຮັດໃຫ້ມີການປິດແຂວງ,ປິດເມືອງ ແລະ ບ້ານ,ບໍ່ໃຫ້ມີການເຄື່ອນໄຫວ,ການຈັດຕັ້ງປະຕິບັດວຽກກໍ່ໄດ້ມີການຢຸດຕີ.

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ຂໍຂອບໃຈ

18


ລາຍງານການກໍ່ສ້າງພື້ນຖານໂຄງລ່າງລະບົບ
ນ້ຳ 61 ບ້ານ
(31 ບ້ານ ມ.ຕະໂອ້ຍ ແລະ 30 ບ້ານ ມ.ສະໝ້ວຍ ຂ.ສາລະວັນ)
Mail: tsonexay2013@gmail.con
Mobile: 02055648307
UN-HABITAT

1

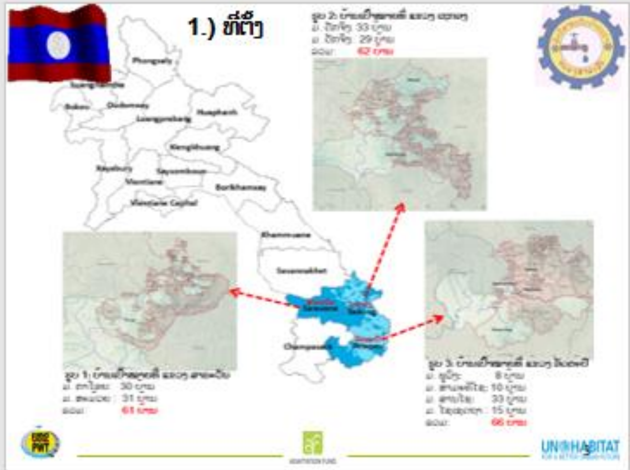

ເນື້ອໃນນຳສະເໜີ
1. ທີ່ຕັ້ງ
2. ສະພາບລວມ
3. ຈຸດປະສົງ
4. ກອງປະຊຸມເລີ່ມໂຄງການ ແລະ ສຳຫຼວດອອກແບບ(A1-A2)
5. ເອກະສານການຈັດຈ້າງຈັດຊື້
6. ການກໍ່ສ້າງປັບປຸງພື້ນຖານໂຄງລ່າງລະບົບນ້ຳ 2019-2023(B1-B5)
7. ກອງປະຊຸມຖອດຖອນບົດຮຽນ C1
UN-HABITAT

2

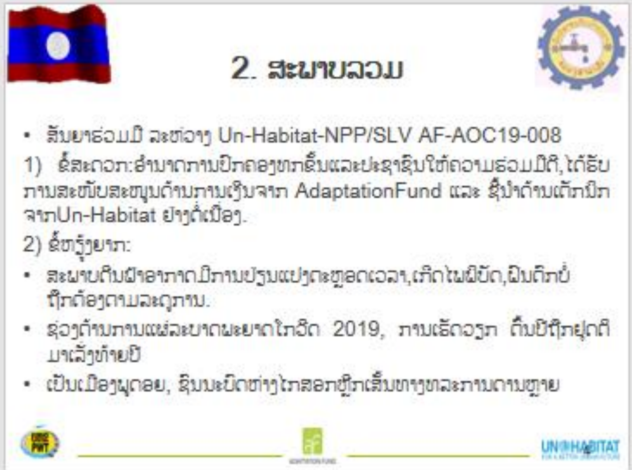
5


3.) ຈຸດປະສົງ:
ກໍ່ສ້າງປັບປຸງພື້ນຖານໂຄງລ່າງລະບົບນ້ຳ(ອ່າງຕອງ,ອ່າງເກັບ,ທໍ່ແຈກ ແລະ ຕິດຕັ້ງກ໊ອກນ້ຳໃຫ້ປະຊາຊົນຍາກຈົນ 3,910 ກ່ວາຄົວເຮືອນ ໄດ້ຊົມໃຊ້ນ້ຳທີ່ສະດວກ ແລະ ສະອາດ
ແຂວງ | ເມືອງ | ຈຳນວນ ບ້ານເປົ້າໝາຍ | ຈຳນວນ ປະຊາກອນ | ຈຳນວນ ຄົວເຮືອນ
ສາລະວັນ | ສະມ້ວຍ | 30 | 7,653 | 1,358
ສາລະວັນ | ຕາໂອຍ | 31 | 15,943 | 2,552
ລວມ | 61 | 23,601 | 3,910
UN-HABITAT

6


1.) ທີ່ຕັ້ງ

3


2. ສະພາບລວມ
• ສັນຍາຮ່ວມມື ລະຫວ່າງ Un-Habitat-NPP/SLV AF-AOC19-008
1) ຂໍ້ສະດວກ: ອຳນາດການປົກຄອງທ້ອງຖິ່ນແລະປະຊາຊົນໃຫ້ຄວາມຮ່ວມມືດີ, ໄດ້ຮັບການສະໜັບສະໜູນດ້ານການເງິນຈາກ AdaptationFund ແລະ ຊີ້ນຳດ້ານເຕັກນິກຈາກUn-Habitat ຢ່າງຕໍ່ເນື່ອງ.
2) ຂໍ້ຫຍຸ້ງຍາກ:
• ສະພາບດິນຟ້າອາກາດມີການປ່ຽນແປງຕະຫຼອດເວລາ, ເກີດໄພພິບັດ, ຝົນຕົກບໍ່ຖືກຕ້ອງຕາມລະດູການ.
• ຊ່ວງດ້ານການແຜ່ລະບາດພະຍາດໂກວິດ 2019, ການເຮັດວຽກ ຕົ້ນປີຖືກຢຸດຕິມາເລັ່ງທ້າຍປີ
• ເປັນເມືອງພູດອຍ, ຊົນນະບົດຫ່າງໄກສອກຫຼີກເສັ້ນທາງຫລະການຄານຫຼາຍ
UN-HABITAT

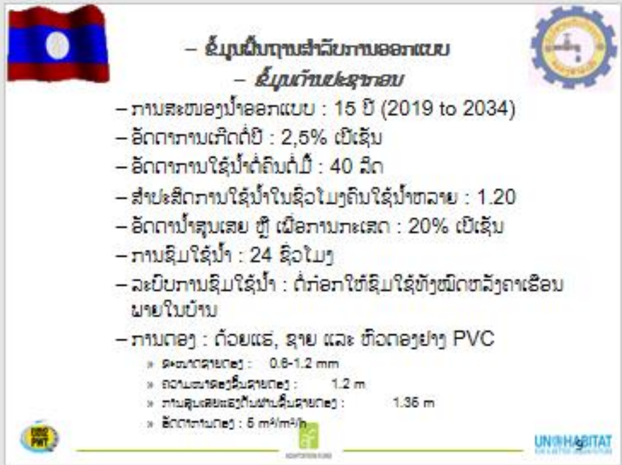
4

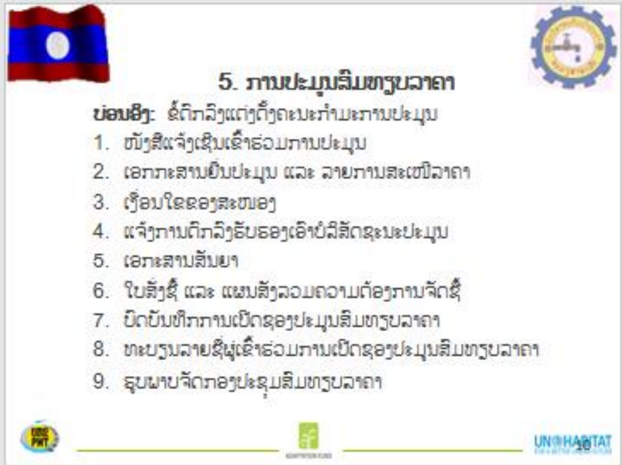

4.ກອງປະຊຸມເລີ່ມໂຄງການ
ແລະການສຳຫຼວດອອກແບບ
UN-HABITAT
1) ໜ້າທີ່ຂອງແຕ່ລະອົງການແລະ ການມີສ່ວນ
2) ການສຳຫຼວດ ອອກແບບ
3) ຜ່ານແຜນບັນດາບ້ານທີ່ຄັດເລືອກການກໍ່ສ້າງປັບປຸງ ພື້ນຖານໂຄງລ່າງລະບົບນ້ຳ 61 ບ້ານ
UN-HABITAT

7

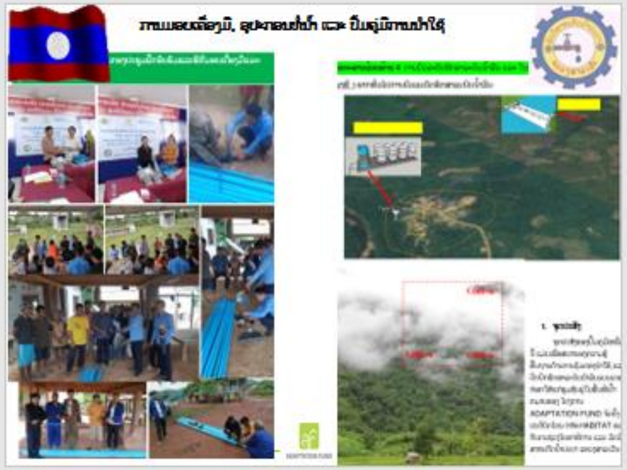

UN-HABITAT

8


– ຂໍ້ມູນພື້ນຖານສຳລັບການອອກແບບ
– ຂໍ້ມູນບ້ານປະຊາກອນ
– ການສະໜອງນ້ຳອອກແບບ : 15 ປີ (2019 to 2034)
– ອັດຕາການເກີດຕໍ່ປີ : 2,5% ເປີເຊັນ
– ອັດຕາການໃຊ້ນ້ຳຕໍ່ຄົນຕໍ່ມື້ : 40 ລິດ
– ສໍາປະສິດການໃຊ້ນ້ຳໃນຊົ່ວໂມງຄົນໃຊ້ນ້ຳຫລາຍ : 1.20
– ອັດຕານ້ຳສູນເສຍ ຫຼື ເພື່ອການກະເສດ : 20% ເປີເຊັນ
– ການຊົມໃຊ້ນ້ຳ : 24 ຊົ່ວໂມງ
– ລະບົບການຊົມໃຊ້ນ້ຳ : ຕໍ່ທໍ່ອກໃຫ້ຊົມໃຊ້ທັງໝົດຫລັງຄາເຮືອນ ພາຍໃນບ້ານ
– ການຕອງ : ດ້ວຍແຮ່, ຊາຍ ແລະ ທໍ່ວຕອງຢາງ PVC
0.6-1.2 mm
1.2 m
1.36 m
UN-HABITAT
9


5. ການປະມູນສົມທຽບລາຄາ
ບ່ອນອີງ: ຂໍ້ຕົກລົງແຕ່ງຕັ້ງຄະນະກຳມະການປະມູນ
1. ໜັງສືແຈ້ງເຊີນເຂົ້າຮ່ວມການປະມູນ
2. ເອກະສານຍື່ນປະມູນ ແລະ ລາຍການສະເໜີລາຄາ
3. ເງື່ອນໄຂຂອງສະໜອງ
4. ແຈ້ງການຕົກລົງຮັບຮອງເອົາບໍລິສັດຊະນະປະມູນ
5. ເອກະສານສັນຍາ
6. ໃບສັ່ງຊື້ ແລະ ແຜນສັງລວມຄວາມຕ້ອງການຈັດຊື້
7. ບົດບັນທຶກການເປີດຊອງປະມູນສົມທຽບລາຄາ
8. ທະບຽນລາຍຊື່ຜູ້ເຂົ້າຮ່ວມການເປີດຊອງປະມູນສົມທຽບລາຄາ
9. ຮູບພາບຈັດກອງປະຊຸມສົມທຽບລາຄາ
UN-HABITAT
10


UN-HABITAT
13


14


UN-HABITAT

11


6. ຈຳນວນບ້ານກໍ່ສ້າງ-ປັບປຸງ ພື້ນຖານໂຄງລ່າງລະບົບນ້ຳ
UN-HABITAT

12

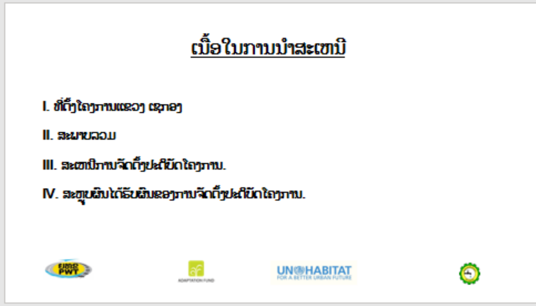

RAM PUMP
UN-HABITAT

15

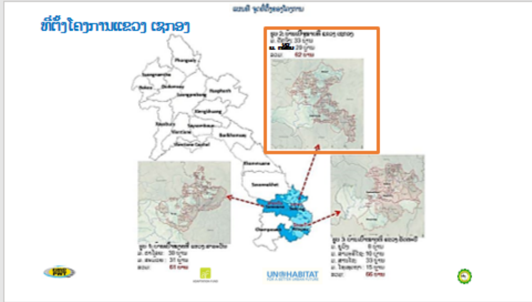

7. ກອງປະຊຸມຖອດຖອນບົດຮຽນໄລຍະສຸດທ້າຍຂອງໂຄງການ
UN-HABITAT

16

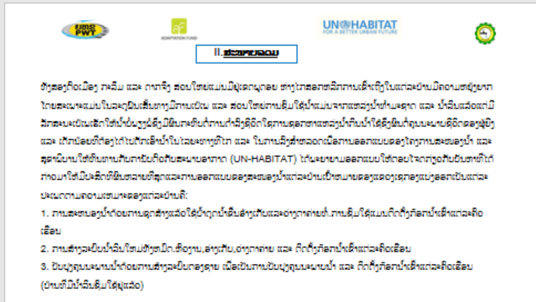
1



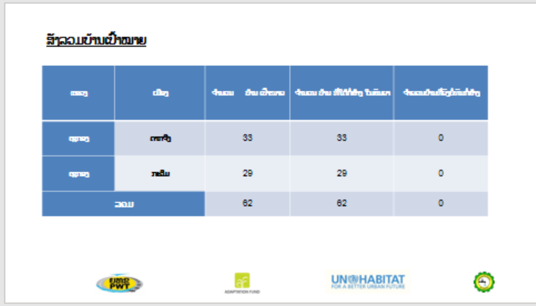
2



3



4



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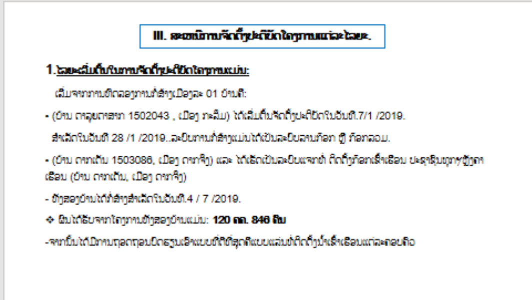

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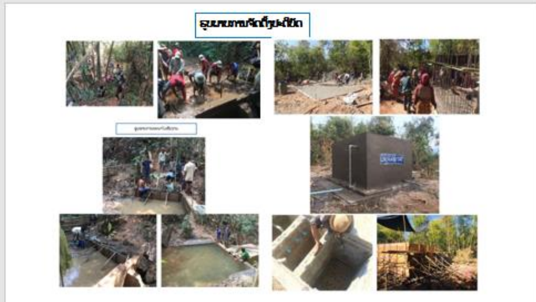
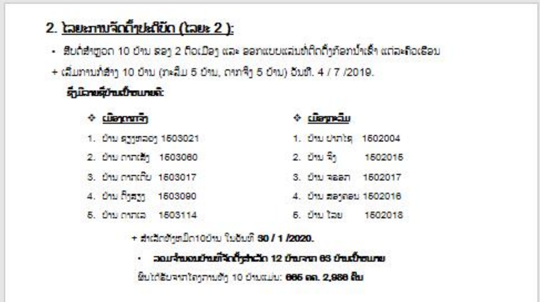
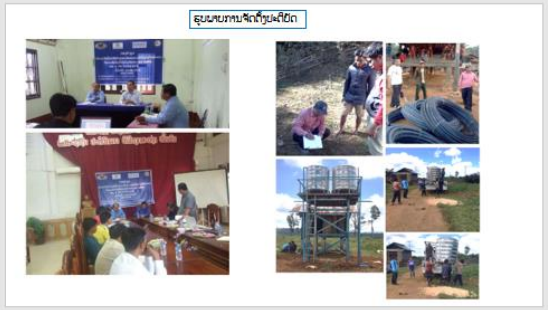


7

8

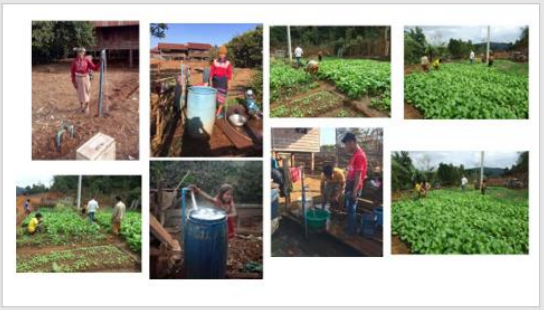


9

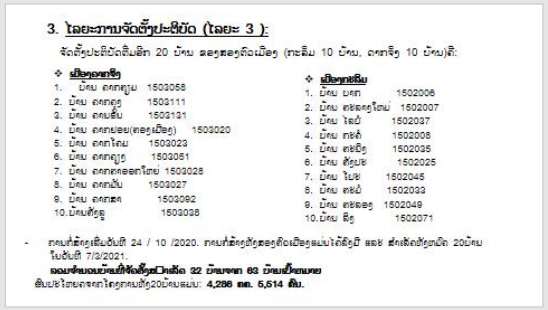


10

11



12



13

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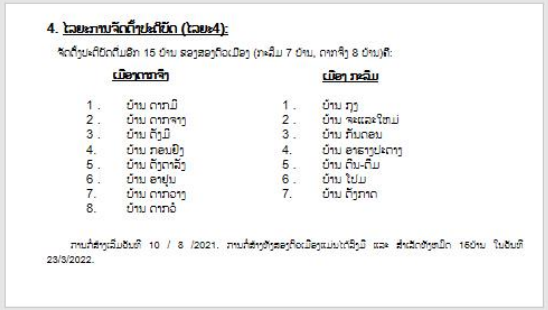

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5. ໄລຍະການຈັດຕັ້ງປະຕິບັດ(ໄລຍະ5):

ຈັດຕັ້ງປະຕິບັດໃນ 15 ບ້ານ ຂອງສອງເມືອງ (ທ່າແຂ ມ 6 ບ້ານ, ຄຳມ່ວ ນ 9 ບ້ານ)ຄື:

ເມືອງທ່າແຂ ກ	ເມືອງ ຄຳມ ວ
1. ບ້ານ ນ ອງໃຫ ມ 1603001	1. ບ້ານ ແກ ງກຸ ມ 1602002
2. ບ້ານ ນ ອງບ ວ 1603002	2. ບ້ານ ຕົ ງແຄ ນ 1602003
3. ບ້ານ ດ ານ ານ ີ 1603003	3. ບ້ານ ຫ ານ ອງ 1602013
4. ບ້ານ ດ ານ ເຂ ົ້ 1603033	4. ບ້ານ ກ ຸ ງ 1602026
5.ບ້ານ ດ ານ ອ ານໃຫ ມ 1603034	5. ບ້ານ ຕົ ງ ນ ໍ 1602076
6. ບ້ານ ກ ຸ ງໃ ນ ອ 1603036	6. ບ້ານ ນ ານ ານ 1602082
7. ບ້ານ ດ ານ ນ ອ 1603044	
8. ບ້ານ ດ ານ ເ ີ ນ 1603124	
9. ບ້ານ ດ ານ ານ ໍ ້ 1603132	

- ດ ານ ໍ ້ ສ ັ ກ ຸ ້ ຜ ູ ້ ຮ ັ ບ ຜ ົ ນ ຂ ອ ງ ຕ ົ ວ ເ ມ ື ອ ງ ແ ລ ະ ບ ໍ ່ ໄ ດ ້ ຢ ູ ່ ໃ ນ ບ ັ ນ ຊ ີ ຂ ອ ງ ໂ ຄ ງ ກ ານ ແ ລ ະ ສ ໍ ້ າ ງ ຕ ົ ວ ເ ມ ື ອ ງ ຂ ຶ ້ ນ ໃ ໝ ່ ທ ົ ດ ແ ທ ນ ຈ ໍ ານ ວ ນ 15 ບ ້ ານ ໃ ນ ເ ດ ື ອ ນ ມ ິ ຖ ຸ ນ າ/2023.

ຍ ອ ດ ເ ງ ິ ນ ທ ີ ່ ຈ ະ ຈ ່ າ ຍ ຈ າ ກ ໂ ຄ ງ ກ ານ ທ ັ ້ ງ 15 ບ ້ ານ ລ ວ ມ : **1,073 ຕ ນ. 6,799 ຕ ນ.**

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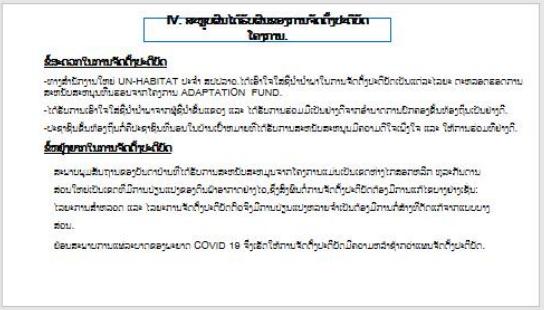

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Annex 10: Photos of Field Visits to the Project Villages















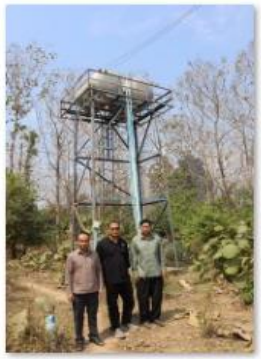





























































Annex 11: List of Climate Change Adaptation Projects in Lao PDR

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

Name/Responsible/ Institution/Donor/Budget	Main objectives	Key project components and activities
- **Executing entity:** Department of Climate Change, Ministry of Natural Resources (MONRE); - **Implementing entity**: UN-Habitat - **Duration**: 36 months (under finalisation) - **Budget:** US$1,998,869 - **Donor**: Green Climate Fund (GCF) - **Status**: In-coming		National Socio-economic Development Plan (2016-2020) and other national strategy documents; 4. Facilitating the integration of climate change adaptation into relevant new and existing policies, programs and activities, and strategies within all relevant sectors; 5. Integrating adaptation-planning activities into specific or broader resilience planning to increase awareness and information on climate change adaptation across government actors.
- **Project title:** Support for Mainstreaming Climate Change Adaptation into Sectoral Planning in Lao PDR; - **Executing entity:** Department of Climate Change, Ministry of Natural Resources and Environment (MONRE); - **Implementing entity**: Global Green Growth Institute (GGGI) - **Duration**: 24 months (under finalization) - **Budget:** US$1,000,000 - **Donor**: Green Climate Fund (GCF) - **Status**: On-going	The program aims to enhance Lao PDR's climate resiliency through the integration of adaptation at the sector level	This program would significantly contribute to NAP process through key activities including identifying, designing and implementing adaptation investments in line with national priorities as knowledge on key vulnerabilities will be generated and coordination mechanism will be established for an effective action planning and implementation for resilience.
- **Project title:** Building Resilience of Urban Populations with Ecosystem-based Solutions in Lao PDR; - **Executing entity:** Department of Climate Change, Ministry of Natural Resources and Environment (MONRE);	The project objective is to implement an integrated approach to flood management to build the climate resilience of local communities living in four major cities in Laos, namely Vientiane, Paksan, Savannakhet and Pakse.	The project includes three main components: 1. strengthening technical capacity and knowledge management for EbA; 2. developing city-level flood management strategies; and

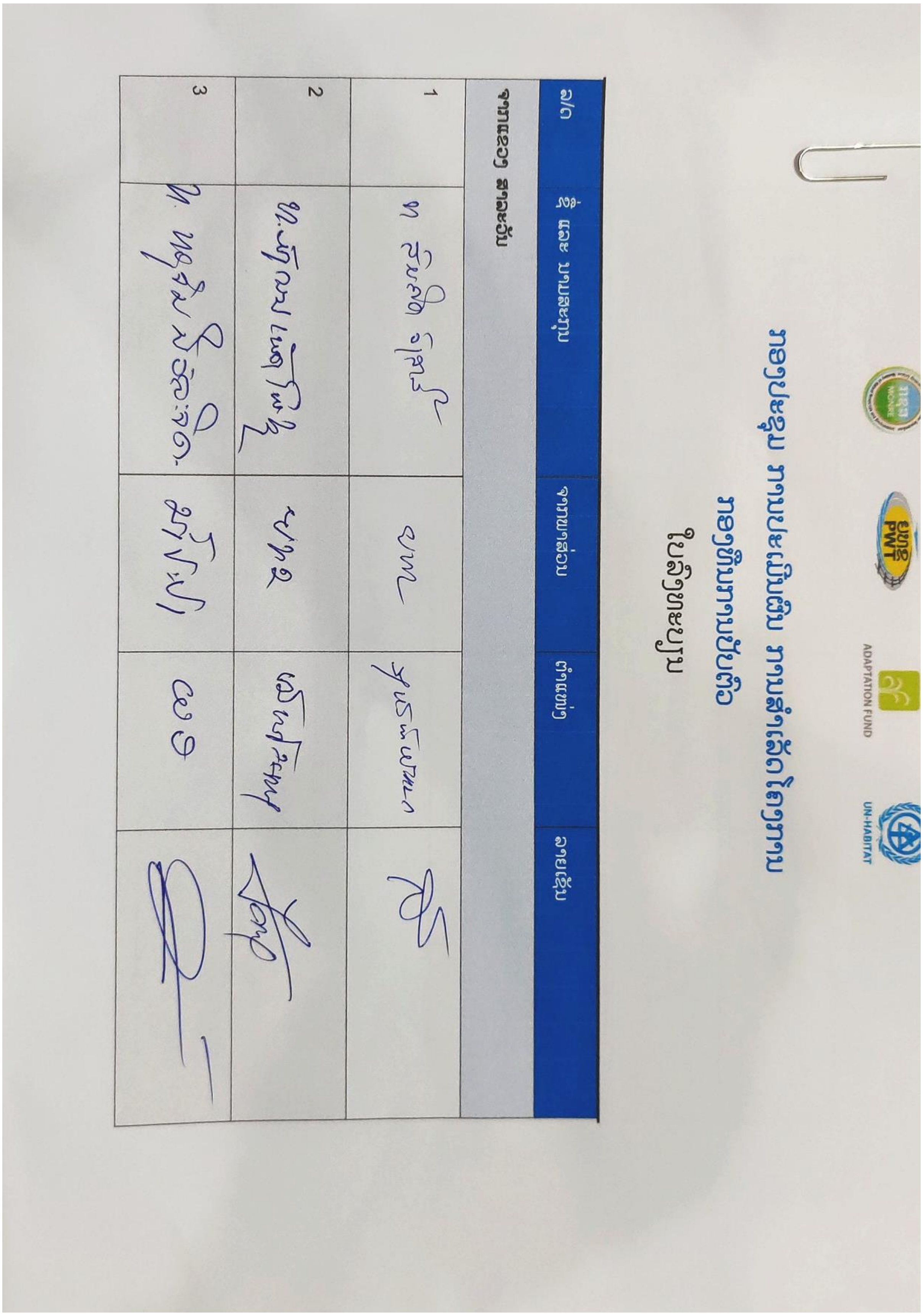
Name/Responsible/ Institution/Donor/Budget	Main objectives	Key project components and activities
- **Implementing entity**: UNEP - **Duration**: 5 years (2021-2024) - **Budget:** US$11 mil. - **Donor**: Green Climate Fund (GCF) - **Status**: On-going		3. implementing urban EbA interventions in three cities located along the Mekong River.
- **Project title:** Building Climate Resilience of Urban Systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region - **Executing entity:** Department of Climate Change, Ministry of Natural Resources and Environment (MONRE); - **Implementing entity**: UNEP - **Duration**: 48 months (2020-2023) - **Budget:** US$1,000,000 - **Donor**: GEF - **Status**: On-going	The project objective is to reduce the vulnerability of poor urban communities in Asia-Pacific LDCs to climate change impacts using Ecosystem-based Adaptation (EbA) in Oudomxay and Phongsaly Province.	The four-year project has three main components for: 1. institutional strengthening and capacity building of city management authorities in pilot cities to plan and implement urban EbA; 2. demonstrating urban EbA interventions in pilot cities; and 3. disseminating knowledge and raising public awareness on urban EbA in pilot cities.
- **Project title:** Strengthening Agro-climatic Monitoring and Information Systems (SAMIS) to Improve Adaptation to Climate Change and Food Security in Lao PDR Project - **Executing entity:** Department of Meteorology and Hydrology (DMH), MONRE and the Department of Agricultural Land Management (DALAM), MAF; - **Implementing entity**: FAO - **Duration**: 2017-2022	The project aims to address monitoring, observation, analysis, data storage, and development of value-added information products, promote sharing and better inform agricultural decision making	The project includes three components: 1. strengthening agro-climatic monitoring, analysis, communication, and use of data and information for decision making in agriculture and food security; 2. strengthening institutional and technical capacity for monitoring and analysis of agricultural production systems and development of Land Resources Information Management System; 3. knowledge management dissemination and application of information at local level

Name/Responsible/ Institution/Donor/Budget	Main objectives	Key project components and activities
- **Budget:** US$22,000,000 - **Donor**: GEF-LDCF - **Status**: On-going		including integrating lessons learned into planning
- **Project title: Change Change and Health Adaptation Plan (H-NAP)** - **Executing entity:** Department of Hygiene and Health Promotion, Ministry of Health; - **Implementing entity**: WHO - **Duration**: 2020-2023 - **Budget:** - - **Donor**: WHO - **Status**: On-going	The Health Sector is quite progressive on the climate change integration in the sectoral plan. With the support of WHO, the sector aimed to develop its own Health – National Adaptation Plan (H-NAP) which led by the MoH with WHO support, aiming to integrate into the NAP moving forward.	This project directly contributes to the NAP process for Lao PDR
- **Project title:** Integrated Water Resource Management and Ecosystem-based Adaptation (EbA) - **Executing entity:** Department of Water Resource, MONRE; - **Implementing entity**: UNDP - **Duration**: 2022-2026 - **Budget:** 6,000,000 - **Donor**: GEF - **Status**: On-going	The project was funded by GEF with an aim to promote integrated management of the wetland sites in the Mekong River Basin for increased climate resilience of Savannakhet Province and Luang Prabang communities vulnerable to floods and droughts, which are expected to worsen under future scenarios.	The project will increase the resilience of communities in two particularly vulnerable areas through: 1. Strengthened national and provincial capacities for Integrated Catchment Management and integrated urban Ecosystem-based Adaptation for climate risk reduction; and 2. The introduction of community-based water resource and ecological monitoring systems in the Xe Bang Hieng river basin.
- **Project title:** Enhancing Integrated Water Management and Climate Resilience in Vulnerable Urban Areas of the Mekong River Basin - **Executing entity:** Department of Water Resource, MONRE;	Project objective is to strengthen the climate and disaster resilience of people and communities in vulnerable regions of Lao PDR and Cambodia – Particularly for Lao PDR in two vulnerable areas of Xe Bang Fai river basin in Khammouane Province and Xe Don river basin in Champasak	There are three main components including: 1. Conducting inclusive assessment of water-related climate risks completed in the priority river basins.

Name/Responsible/ Institution/Donor/Budget	Main objectives	Key project components and activities
- **Implementing entity**: UNDP - **Duration**: 2021-2025 - **Budget:** 1,593,000 (USD) - **Donor**: Republic of Korea - **Status**: On-going	Province – through improved climate risk and vulnerability assessment and developing an integrated water resource management (IWRM) approach	2. Enhancing enabling environment for gender-responsive climate risk-informed integrated water resources management developed. 3. Developing funding proposal for priority risk reduction measures developed.
- **Project title:** Building climate and disaster resilience capacities of vulnerable small towns in Lao PDR (AF 2) - **Executing entity:** Department of Water Resource, MONRE and Department of Housing and Urban Planning, MPWT; - **Implementing entity**: UN-Habitat - **Duration**: 2020-2025 - **Budget:** 5,000,000 (USD) - **Donor**: Adaptation Fund (AF) - **Status**: On-going	The project aims to build climate resilience in small towns along the EWEC through the provision of climate resilient water infrastructure, and the mainstreaming of climate change into urban planning. A rapid vulnerability assessment has been carried out in each of the target settlements, forming the basis of an action plan. The VA will also feed into a master plan which will demonstrate how to mainstream climate action into urban planning.	Rapid vulnerability assessment conducted for development of project proposal.
- **Project title:** Enhancing adaptive capacity in Lao PDR provinces, and building resilient housing in Vulnerable communities - **Executing entity:** Department of Climate Change, MONRE and Department of Housing and Urban Planning, MPWT; - **Implementing entity**: UN-Habitat - **Duration**: 2024-2028 - **Budget:** 7,561,000 (USD) - **Donor**: Adaptation Fund (AF)	The main objective of the project is to enhance climate resilience in vulnerable, impoverished communities across six provinces in Lao PDR by improving provincial adaptation capacity and bolstering housing resilience. The project will adopt a comprehensive approach to enhance shelter and housing resilience by focusing on improving and localizing government adaptation systems, as well as fortifying houses and community evacuation centers in selected vulnerable towns. This recognizes the multifaceted nature of building resilience in the housing sector, encompassing policy, planning,	The project aims to achieve its objectives by: • Increasing the adaptive capacity of communities and provincial institutions to develop and maintain community infrastructure and housing. • Implementing adaptive measures through the construction of community infrastructure and the reconstruction and rehabilitation of houses. • Strengthening community awareness and integrating adaptation into policy through advocacy and knowledge management.

Name/Responsible/ Institution/Donor/Budget	Main objectives	Key project components and activities
- **Status**: On-going	and regulation; capacity building; enhancing construction practices; and improving early warning and evacuation systems.	
- **Project title:** Reinforcing the capacities of meteorological and hydrological services and enhancing the early warning systems in Cambodia and Lao PDR (CREWS) - **Executing entity:** Department of Meteorology and Hydrology, MONRE; - **Implementing entity**: World Meteorological Organization (WMO), World Bank (WB) , and United Nations Office for Disaster Risk Reduction (UNDRR) - **Duration**: 2021-2025 - **Budget:** 5,500,000 (USD) - **Donor**: - - **Status:** On-going	For Lao PDR, this project aims to reduce the impacts of disasters caused by hazards by promoting the use of early warning and risk information. CREWS seeks to strengthen national capacity in providing hydromet, early warning, and response services, ensuring that vulnerable populations in Lao PDR receive effective risk-informed early warning services. Regarding capacity development, the project has reportedly assisted DMH in enhancing their skills and improving the quality of hydromet forecasts, and developing early warning systems and flood forecasting models.	To achieve the overall objective, the following five major outcomes have been outlined: 1. Strengthened governance mechanism and enabling environment created for national and regional stakeholders. 2. Enhanced capacity of National Meteorological and Hydrological Services (NMHSs) to provide forecasts and warnings. 3. NMHS's information and communication technology and capacities strengthened. 4. Enhanced preparedness and response capability to act upon warning and risk information to minimize impact of disasters on lives, livelihood and socio-economic systems 5. Improved integration of gender and vulnerable groups across the Early Warning – Early Action (EW-EA) value chain

Annex 12: List of Participants for Data Collection Workshop in Salavan Province



4	ທ. ສີສະໝັດ ກິວ່ລະວົງ	ມປປ ສາລະວັນ	[illegible]	
5	ທ. [illegible] ສິດຕາະວົງ	ມປປ ສາລະວັນ	[illegible]	
ຈາກແຂວງ ອັດຕະປື				
1	ທ. ວຽງທອງ [illegible]	ຍທຂ ແຂວງ	[illegible]	
2	ນ. [illegible]	[illegible]	[illegible]	
3	ທ. [illegible]	[illegible]	[illegible]	

4	ທ. ເພົາວິຊຽນ ສີຊາມົນ	ນໍ້າປະປາ	ອຳນວຍການ.	
5				
ຈາກແຂວງ ເຊກອງ				
1	ທ. ບົວລີ ສຸຂະວົງ	ພທຊ.	ຮອງຫົວໜ້າພະແນກ.	
2	ທ. ຄູນສີ ພົມວົງ	ຍທຂ ເຊກອງ	[illegible]	
3	ນ. ສຸລະພົນ ພົນວິເສດ	ນໍ້າປະປາ	ອຳນວຍການ	
4	ທ. ສົມພັດ ສຸຣັນດາ	ນໍ້າປະປາ	[illegible]	

5	ທ. [illegible]	[illegible]	[illegible]	
ຈາກຫ້ອງການ UN-Habitat				
1	ທ່ານ ບົວໂຮມ ແສງຄຳຍອງ	UN-Habitat	ຫົວໜ້າ ຊ່ຽວຊານ	
2	ທ່ານ ເພັງພອນ ຄຳແສນສຸກ	UN-Habitat	ພັດທະນາຊຸມຊົນ	
3	ທ່ານ ພູວັນນະສິນ ພົງສາ	UN-Habitat	ຊ່ຽວຊານ ດ້ານປະເມີນໂຄງການ	

Annex 13: Completed Interview and Survey Forms

[All completed forms are attached separately]

Annex 14: List of Infrastructure Built in 189 Villages in Project Provinces

SN	Village code	Province	District	Village name	opulation/Y	opulation/202	Geolocation	
1	1402002	Saravane	Ta oi District	B. Talunglalao	827	827	16.079338	106.619672
2	1402004	Saravane	Ta oi District	B. Laxaeng	724	724	16.06206	106.639709
3	1402005	Saravane	Ta oi District	B. Lakhab	531	531	16.299452	106.660002
4	1402006	Saravane	Ta oi District	B. Paseer	481	481	16.258711	106.672915
5	1402007	Saravane	Ta oi District	B. Pachoudone	854	939	16.266175	106.707049
6	1402011	Saravane	Ta oi District	B. Chohai	575	575	16.258781	106.767037
7	1402012	Saravane	Ta oi District	B. Tungkorng	983	983	16.251852	106.77871
8	1402013	Saravane	Ta oi District	B. Piko	763	763	16.244212	106.798749
9	1402014	Saravane	Ta oi District	B. Adone	691	691	16.23813	106.847632
10	1402016	Saravane	Ta oi District	B. Axor	196	196	16.20153	106.842506
11	1402017	Saravane	Ta oi District	B. Adeu	366	366	16.243901	106.812573
12	1402027	Saravane	Ta oi District	B. Sanyayone	118	118	15.860168	106.664688
13	1402029	Saravane	Ta oi District	B. Toungkatai	150	150	15.968471	106.691299
14	1402030	Saravane	Ta oi District	B. Thongkahai	474	474	15.962352	106.675664
15	1402031	Saravane	Ta oi District	B. kamouan	370	370	15.947572	106.632345
16	1402032	Saravane	Ta oi District	B. pasom	354	354	15.9701	106.654817
17	1402033	Saravane	Ta oi District	B. Thoungxa	759	759	15.982425	106.713474
18	1402034	Saravane	Ta oi District	B. Pitian	271	271	15.977482	106.625164
19	1402035	Saravane	Ta oi District	B. Bongnam	553	553	15.982714	106.615063
20	1402039	Saravane	Ta oi District	B. Padu	1069	1069	15.947161	106.456203
21	1402043	Saravane	Ta oi District	B. Soytam	1226	1226	16.045774	106.45407
22	1402045	Saravane	Ta oi District	B. Chorlavieng	655	655	16.168631	106.529931
23	1402049	Saravane	Ta oi District	B. Kang	625	625	16.086074	106.572411
24	1402053	Saravane	Ta oi District	B. Kape	705	705	16.113129	106.669638
25	1402054	Saravane	Ta oi District	B. Katen	666	666	16.070581	106.675103
26	1402055	Saravane	Ta oi District	B. Paten	476	476	16.060155	106.682683
27	1402060	Saravane	Ta oi District	B. Toumlykhao	577	577	16.139656	106.656065
28	1402061	Saravane	Ta oi District	B. Dao	393	393	16.210561	106.682543
29	1402062	Saravane	Ta oi District	B. Sing	298	298	16.225742	106.684089
30	1402063	Saravane	Ta oi District	B. Sanang	528	528	16.234561	106.684006
31	1402064	Saravane	Ta oi District	B. Porbeui	420	420	16.252376	106.691213
32	1408004	Saravane	Samuoi District	B. Taloung	268	268	16.406451	106.822938
33	1408005	Saravane	Samuoi District	B. Taliab	323	323	16.514824	106.856429
34	1408006	Saravane	Samuoi District	B. Ho	190	190	16.511738	106.857841
35	1408007	Saravane	Samuoi District	B. Paluatieng	263	263	16.500836	106.832365
36	1408009	Saravane	Samuoi District	B. Amen/B. Amonlo	221	221	16.462165	106.826585
37	1408012	Saravane	Samuoi District	B. Lasen	220	220	16.434743	106.806044
38	1408013	Saravane	Samuoi District	B. Ajahongtun	203	203	16.441048	106.79746
39	1408014	Saravane	Samuoi District	B. Xe	157	157	16.450871	106.791229
40	1408016	Saravane	Samuoi District	B. Tanyu	135	135	16.467876	106.78549
41	1408017	Saravane	Samuoi District	B. Samouay	139	139	16.427065	106.817054
42	1408020	Saravane	Samuoi District	B. Tandy	226	226	16.402055	106.876309
43	1408021	Saravane	Samuoi District	B. Asao	139	139	16.40965	106.876915
44	1408023	Saravane	Samuoi District	B. Pheenxe	257	257	16.386447	106.872036
45	1408028	Saravane	Samuoi District	B. Talocui	163	163	16.422831	106.816114
46	1408029	Saravane	Samuoi District	B. Kilignai	189	189	16.404304	106.818651
47	1408030	Saravane	Samuoi District	B. Amai	210	210	16.375098	106.816532
48	1408031	Sekong	Kaleum District	B. Hanong neua	734	734	16.274684	106.895485
49	1408036	Saravane	Samuoi District	B. Lavatai	255	255	16.303914	106.868674
50	1408037	Saravane	Samuoi District	B. Lavaneua	148	148	16.311762	106.889567
51	1408041	Saravane	Samuoi District	B. Lalor	162	162	16.348716	106.946269
52	1408044	Saravane	Samuoi District	B. Lahang	637	637	16.299277	106.934413

53	1408045	Saravane	Samuoi District	B. Tangko	707	707	16.313851	106.91449
54	1408046	Saravane	Samuoi District	B. Phina	294	294	16.300536	106.891402
55	1408053	Saravane	Samuoi District	B. Acheungleng	513	513	16.269621	106.888385
56	1408056	Saravane	Samuoi District	B. Atouk	345	345	16.290717	106.947639
57	1408057	Saravane	Samuoi District	B. Adengkoutab	328	328	16.297425	107.023191
58	1408059	Saravane	Samuoi District	B. Avay	325	325	16.208165	106.908377
59	1408061	Saravane	Samuoi District	B. Kaleng	320	320	16.230685	106.930421
60	1408064	Saravane	Samuoi District	B. Kaboeui	177	177	16.20108	106.995816
61	1408067	Saravane	Samuoi District	B. Axingneua	260	260	16.303562	106.838838
62	1502002	Sekong	Kaleum District	B. Kaengkhouy	1325	1429	15.778277	106.90262
63	1502003	Sekong	Kaleum District	B. Thongkai	1860	281	15.642315	106.677902
64	1502004	Sekong	Kaleum District	B. Parkxai	224	224	15.653532	106.664871
65	1502005	Sekong	Kaleum District	B. Klung	235	235	15.827816	106.755486
66	1502006	Sekong	Kaleum District	B. Bark	212	212	15.842492	106.771873
67	1502007	Sekong	Kaleum District	B. ploy+talangmai	308	308	15.841601	106.7949
68	1502008	Sekong	Kaleum District	B. Kador	160	160	15.844796	106.865145
69	1502013	Sekong	Kaleum District	B. Hanong neua	260	290	15.659778	106.848419
70	1502015	Sekong	Kaleum District	B. Ching	271	271	15.756564	106.823667
71	1502016	Sekong	Kaleum District	B. Songkhone	528	528	15.778002	106.8219
72	1502017	Sekong	Kaleum District	B. Chalork	336	336	15.78108	106.882002
73	1502018	Sekong	Kaleum District	B. Locui (Docui)	323	323	15.714256	106.855235
74	1502020	Sekong	Kaleum District	B. Chale	471	471	15.677297	106.896934
75	1502021	Sekong	Kaleum District	B. Teenteum	174	174	15.692377	106.917425
76	1502025	Sekong	Kaleum District	B. Tangpa	209	209	15.638961	107.019773
77	1502026	Sekong	Kaleum District	B. Tangpang	263	263	15.617601	106.871411
78	1502029	Sekong	Kaleum District	B. Ahang+kandone	514	514	15.738292	107.067131
79	1502032	Sekong	Kaleum District	B. Kandone	165	165	15.733619	107.030574
80	1502033	Sekong	Kaleum District	B. Tamor	293	293	15.827717	107.059583
81	1502035	Sekong	Kaleum District	B. Teneung+Vang	304	304	15.818601	107.036778
82	1502037	Sekong	Kaleum District	B. Laipor	148	148	15.881252	106.898091
83	1502038	Sekong	Kaleum District	B. Pom	182	182	15.894169	106.9171
84	1502043	Sekong	Kaleum District	B. Talui	178	178	15.707602	106.859937
85	1502045	Sekong	Kaleum District	B. Po+Lam+Sa ang	338	338	15.957737	106.82128
86	1502049	Sekong	Kaleum District	B. Bobing+talong	272	272	15.845679	107.08077
87	1502071	Sekong	Kaleum District	B. Ling	348	348	15.642966	106.932833
88	1502072	Sekong	Kaleum District	B. Tangkard	253	253	15.614441	106.866151
89	1502075	Sekong	Kaleum District	B. Yeub+Chanoi	436	407	15.787438	107.048441
90	1502082	Sekong	Kaleum District	B. Chakeuiphou	330	370	15.735136	106.65755
91	1503001	Sekong	Dakcheung District	B. Brong gnai	358	397	15.233154	107.535076
92	1503002	Sekong	Dakcheung District	B. Brong noy	308	337	15.151587	107.581169
93	1503003	Sekong	Dakcheung District	B. Dark pa ner	239	250	15.288213	107.611751
94	1503007	Sekong	Dakcheung District	B. Darkmeu	380	380	15.324622	107.339405
95	1503017	Sekong	Dakcheung District	B. Dark trerb	690	690	15.323656	107.138398
96	1503020	Sekong	Dakcheung District	B. Dark Ngork	301	301	15.339093	107.202081
97	1503021	Sekong	Dakcheung District	B. Lienglouang	500	500	15.33247	107.097639
98	1503023	Sekong	Dakcheung District	B. Darkdom	294	294	15.540649	107.332979
99	1503027	Sekong	Dakcheung District	B. Darkman	383	383	15.448248	107.369479
100	1503028	Sekong	Dakcheung District	B. Darkta ork yai	333	333	15.462415	107.36621
101	1503033	Sekong	Dakcheung District	B. Dark yang noy	132	157	15.358667	107.405157
102	1503034	Sekong	Dakcheung District	B. Darkplarn	224	248	15.318309	107.620657
103	1503036	Sekong	Dakcheung District	B. Tangbrong	1383	1497	15.524046	106.990191
104	1503038	Sekong	Dakcheung District	B. Tanglou+Dark le	498	498	15.487292	107.108874
105	1503045	Sekong	Dakcheung District	B. Darkchang	292	292	15.603628	107.099098
106	1503049	Sekong	Dakcheung District	B. Tangmii	236	236	15.589635	107.226665
107	1503050	Sekong	Dakcheung District	B. Kong gnong	245	245	15.615046	107.239433

108	1503051	Sekong	Dakcheung District	B. Darkdieng	256	256	15.556958	107.312029
109	1503058	Sekong	Dakcheung District	B. Dark larn	644	644	15.35314	107.037095
110	1503060	Sekong	Dakcheung District	B. Darkxeng	364	364	15.340092	107.087307
111	1503062	Sekong	Dakcheung District	B. Darkbong	317	309	15.590355	107.14303
112	1503068	Sekong	Dakcheung District	B. Tangtalang	524	524	15.700644	107.232231
113	1503086	Sekong	Dakcheung District	B. Darden	538	538	15.356983	107.245485
114	1503090	Sekong	Dakcheung District	B. Tongxieng	263	263	15.485634	107.231316
115	1503092	Sekong	Dakcheung District	B. Darksa	351	351	15.526622	107.187702
116	1503102	Sekong	Dakcheung District	B. A youn	333	333	15.646668	107.211772
117	1503105	Sekong	Dakcheung District	B. Dakouang	448	448	15.42073	107.304295
118	1503111	Sekong	Dakcheung District	B. Darkdoung	334	334	15.408773	107.011329
119	1503114	Sekong	Dakcheung District	B. Dark le	301	301	15.348129	107.331964
120	1503124	Sekong	Dakcheung District	B. Dark rern	237	253	15.472451	107.204267
121	1503127	Sekong	Dakcheung District	B. Darkwor+Dark a	442	442	15.385424	107.301569
122	1503131	Sekong	Dakcheung District	B. Dark ran	402	402	15.409292	107.251687
123	1503132	Sekong	Dakcheung District	B. Darkdenh	262	262	15.393052	107.524762
124	1701001	Attapeu	Xaysetha District	B. saysi	1326	1326	14.792616	106.885687
125	1701006	Attapeu	Xaysetha District	B. Toiy	1169	1169	14.832396	106.960344
126	1701007	Attapeu	Xaysetha District	B. Kangyay	1850	1850	14.831835	107.018746
127	1701011	Attapeu	Xaysetha District	B. Hadsun	1880	1880	14.799588	107.000945
128	1701015	Attapeu	Xaysetha District	B. Somkoth	1572	1572	14.799893	106.919629
129	1701016	Attapeu	Xaysetha District	B. Donesim	704	704	14.769638	106.926113
130	1701017	Attapeu	Xaysetha District	B. Phog	2590	2590	14.805155	106.903468
131	1701018	Attapeu	Xaysetha District	B. Thalan	1146	1146	14.862288	106.851903
132	1701019	Attapeu	Xaysetha District	B. Hadsaty	1607	1607	14.906109	106.843516
133	1701022	Attapeu	Xaysetha District	B. Kangsay	1239	1239	15.035197	106.863401
134	1701023	Attapeu	Xaysetha District	B. Sapoungneou	2639	2639	15.086928	106.855962
135	1701024	Attapeu	Xaysetha District	B. Numhieng	495	495	15.160781	106.812578
136	1701030	Attapeu	Xaysetha District	B. Sakare	3345	3345	14.940887	106.884244
137	1701036	Attapeu	Xaysetha District	B. Dakying	1382	1869	14.832223	107.222712
138	1701037	Attapeu	Xaysetha District	B. Maioudom	3078	3078	14.749382	106.962046
139	1702018	Attapeu	Samakkhixay Distric	B. Champhao	983	983	14.821391	106.736154
140	1702019	Attapeu	Samakkhixay Distric	B. Kamsung	886	886	14.811541	106.75124
141	1702020	Attapeu	Samakkhixay Distric	B. Somsanook	946	946	14.787793	106.748631
142	1702021	Attapeu	Samakkhixay Distric	B. Sisomphone	2598	2598	14.755343	106.742735
143	1702035	Attapeu	Samakkhixay Distric	B. Sayphosy	622	622	14.915252	106.825846
144	1702036	Attapeu	Samakkhixay Distric	B. Halungyay	863	863	14.953678	106.851452
145	1702037	Attapeu	Samakkhixay Distric	B. Kasom	803	803	14.986796	106.849813
146	1702038	Attapeu	Samakkhixay Distric	B. Salk	1814	1814	15.066556	106.842349
147	1702039	Attapeu	Samakkhixay Distric	B. Haisok	11098	11098	15.071472	106.842271
148	1702043	Attapeu	Samakkhixay Distric	B. Meouhuomeung	1929	1929	15.166056	106.766426
149	1704001	Attapeu	Sanxay District	B. Jalernsay	740	740	15.155468	107.073482
150	1704004	Attapeu	Sanxay District	B. Dakkanath	491	491	15.145912	107.089655
151	1704005	Attapeu	Sanxay District	B. Dakhiat	1597	1597	14.914551	107.061534
152	1704007	Attapeu	Sanxay District	B. Hindum	285	285	14.885009	107.106831
153	1704010	Attapeu	Sanxay District	B. Yiatdak	583	752	14.940704	107.403054
154	1704012	Attapeu	Sanxay District	B. Dakpork	348	367	15.115586	107.444162
155	1704014	Attapeu	Sanxay District	B. Nongpha	505	597	14.799821	107.481197
156	1704015	Attapeu	Sanxay District	B. Vungtatyai	338	405	15.027105	107.39704
157	1704016	Attapeu	Sanxay District	B. Vungtatnoy	579	469	15.065479	107.402431
158	1704018	Attapeu	Sanxay District	B. Tadsang	1103	1103	14.983478	106.969891
159	1704021	Attapeu	Sanxay District	B. Moon	1022	1022	15.070102	106.909958
160	1704023	Attapeu	Sanxay District	B. Maythavone	507	507	15.247323	107.222283
161	1704024	Attapeu	Sanxay District	B. Daksang	234	234	15.266417	107.217954
162	1704027	Attapeu	Sanxay District	B. Sooksavung	948	1075	15.161404	107.303943

163	1704029	Attapeu	Sanxay District	B. Dakdao	176	176	15.271356	107.218235
164	1704030	Attapeu	Sanxay District	B. Dakband	109	109	15.284178	107.217576
165	1704031	Attapeu	Sanxay District	B. Vungsay	1526	1526	14.928355	107.050217
166	1704032	Attapeu	Sanxay District	B. Kongnaysi	330	330	15.160607	107.131866
167	1704035	Attapeu	Sanxay District	B. Donechun	131	131	15.224538	107.166987
168	1704038	Attapeu	Sanxay District	B. Daklakow	587	587	15.225733	107.177977
169	1704039	Attapeu	Sanxay District	B. Daklomrg	166	166	15.211789	107.148957
170	1704040	Attapeu	Sanxay District	B. Dakker	387	387	15.200632	107.139646
171	1704046	Attapeu	Sanxay District	B. Daknong	526	613	15.272627	107.062865
172	1704048	Attapeu	Sanxay District	B. Darkpokkao	344	344	15.171535	107.078876
173	1704049	Attapeu	Sanxay District	B. Dakdor	674	738	15.258762	107.118814
174	1704050	Attapeu	Sanxay District	B. Dakyok	475	540	15.251797	107.103648
175	1704052	Attapeu	Sanxay District	B. Daksiet	184	117	15.231216	107.11286
176	1704053	Attapeu	Sanxay District	B. Daksenm	420	456	15.211703	107.103385
177	1704054	Attapeu	Sanxay District	B. Daksamore	665	463	15.245001	107.076934
178	1704059	Attapeu	Sanxay District	B. Mainakok	673	673	14.856119	107.073401
179	1704060	Attapeu	Sanxay District	B. Tathkoom	463	463	14.881097	107.087831
180	1704061	Attapeu	Sanxay District	B. Pheerkeo	458	458	14.904244	107.035937
181	1704062	Attapeu	Sanxay District	B. Phouxai	1020	1020	14.928992	107.046867
182	1705005	Attapeu	Phouvong District	B. Vongsay	895	895	14.656894	106.703604
183	1705012	Attapeu	Phouvong District	B. Kaouan (Taoum)	510	510	14.681767	106.827271
184	1705014	Attapeu	Phouvong District	B. Vonglakone	526	526	14.639689	106.705588
185	1705020	Attapeu	Phouvong District	B. Vongvilaytay	1689	1689	14.688044	106.837516
186	1705024	Attapeu	Phouvong District	B. Phousay	315	315	14.731862	106.771885
187	1705026	Attapeu	Phouvong District	B. Vungkhan	1972	1972	14.699047	106.861583
188	1705027	Attapeu	Phouvong District	B. Khamvongsa	1364	1364	14.754921	106.929057
189	1705027007	Attapeu	Phouvong District	B. Makkieng	613	613	14.699121	106.861777