



ADAPTATION FUND

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Adaptation Fund Board
Project and Programme Review Committee
Thirty-eighth Meeting
Bonn, Germany, 19-23 October 2026

PROPOSAL FOR CAMBODIA



ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT
TECHNICAL REVIEW OF PROJECT PROPOSAL FOR
"ENHANCING COMMUNITY-BASED ADAPTATION AND ECOSYSTEM RESILIENCE IN
PROTECTED AREAS THROUGH GREEN DESTINATION IN KAMPONG SPEU, CAMBODIA "

Project Title	Enhancing Community-Based Adaptation and Ecosystem Resilience in Protected Areas through Green Destination in Kampong Speu, Cambodia
Project ID	AF00000470
Category	Regular size project (over \$1 million)
Type	Single country project
Stage	Fully-developed project
Country	Cambodia
Implementing Entity	UNHAB
Financing Requested	USD 10,000,000.00
Reviewer	Alexandra Munoz

Co-reviewer(s)

IE Contact Person

Cerin Kizhakkethottam, Daniella Chehade, Jun
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Secretariat's Overall Comment

The project “Enhancing Community-Based Adaptation and Ecosystem Resilience in Protected Areas through Green Destination in Kampong Speu, Cambodia” aims to strengthen the long-term climate resilience of vulnerable communities and ecosystems in Aoral and Phnum Sruoch Districts by 2030 through inclusive governance systems, nature-based ecosystem restoration across at least 57 hectares, and the promotion of sustainable livelihoods for at least 100 households, contributing to biodiversity conservation, climate risk reduction, and sustainable development in protected areas. The initial technical review raises several issues, such as more details about the estimation for the economic benefits, the need for the inclusion of sectoral plans, as well as lessons learned from past projects, core indicators, and a proper alignment with AF Results Framework, a more detailed budget, among others, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Request (CAR) raised in the review.

Country Eligibility

Is the country party to the Kyoto Protocol or the Paris Agreement?

Response: Yes

Secretariat: Cambodia ratified the Kyoto Protocol on 22 August 2002 and the Paris Agreement on 6 February 2017.

Is the country a developing country particularly vulnerable to the adverse effects of climate change?

Response: Yes

Secretariat: Cambodia is facing an escalating climate crisis, characterised by longer dry seasons, erratic rainfall, rising temperatures, and more frequent extreme events. These changes are destabilising both natural ecosystems and human livelihoods, especially in upland regions like Aoral and Phnum Sruoch Districts of Kampong Speu, where communities are heavily reliant on subsistence agriculture and forest-based resources. With limited access to resilient infrastructure, financial services, or diversified income, households face growing exposure to climate-induced hardship. Cambodia is among the most climate-vulnerable countries in Southeast Asia, frequently affected by heatwaves, floods, and droughts.^{12F} According to the Global Climate Risk Index (CRI), Cambodia ranked 14th among 181 countries in terms of cumulative climate risk from 2000 to 2019.¹³

Project Eligibility

Has the designated government authority for the Adaptation Fund endorsed the project/programme?

Response: Yes

Secretariat: As per Endorsement Letter dated June 29, 2026.

Does the length of the proposal amount to no more than One hundred (100) pages for the fully-developed project document, and one hundred (100) pages for its annexes?

Response: Not Cleared

Secretariat: No. The proposal document amounts to 100 pages, the Annexes to 99 pages, and the assessments to 33 pages. CR1: Please include the following: - Titles for all tables in the annexes and number the paragraphs through all the document to facilitate referencing and streamline the review process. - Use "%" instead of "per cent" - Please ensure that the images are large enough for readers to clearly read the information they contain. - Please specify all executing entities' names. CAR1: Please ensure that the annexes, including the assessments that form part of them, do not exceed 100 pages.

Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?

Response: Not Cleared

Secretariat: Yes. However, additional information is required. Pages 20-33. It describes the four project components, four outcomes, and 15 output, including details on how this address the climate threats and lead to tangible outcomes. The project contributes to the focal area of Food Security and Ecosystem-Based Adaptation. In addition, the proposal states that, based on the gender assessment and local context, the project will promote at least 30 percent representation of women in meetings, consultations, community voting processes, participatory planning, and monitoring activities, while establishing minimum participation and beneficiary targets for vulnerable groups. However, some clarifications and more details are needed regarding specific objectives, Theory of Change, and component's description. CR2: Please clarify the basis and sources on which the "Recommended Adaptation Interventions" are based. CR3: Please revise and restructure the "Project/Programme Objectives" section to: - Establish a single Project Goal/General Objective along the four specific objectives. - Remove targets from the objectives. CR4: Please explain: - how the participation and beneficiary target for women will be ensured and the mechanisms to ensure it. - how will be ensured a minimum participation of youth and indigenous people. CR5: Please explain the rationale behind the use of "at least" in the proposed targets. Is it anticipated that implementation efficiencies or cost savings could enable the project to reach a greater number of beneficiaries than initially planned? CR6: Please include in the Theory of Change diagram the main climate problem the proposed project is intended to contribute. CR7: Please consider adjusting the dates in Table 3 to: - provide sufficient time for the preparation of the final version of the proposed project. - terminal evaluation should be after 6 months of the project's end. CR8: Please list the key activities to reach each output and provide information on the agencies which will lead to implementation for all activities, clearly describing their responsibility and role, and the key arrangements.

Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?

Response: Not Cleared

Secretariat: Yes. However, additional information is required. Part II.B (pages 33– 36) describes the benefits in three main areas: economic, social and environmental. In terms of economic benefits, the proposal states that the project will benefit by promoting diversified, climate-resilient livelihoods and essential infrastructure. In terms of social benefits, the project will reduce multidimensional poverty and enhance human well-being. In terms of environmental benefits, the project will restore degraded areas within 57 hectares of degraded forests and watershed areas will regenerate critical ecosystem services. However, estimated benefits are not quantified in terms of income gain, jobs created, increased markets or projected impacts on the economy. In addition, the method of benefit distribution and selection criteria is unclear. There is also no mention of concerns of negative development or maladaptation, neither is there mention of whether there is a risk that the project will increase the vulnerability of beneficiaries or non-beneficiaries, nor reduce their capacity to adapt to climate change. CR9: Please strengthen the benefits narrative by including quantitative estimates of benefits if available on parameters such as jobs created, increased markets or impacts on the economy. Please keep in mind that the outputs targets does not represent the estimation of benefits. CR10: Please indicate whether there are any risks of negative outcomes or increased vulnerability among beneficiaries and non-beneficiaries. Please also specify any potential adverse impacts or risks associated with the proposed project that could affect women and other vulnerable groups. CR11: Please describe how project benefits will be equitably distributed and identify which benefits will be specifically targeted to vulnerable groups. CAR2: Please refer to the Gender Analysis is developed and clearly distinguish their needs, capacities, roles, and knowledge resources of women and men, and how evolving gender dynamics may influence potential changes.

Is the project / programme cost effective?

Response: Not Cleared

Secretariat: Yes. However, more information is required. Part II.C (pages 36-40). It describes an integral approach for the cost-effectiveness analysis of the proposed project. It provides estimated costs for each of the 15 outputs. However, the structure of the section needs amendments and more details are required. CR12: Please provide a sound and logical cost-effectiveness analysis for each component, clarifying the method used, demonstrating how the proposed approach is more cost-effective than alternative options. The analysis should include a comparison between the BAU and intervention scenarios, supported by quantitative estimates or suitable proxies, as well as a clear description of the alternative measures considered. CR13: Please provide information on the cost-effectiveness from the sustainability point of view, for example, what arrangements are needed? CR14: Please consider restructuring this section to focus solely on cost-effectiveness. The beneficiary table would be better placed under Part II.A or Part II.B. In addition, it is not clear what is meant by "beneficiary overlap." Beneficiary figures should be presented at both the outcome level and the overall project level, without including overlapping beneficiaries.

Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?

Response: Not Cleared

Secretariat: Yes. However additional information is required. Part II.D (pages 40-43). It describes how the project is consistent with national strategies/plans, including the National Development Initiatives, the NDC, National Climate Policy and Adaptation Planning, the Development Goals, among others. However, some sectoral plans and more details are needed. CR15: Please include all identified strategies and plans in Table 11, including the four indicated above the table. Please include all listing in one table. CR16: Please include Cambodia's National Adaptation Plan (NAP) and any other strategies, plans, or policies related to climate change and climate adaptation. CR17: Please review whether the gender and poverty-related plans should be included in Table 11. In addition, please assess whether relevant sectoral strategies, including those related to infrastructure, food security, and other project-related sectors, should also be included.

Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?

Response: Not Cleared

Secretariat: Yes. However additional information is required. Part II.E (pages 44-47). It provides general information on the proposed project's compliance with national standards. However, the information presented is not sufficiently clear, and the section should be restructured. CR18: Please move " Environmental and Social Safeguards and Adaptation Fund ESP" part to the corresponding section, including all risks and mitigation plan. Under Part II.E only goes the information about compliance with standards. CAR3: Please restructure Table 14 to ensure: - A line per identified standard. - A table with 5 columns: (i) name of the standard, (ii) name of the competent authority (it should be just one), (iii) scope and relevance should be described specifically, (iv) how is it relating to the proposed project, clearly identifying the outputs that will require compliance with the identified standard, and (v) project's compliance status. In the case that compliance is required, please include the key steps needed to comply with it. CR19: Please ensure that all the relevant national laws, standards, and regulations have been identified. Please include local standards if applicable.

Is there duplication of project / programme with other funding sources?

Response: Not Cleared

Secretariat: Yes. However, additional information is required. Part II.F (pages 47-50) and Table 15. The proposed project states that avoids duplication with existing initiatives and addresses a critical adaptation gap in vulnerable upland protected areas by promoting climate-resilient livelihoods, ecosystem restoration, community infrastructure, and local governance, while assessing potential synergies with IFAD's CAISAR project. However, there is need for additional information such as on lessons learned from previous projects implemented in the country as this would inform on past issues. CR20: Please ensure that all information under Part II.F is included in Table 15. CR21: Please restructure Table 15 to describe the interventions that are or have been implemented in Cambodia. For each, please ensure to include the following columns: (i) Target population, (ii) Implementing entity, (iii) Timeline and specific location within the countries, (iv) Lessons learned from earlier initiatives, (v) Synergies or no duplications. Sound justifications for no duplication statement (e.g. by indicating the distinct types of interventions) for each related project identified). CR22: Please describe the coordination framework to be used during implementation to ensure the prevention of duplication throughout the project's execution. In addition, please refer to other AF projects in Cambodia in Table 15. Previous AF-funded projects may provide lessons learned that can support the project design.

Does the project / programme have a learning and knowledge management component to capture and feedback lessons?

Response: Not Cleared

Secretariat: Yes. However, additional information is required. Part II.G (pages 50-51). The project will generate and disseminate adaptation knowledge through a "learning-by-doing" approach, including participatory learning, monitoring, and capacity-building processes, enabling communities and institutions to assess climate adaptation benefits, strengthen local resilience. However, more details are needed. CR23: Kindly revise the following: 1. Provide additional details on the Learning and Knowledge Management (LKM) activities, including the institutions involved and the specific products to be undertaken. LKM products should be specific. Please avoid using "including" as the quantity and type of products should be already determined. 2. Clarify how the knowledge generated will be sustained after the project's completion and describe the arrangements required to ensure its long term sustainability. In addition, please indicate whether any pre-agreements have been established with the government or communities. 3. Specify what feedback mechanisms will be used to assess and refine the capacity building materials and activities.

Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?

Response: Not Cleared

Secretariat: Yes. However, some amendments are required. Part II.H (pages 51-54) and Annex A. It describes the consultation process involved in developing the proposal, including a description of the consultation techniques applied for the target groups. It states that a Leaving No One Behind (LNOB) principle was applied to ensure the participation of vulnerable groups. 13 consultations are identified between 2025 and 2026. Each one includes the number of participants disaggregated by sex. A brief gender analysis is included in the proposal. However, more information is required either under Part II.H or the Annex A. CR24: Please provide the following information for each consultation: 1. Consulted entity/ group, especially if they correspond to gender organizations. They should be specifically named, 2. Besides the number of participants disaggregated by gender, please also include other desegregations by vulnerable groups (at least, indigenous participants should be added), 3. Expand on the key issues raised and how they were considered in project design (name specific outputs and outcomes currently in the proposal), 4. Background information to verify whether marginalized and vulnerable groups have been consulted, 5. Moreover, please indicate if further future consultations will be conducted. 6. How gender considerations (and those related to other vulnerable groups) were reflected in the proposed project, and what their main concerns were specifically. CAR4: Please provide summary of the Initial Gender Analysis/Assessment to explain how gender perspectives were included into the consultation process.

Is the requested financing justified on the basis of full cost of adaptation reasoning?

Response: Not Cleared

Secretariat: Yes. However, some details are required. Part II.I (pages 55-57). It provides a justification for the requested funding on the basis of full cost of adaptation, and seeks Adaptation Fund financing to address the full cost of climate adaptation for vulnerable upland communities in Aoral and Phnum Sruoch Districts. It will strengthen resilience through climate-resilient infrastructure, ecosystem restoration, inclusive governance, and diversified livelihoods, addressing climate risks that cannot be managed through existing resources or business-

as-usual approaches. The project targets vulnerable groups, including Indigenous Peoples, women, and youth, while promoting sustainable natural resource management and community-led adaptation. By combining nature-based solutions, institutional capacity-building, and local investments, the project is expected to generate long-term adaptation benefits and reduce vulnerability. Table 17 compares, per component, a baseline scenario against an AF scenario. However, more details are needed. CR25: Please clarify whether co-financing will be part of the proposal and whether the project will be able to achieve the expected results solely with AF resources. CR26: Please strengthen the narrative on how good practices will support replication and scaling up, and how knowledge products will help attract ecotourists.

Is the project / program aligned with AF's results framework?

Response: Not Cleared

Secretariat: No. Part III.F (pages 83-85). presents the Alignment with the Results Framework of the Adaptation Fund. However, the table needs to be adjusted using the guidelines set out in the Results Framework Alignment Table (<https://www.adaptation-fund.org/document/alignment-with-adaptation-fund-results-framework-template-and-guidance-dec-2025/>). CAR5: Please revise and amend Table 25 as follows: 1. All project's outputs and outcomes indicators are SMART. 2. Please ensure consistency in the wording and numbering of the Fund's Outcomes, outputs and indicators according to the updated AF Results Framework. 3. Please ensure the table is completed as indicated in the updated AF Results Framework. For example, the version included in the proposal should also contain the line of "Total Objective Level Grant Amount".

Has the sustainability of the project/programme outcomes been taken into account when designing the project?

Response: Not Cleared

Secretariat: Yes. However, additional information is required. Part II.J (pages 57-59). The section describes how sustainability has been incorporated into the project design and embedded across its four components through six dimensions: institutional, social, economic, financial, environmental, and infrastructure sustainability. It also explains that the adaptation benefits generated by the project are expected to be sustained, replicated, and scaled up beyond the project's lifetime through the development and dissemination of knowledge products. However, the narrative would benefit from stronger articulation and greater coherence across the different dimensions. CR27: Please provide more details for each sustainability dimension following this guidance: (i) Are all arrangements clearly described? (ii) Are there any pre-arrangements already signed or under preparation? (iii) What will be the main responsible institutions involved? (iv) Is the narrative to reach sustainability clearly explained? CR28: Please include specific considerations for O&M and provide detailed information on how the adaptation benefits will enable and guarantee replication and scaling up after project completion.

Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?

Response: Not Cleared

Secretariat: Yes. However, some additional information is required. Part II.K (pages 59-61). The proposal includes an assessment of the proposed project against the 15 AF ESP principles. The proposal is category B according to the AF ESP. However, risk identification could be strengthened, negative impacts are not clearly

described, among other issues that need to be amended. CAR6: The gender action plan should be budgeted. Please present the costs for the gender action plan by inserting an additional column in the GAP. Please ensure that the GAP costs are clearly reflected in the detailed budget and the M&E plan as appropriate. CAR7: Please amend the Table to: 1. Identify and describe all potential impacts (direct, indirect, transboundary and cumulative) and risks that could result from the project. Descriptions must be specific rather than generic. 2. Revise the magnitude of the risks and impacts (low, moderate, high). Risks should describe as: "There is a risk" and must be accompanied by mitigation plans as: "Mitigation measures are" or "To mitigate this risk, the project" 3. Kindly leave a check mark in the second column 'No further assessment required for compliance' if no further assessment is needed and leave blank if an assessment is to be conducted. 4. If no risk is identified for a given principle, a sound justification must be provided. 5. Please note that AF Principles 1, 4 and 6 always apply. For more information, please visit: AF's ESP guidance and Environmental and Social Policy.

Resource Availability

Is the requested project / programme funding within the cap of the country?

Response: Cleared

Secretariat: Yes. The proposal is for USD 10,000,000

Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?

Response: Cleared

Secretariat: Yes. As per information provided in Table "Project/Programme Components and Financing". The figures add up and match across the tables – components table vs. budget. The figures are rounded to a whole number (i.e., no decimals). The Implementing Management Fee is exactly 8.5% (USD 783,038) of the Total Project/Programme Budget before fee.

Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?

Response: Cleared

Secretariat: Yes. As per information provided in Table "Project/Programme Components and Financing". All the figures are rounded to a whole number. They add up and match across the tables. The Project Execution Cost is 9.5% (USD 874,762) of the Total Project/programme Budget, including the fee.

Eligibility of IE

Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?

Response: Cleared

Secretariat: Yes. United Nations Human Settlements Programme (UN-HABITAT) is an accredited Multilateral Implementing Entity (MIE). Accreditation status: Accredited (Special extension per Decision B.46/9)

Implementation Arrangements

Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?

Response: Not Cleared

Secretariat: Yes. However, some details are needed. Part III.A (pages 62-68). The proposal indicates the roles of the EE and IE, alongside the roles of local executing entities. It provides an overview of the arrangements as well as a summary of the tasks at the national and subnational level. However, some minor details are needed. CR29: Please specify the profiles needed to conform the PEU of the proposed project. CR30: The proposal states that at least 30% of the PEU personnel will be women. Please explain how this target will be achieved. What mechanisms will be put in place to ensure that the views and perspectives of women and other vulnerable groups are adequately represented and considered? Will there be a dedicated Indigenous Peoples focal point? How will the gender focal point contribute to project implementation and decision-making? Are there any other gender-responsive implementation arrangements that will be established to ensure inclusive and equitable project delivery?

Are there measures for financial and project/programme risk management?

Response: Not Cleared

Secretariat: Yes. However, some amendments are needed. Part III.B (pages 69-70) describes the measures which will be adopted by the project to address financial and management risks. Table 21 summarizes the key financial risks against 12 categories. However, further details are needed regarding the identification of risks and their mitigation measures. CAR8: Please ensure that Table 21: - Properly identifies all major risks under each risk category, taking into account their significance. Each risk description should begin with: "There is a risk that..." - Explicitly includes monitoring and mitigation measures for each identified risk, including how the risks will be managed throughout project implementation. Each mitigation measure should begin with: "The mitigation measure will be..."

Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?

Response: Not Cleared

Secretariat: Yes However, some details are required. Part III.C (pages 71-72) and Annex C (that includes Table 32). The proposal describes the measures in place for management of environmental and social risks in line with the Environmental and Social Policy of the Fund. The proposal identifies all major environmental and social risks. The significance of each environmental and social risk is assessed against the 15 principles of the AF ESP through a two-dimensional analysis combining impact severity and probability of occurrence. Each dimension is scored on a five-point scale, and the resulting product determines the risk significance category. However, further details are needed. CR31: Please review whether both Table 30 and Table 18 are necessary. If they contain overlapping information, consider retaining only one table. CR32: Please explain why 9 ESS consultants will be required for ESS monitoring and documentation. CR33: Please strengthen this section by including a diagram that clearly illustrates the roles and responsibilities of each key stakeholder involved in the ESMP.

Is a budget on the Implementing Entity Management Fee use included?

Response: Not Cleared

Secretariat: Yes. However, some amendments are required. The budget includes a breakdown of the Implementing Entity Management Fee. However, some figures needs revision. CR34: Please address Tables 22 and 23 by updating the section of the budget with the details of the breakdown of the Implementing Entity fees. Clarification notes should be included as an additional column to the tables. CR35: Please disaggregate the amounts for M&E, ESMP and GAAP in the breakdown of the IE Fees. Also, MTE, FE and Baseline report should be included in the IE fee. Please refer to this guidance: <https://www.adaptation-fund.org/generic/costs-and-fees/> CR36: Please revise Table 23 and amend figures accordingly. For example, while Table 22 presents a budget of USD 40,000 for Mid-term & Final Evaluation (inc HQ) , Table 23 considers USD 39,000 +USD 40,000 = USD 79,000. Why is the difference? If additional funding is added, how many additional products will be financed?

Is an explanation and a breakdown of the execution costs included?

Response: Not Cleared

Secretariat: No. Further information is required. CR37: Please provide a detailed breakdown of the Execution Costs, including the amounts allocated to M&E, ESMP, and GAAP within the EE fees. Please refer to this guidance: <https://www.adaptation-fund.org/generic/costs-and-fees/>

Is a detailed budget including budget notes included?

Response: Not Cleared

Secretariat: Yes. However, some amendments are required. A detailed budget is included in Part III.G (pages 86-98). The budget includes notes indicating the breakdown of costs at the output level. However, there are inconsistencies in the some figures and notes, and further information is needed. CR38: Please ensure consistency of the figures throughout the proposal. For example, output 1.1 is states at USD 120,000 in Table 26 wile it is stated at USD 121,200 in Table 27. Please ensure figures add up and are consistent through all the proposal for all outputs and outcomes. CR39: Please explain how the figures presented in the notes were calculated. For staff-related costs, please specify the number of staff involved and their respective profiles/roles. For materials, training sessions, workshops, or consultations, please indicate the number of activities, their duration, and any specific tools or equipment required. In addition, please clarify the budget allocated to the GAP and describe the specific activities and measures included under it.

Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?

Response: Not Cleared

Secretariat: Yes. However, some adjustments are required. Part III.D describes the arrangements for monitoring and evaluation. There is a statement of the main roles and responsibilities for different type of M&E Activities in Table 23, alongside their budget. This budget includes provisions for a mid-term and terminal evaluation. However, some amendments are needed. CAR9: Please include how the M&E Plan will manage the environmental and social risks identified. CR40: Please include key M&E milestones. CR41: Please ensure that all project's indicators are SMART in Table 24, and ensure consistency through the proposal. CR42: Please provide further details on the activities to be financed, entity in charge, specific budget, and notes for the M&E Plan. Avoid using "operational budget".

Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?

Response: Not Cleared

Secretariat: Yes. However, some adjustments are required. Table 22 in Part III D presents the budgeted M& E plan with a breakdown of IE fees for supervision and M &E function. Some amendments are needed. CR43: Please adjust the budget allocation, evaluation-related costs (i.e., baseline data report, MTR and Final Evaluation) should represent 1-2% of the total project cost, consistent with the recommended range for projects of this size (see table 3 in https://www.adaptation-fund.org/wp-content/uploads/2023/10/AFB.EFC_.32.7_Evaluation-Policy-Budget-Implication_clean.pdf).

Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?

Response: Not Cleared

Secretariat: Unsure. Some adjustments are required. Part III.E provides a statement on the direct and indirect beneficiaries of the project disaggregated by gender. Table 24 presents the results framework including targets and indicators. However, some details are needed. CAR10: In Part III.E, please include the AF core indicators in a dedicated table for each indicator (note: add tables headings and numbers) and align with AF related requirements. Related guidance on this can be found at: Methodologies for reporting Adaptation Fund core impact indicators. CR44: Please revise the alignment table provided in part III.F using the alignment table template <https://www.adaptation-fund.org/document/alignment-with-adaptation-fund-results-framework-template-and-guidance-dec-2025/>

Is a disbursement schedule with time-bound milestones included?

Response: Not Cleared

Secretariat: Yes. However, some adjustments are required. Part III.H (pages 98-99) presents the disbursement schedule with time-bound milestones, relative to three broad categories: (i) Funds (US\$), (ii) Programme Execution, and (iii) Programme Cycle Mgt. However, there are some disparities between the figures in the

detailed budget and the disbursement schedule. CR45: Please make the necessary adjustments to the Components table and detailed budget so that they are consistent throughout the project document.

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: Enhancing Community-Based Adaptation and Ecosystem Resilience in Protected Areas through Green Destination in Kampong Speu, Cambodia

Country: Cambodia

Thematic Focal Area: Food Security and Ecosystem-Based Adaptation

Type of Implementing Entity: Multilateral Implementing Entity

Implementing Entity: United Nations Human Settlements Programme (UN-Habitat)

Executing Entities:

National level
Ministry of Environment (MoE)

Local level
Kampong Speu Provincial Administration
NGOs and Communities

Amount of Financing Requested: 10,000,000 (in U.S Dollars Equivalent)

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

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

Stage of Submission:

- ☒ This proposal has been submitted before including at a different stage (concept, fully-developed proposal)
- ☐ This is the first submission ever of the proposal at any stage

In case of a resubmission, please indicate the last submission date: 7/10/2026

Please note that fully-developed proposal documents should not exceed 100 pages for the main document, and 100 pages for the annexes.

A. Project/Programme Background and Context

1. National Context

1. Cambodia, a lower-middle-income country in Southeast Asia, lies between latitudes 10° and 15° North and longitudes 102° and 108° East. It spans a land area of 181,035 km², extending approximately 580 km from east to west and 450 km from north to south. The country shares borders with Thailand to the west and north, Laos to the north, and Vietnam to the east and southeast. To the southwest, it has a 435 km coastline along the Gulf of Thailand, and an exclusive economic zone of approximately 55,600 km².^{1,2} Administratively, Cambodia is divided into 24 provinces (*khaet*) and 1 autonomous municipality (*krong*), Phnom Penh. Its topography consists mainly of central lowland plains, surrounded by upland and mountainous regions, including the Cardamom Mountains in the southwest, the Dangrek Range to the north, and the Annamite Chain along the eastern frontier.³ The hydrology is dominated by the Mekong River and Tonle Sap Lake, which are vital for agriculture, fisheries, and water supply.⁴ Rivers in the southwestern region, particularly in Kampong Speu and Koh Kong, drain directly into the Gulf of Thailand.⁵

2. The Cambodian Constitution defines subnational boundaries, dividing provinces into districts (*srok*), communes (*khum*), and villages (*phum*), and municipalities into sections (*khan*) and quarters (*sangkat*). The Royal Government of Cambodia has pursued decentralisation since the late 1990s to improve local governance, anchored by the 2000 and 2001 Commune/Sangkat laws and the 2005 Strategic Framework for D&D Reforms. However, deep-seated capacity gaps persist at the subnational level. Local officials frequently lack the technical expertise needed to manage increased autonomy and resource access, creating risks of inefficient resource utilisation and weak policy enforcement.⁶

3. As of January 2025, Cambodia's population was estimated at 17.8 million, with an annual growth rate of 1.19%. Approximately 75% of the population resides in rural areas, where access to basic services remains limited. The average household consists of 4.6 persons. In 2020, the population density was 93 persons per km², lower than in Vietnam (313/km²) and Thailand (137/km²), but higher than in Laos (32/km²).^{7,8}

4. Cambodia ranks in the medium human development category, with a Human Development Index (HDI) of 0.600 in 2022, placing it 148th out of 193 countries. Gender disparities remain significant, as reflected in a Gender Inequality Index (GII) of 0.470, underscoring persistent gaps in income, education, and political participation, particularly among rural women.⁹ The average annual HDI growth rate declined from 2.42% (2000–2010) to 0.85% (2010–2020), indicating a rise in structural challenges. The economy is narrowly based and highly climate-sensitive, with agriculture, tourism, construction, and garment manufacturing forming the main sectors. Agriculture employed 39% of the labour force and contributed 22.85% to GDP in 2021.¹⁰ Tourism, severely impacted by the COVID-19 pandemic, rebounded in 2023 with 5.4 million international visitors, generating over USD 3 billion.¹¹ However, key ecotourism sites such as Te Teuk Pus Hot Spring and Kirirom National Park are increasingly threatened by rising temperatures, water scarcity, and land degradation.¹²

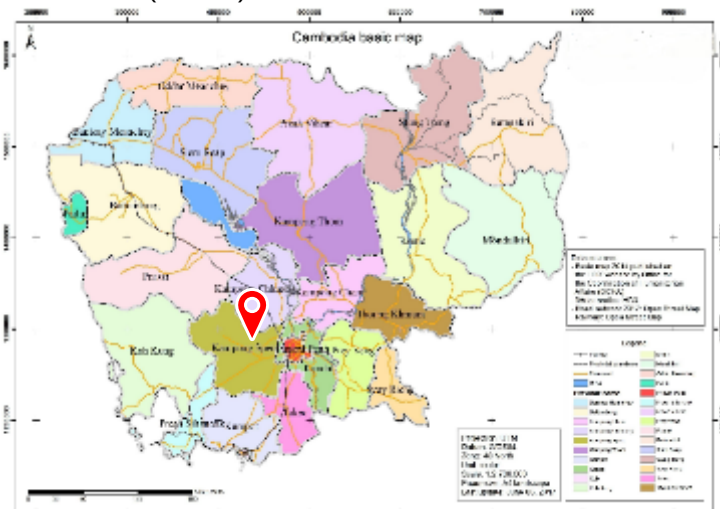


Figure 1.1 Map of Cambodia showing the Project Area

5. Cambodia is among the most climate-vulnerable countries in Southeast Asia, frequently affected by heatwaves, floods, and droughts.¹³ According to the Global Climate Risk Index (CRI), Cambodia ranked 14th among 181 countries in terms of cumulative climate risk from 2000 to 2019.¹⁴ In 2019, it ranked 84th, with considerable losses relative to

¹ Ministry of Environment & United Nations Environment Programme (2009). *Cambodia Environment Outlook*. Kingdom of Cambodia

² CIA World Factbook. (2024). Cambodia – Geography.

³ Ministry of Environment (2022). *Third National Communication to the United Nations Framework Convention on Climate Change*. Kingdom of Cambodia.

⁴ Ministry of Environment (2002). *Initial National Communication under the United Nations Framework Convention on Climate Change*. Kingdom of Cambodia.

⁵ MoWRAM. (2022). *Hydrology and Meteorology Report*.

⁶ Vanny, M., Adnan, M. F., Sok, V., Choeun, K., & Neau, S. (2024). [Local Implementation of Decentralization Policies in Cambodia](#). *Innovative: Journal Of Social Science Research*, 4(4), 5642-5655

⁷ <https://data.worldbank.org/indicator/EN.POP.DNST?locations=KH>

⁸ Ministry of Planning (2019). *Migration in Cambodia: Report of the Cambodian Rural Urban Migration Project (CRUMP)*. Kingdom of Cambodia.

⁹ UNDP GII, 2022

¹⁰ World Bank Climate Portal. (2023). *Climate Data for Cambodia*.

¹¹ Ministry of Tourism. (2023). *Tourism Statistics Report*.

¹² UNWTO. (2023). *Southeast Asia Tourism Recovery Outlook*.

¹³ Yusuf, A. & Francisco, H. (2009). Mapping Analysis. Climate Change Vulnerability Mapping for Southeast Asia. EEPSEA: 2009. http://www.eepsea.org/pub/tr/12324196651Mapping_Report.pdf

¹⁴ Germanwatch (2016). *Global Climate Risk Index 2016: Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2016*. <https://germanwatch.org/sites/germanwatch.org/files/publication/13503.pdf>

GDP (86th) and purchasing power parity (97th).¹⁵ Under a high-emissions scenario (RCP8.5), national temperatures could rise by up to 3.7°C by the 2090s, intensifying the frequency and severity of extreme climate events¹⁶. The SSP3-7.0 scenario projected that the national average number of extremely hot days (with maximum temperatures above 35°C) rise from the 1995–2014 baseline to 60.17 days per year (ranging from 39.43 to 87.01) during 2020–2039, and further increase to 82.87 days (ranging from 46.73 to 124.53) by the middle of the century.¹⁷ Rural communities, especially smallholder farmers, women, and ethnic minorities, are most at risk due to limited adaptive capacity, high dependence on natural resources, and insufficient access to resilient infrastructure. These vulnerabilities directly threaten progress toward key Sustainable Development Goals (SDGs), including SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 5 (Gender Equality), SDG 6 (Clean Water and Sanitation), SDG 13 (Climate Action), and SDG 15 (Life on Land).

6. Recurring droughts, erratic rainfall, and biodiversity loss continue to threaten food security, water availability, gender equity, and environmental protection. Given its high climate exposure, constrained adaptive capacity, and reliance on vulnerable economic sectors, Cambodia faces critical risks from accelerating climate change. Without targeted adaptation interventions, the country's development gains remain at risk, and future progress toward resilience and sustainability may be severely undermined.

2. Climate Change Scenarios – National Context

7. Climate projections indicate that future flood risk and heat stress are expected to intensify in Cambodia. Without adequate adaptation and mitigation measures, climate change could reduce national GDP by approximately 2.5% by 2030 and close to 10% by 2050.¹⁸ Between 1991 and 2014, Cambodia experienced extreme hazards, mainly floods and storms, resulting in over 1,500 fatalities and financial losses exceeding US\$235 million.^{19, 20, 21, 22} A severe drought in 2015–2016 affected 18 of 24 provinces and 1 autonomous municipality, impacting over 2.5 million people.

8. Estimates indicate a loss of US\$100 million in rice production due to droughts associated with the 2019 El Niño, and two-thirds of these losses could have been mitigated with improved policies and investments in climate-resilient infrastructure. The 2023 heatwave, which saw temperatures exceed 42°C, exemplifies the increasing frequency and intensity of extreme heat events.

9. There is a growing risk that severe weather events will continue to impact Cambodia, which will affect the achievement of its national development priority, i.e., to build institutional capacity, improve socio-economic infrastructure, and create a favourable environment to attract both domestic and foreign investments, to ensure a high rate of economic growth and poverty reduction, as outlined in its National Strategic Development Plan 2019 – 2023.²³ Without substantial investments in adaptation and resilience, climate change is expected to hinder economic growth and exacerbate poverty. Studies estimate that nearly two-thirds of climate-induced losses could have been avoided through timely investment in adaptation and climate-resilient infrastructure.

a. Temperature

10. The climate in Cambodia is tropical, characterised by high temperatures and two distinct seasons: (a) the monsoon-driven rainy season from May to October, characterised by south-westerly winds that usher in clouds and moisture, accounting for 80 to 90% of the country's annual precipitation, and (b) the dry season, from November to April, generally cooler, with an average minimum temperature of 17°C in January. Average temperatures across the country are relatively uniform. Cambodia maintains a hot tropical climate with a mean annual temperature of 25°C–27°C,

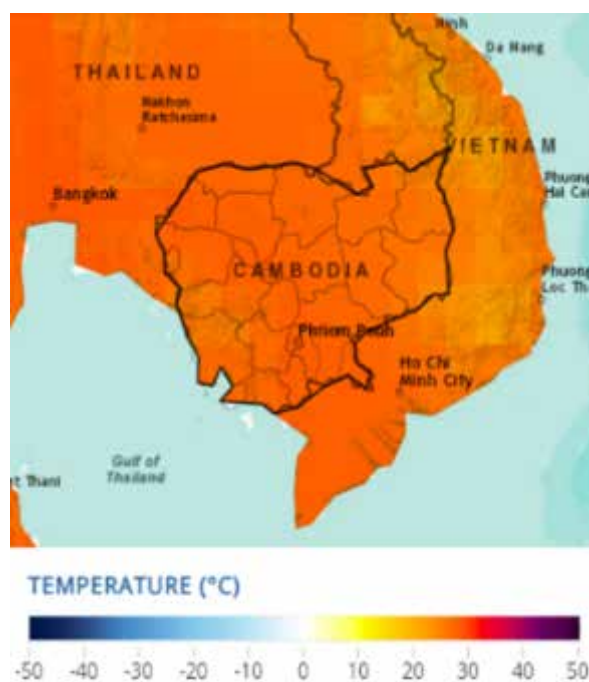


Figure 2.1 Observed climatology of mean-temperature 1991 – 2020 Cambodia

¹⁵ Germanwatch (2021). Global Climate Risk Index 2021: Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2019 and 2000-2019. https://germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_1.pdf

¹⁶ IPCC. (2022). *Summary for Policymakers: Asia*.

¹⁷ World Bank (2024). *Climate Risk Country Profile: Cambodia*

¹⁸ Department of Climate Change (2018). *Modeling of Climate Change Impacts on Growth*. Ministry of Environment, Kingdom of Cambodia. <http://www.camclimate.org.kh/en/policies/ncsd-news/445-445.html>

¹⁹ Global Climate Risk Index (2016). <https://germanwatch.org/fr/download/13503.pdf>

²⁰ UNISDR (2017). Global Risk Assessment 2017. <http://www.preventionweb.net/countries/khm/data/>

²¹ International Disaster Database (2017). EM-DAT 7

²² Index for Risk Management (INFORM) Country Risk profile for Cambodia, 2017. <http://www.inform-index.org/Countries/Country-profiles/iso3/KHM>

²³ Ministry of Planning (2019). *National Strategic Development Plan 2019 – 2023*. Ministry of Planning, Kingdom of Cambodia.

typical daily ranges between 30°C and 35°C, and extreme peaks occasionally reaching 41°C.²⁴ Figure 2.1 illustrates the observed average temperature distribution across Cambodia, confirming the high baseline temperatures in Kampong Speu and surrounding areas. Over the last decades, the mean temperature in Cambodia has increased significantly, a trend projected to continue, with monthly average temperatures rising by 0.013–0.036°C/year through 2099, with higher predictions for locations at low latitudes. The number of ‘hot days’ in the country has increased over the last century by as much as 46 days per year.²⁵ In addition, the reports highlight that increases in annual maximum and minimum temperatures are expected to be larger than the rise in average temperature.

11. In Kampong Speu, the interpolated average temperature ranges from 27 to 28°C, and the maximum temperature ranges from 31 to 33°C (Figure 2.2).²⁶ The lowest and highest average monthly temperatures during the dry season (January–April) are 27.5°C and 34.3°C, while the rainy season has an average of 26.7°C and 31°C, respectively. Under high-emission scenarios (RCP8.5), the province is projected to experience a temperature rise of up to 1.5°C by 2050 and 3.7°C by the 2090s compared to the 1986–2005 baseline. According to ADB, the average temperature of Kampong Speu is projected to rise to 1.5°C by 2050, leading to a higher risk of heat and water stress due to more

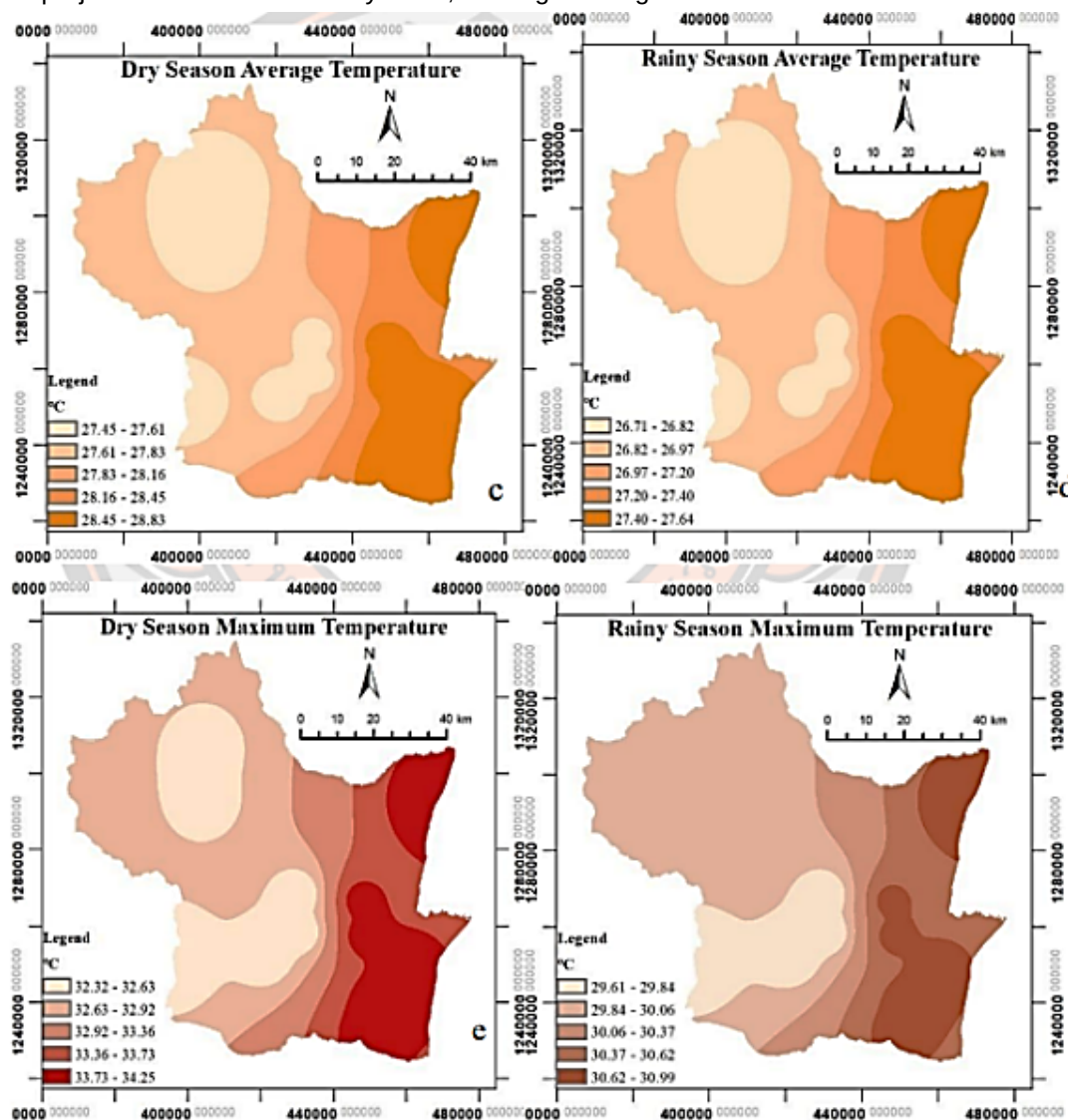


Figure 2.2 Map showing: (a) Dry season average temperature; (b) Rainy season average temperature.

frequent heat waves.²⁷ It is projected that high heat index days will increase from 61.27 during 2020-2039 to 111.30 during 2040-2059.^{28,29}

12. These changes are particularly significant in ecologically sensitive zones, where temperatures have risen by approximately 0.18°C per decade since the 1960s.³⁰ These upland forests now face increased frequency of heatwaves, forest fires, and extended dry periods due to increased temperatures, which accelerate evapotranspiration, reduce soil moisture, and intensify water stress.

²⁴ Cambodia National Climate Report Part 1 (2026, January)

²⁵ Ibid.

²⁶ <https://nuir.lib.nu.ac.th/dspace/bitstream/123456789/5343/3/ChhuonvuochKoem.pdf>

²⁷ Asian Development Bank. (2022, July). Environmental Safeguards Due Diligence Report

²⁸ World Bank. Climate risk country profile: Cambodia

²⁹ Ministry of Environment (2013). Cambodia Climate Change Strategic Plan 2014 – 2023. National Climate Change Committee. Royal Government of Cambodia.

³⁰ CNREC & UN-Habitat (2022): *Climate Risk and Vulnerability Assessment in Cambodia's Mountain Ecosystems*.

b. Rainfall

13. The projected change in precipitation from climate models is more variable than that of temperature. The average projection for annual rainfall from global climate models is for an increase by 2030. A report on Climate Risk and Vulnerability Assessment states that typhoons and tropical storms can bring widespread, intense rainfall and subsequent flooding (Figure 2.3). It is also projected that rainfall events from tropical depressions crossing Cambodia, following typhoons that land in Vietnam, will decrease in frequency. Still, each event is expected to bring heavy rain. Rainfall distribution in Cambodia is highly heterogeneous, driven by orographic effects. The Central Plains receive significantly less rainfall than upland areas, such as the Cardamoms.³¹ UNDP's study predicted the intensity of heavy rainfall events in the wet season between June and October will increase by up to 14.0%, and the Ministry of Environment's projection that a 35.0% increase in rainfall volume may occur from a 2000 baseline.³² In September 2022, the heaviest rainfall in three years caused severe flooding in 14 provinces, affecting approximately 85,000 households, and leading to landslides that necessitated the evacuation of 5,000 families.³³

14. Rainfall in Kampong Speu is highly variable and uneven, depending on the proximity to the Cardamom Mountains and elevation (Figure 2.4). Kampong Speu experiences an annual rainfall range of 1,402–1,937mm. Dry season precipitation is limited to 44–57 mm/month, while the rainy season (May–October) receives 187–266mm/month, with relative humidity ranging from 73% to 79%.³⁴ The timing and intensity of monsoon rains have become increasingly erratic, and this disrupts planting cycles, reduces agricultural productivity, and increases the risk of both flash floods and seasonal droughts. Recent years have seen delayed onset and shortened duration of the rainy season, resulting in crop failures, topsoil erosion, and an increased demand for climate-resilient irrigation infrastructure.

15. Flood events cause significant damage, especially in low-lying areas adjacent to rivers and poorly drained zones. Data shows that 469,827 people were affected by floods from 2000 to 2010. More than 5,500 houses were damaged in Kampong Speu.³⁵ Floods in September–October 2022 affected 85,482 households across 74 districts in 14 provinces, damaging 33,165 homes, 280 schools, 29 health centres, and over 152,000 hectares of agricultural land.³⁶ In October 2023, over 500 families were affected by the floods, resulting in the evacuation of 17 families to safer locations in Kampong Speu Province.³⁷

16. Based on research focusing on physical parameters and remote sensing data, the province has an interpolated annual rainfall range of 1,402 to 1,937 mm. The average monthly relative humidity ranges from 73 to 79%.³⁸ A key point to note is the rainfall differences between the dry and rainy seasons. During the dry season, the average monthly rainfall ranges from 44mm to 57mm, while in the rainy season, it varies between 187mm and 266mm (Figure 2.5).³⁹ According to Mendoza et al. (2014), floods cause more damage but happen less often than droughts and typically

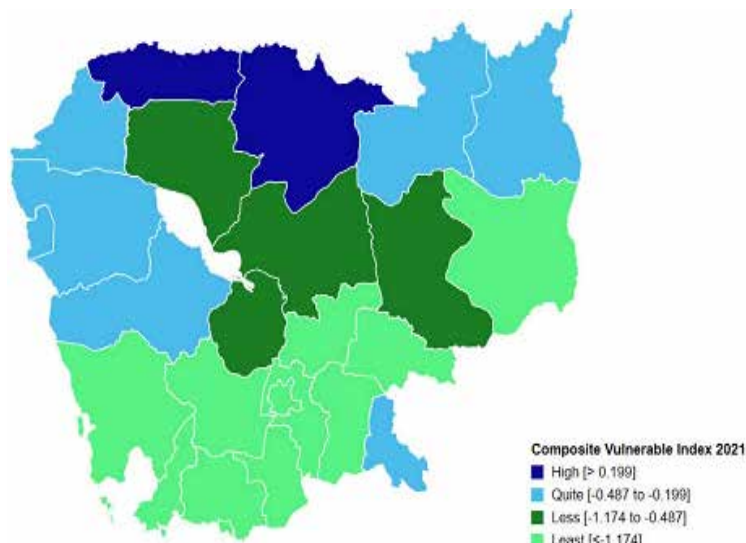


Figure 2.3 National Vulnerability Index

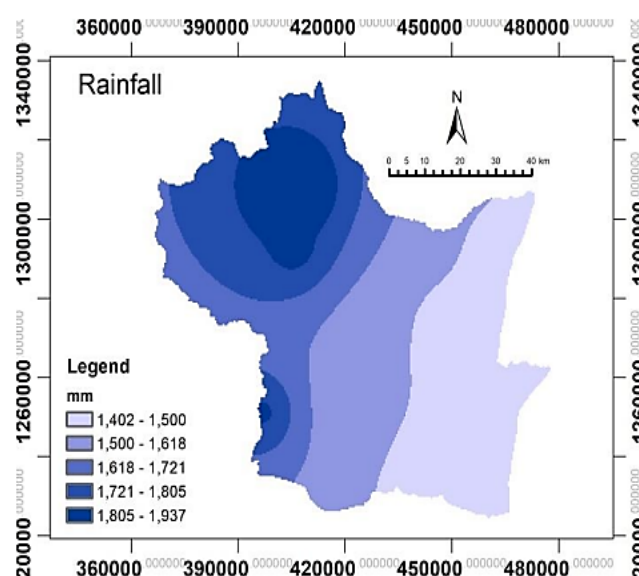


Figure 2.4 Isohyet Map of Average Rainfall over Kampong Speu

³¹ Chhinh Nyda et al. (2022). Quantitative Analysis of Household Vulnerability to Climate Change in Kampong Speu Province, Cambodia

³² Chhinh, N., et al. (2023). The Alteration of Flood Peak Discharge by Land Cover Change in Prek Thnot Watershed, Kampong Speu Province, Cambodia

³³ World Bank (2023) Acting on Climate Change is Key for Cambodia to Achieve its Development Goals

³⁴ MoWRAM. (2022). *Hydrology and Meteorology Report*.

³⁵ NCSD. (2019). Disaster Loss Databases: Temporal Behaviour. Retrieved January 12, 2020, from <http://camdi.ncdm.gov.kh/DesInventar/profletab.jsp>

³⁶ <https://floodlist.com/asia/cambodia-floods-september-october-2022>

³⁷ Kim Yutharo. (2023, October 17). Flood relief efforts continue in Kampong Speu province

³⁸ C. Koem, K. Nusit, and S. Tantane. (2021). Spatial Distribution of Drought Hazard Mapping Based on AHP and GIS in Kampong Speu Province

³⁹ Koem, C. (2020). Seasonal spatial analysis in determination of flash flood and drought hazard areas using AHP and GIS: A case study of Kampong Speu Province in Cambodia

impact only certain areas close to the river.⁴⁰

c. Drought

17. Drought remains one of the most pressing and recurring natural hazards in Cambodia, primarily affecting rural agrarian communities.⁴¹ The high vulnerability of drought is interlinked with poverty and dependency on agriculture, such as the lack of food security, power supply, irrigation facilities, and low productivity.⁴² The agricultural sector, particularly rice production, has suffered substantial losses over multiple decades.

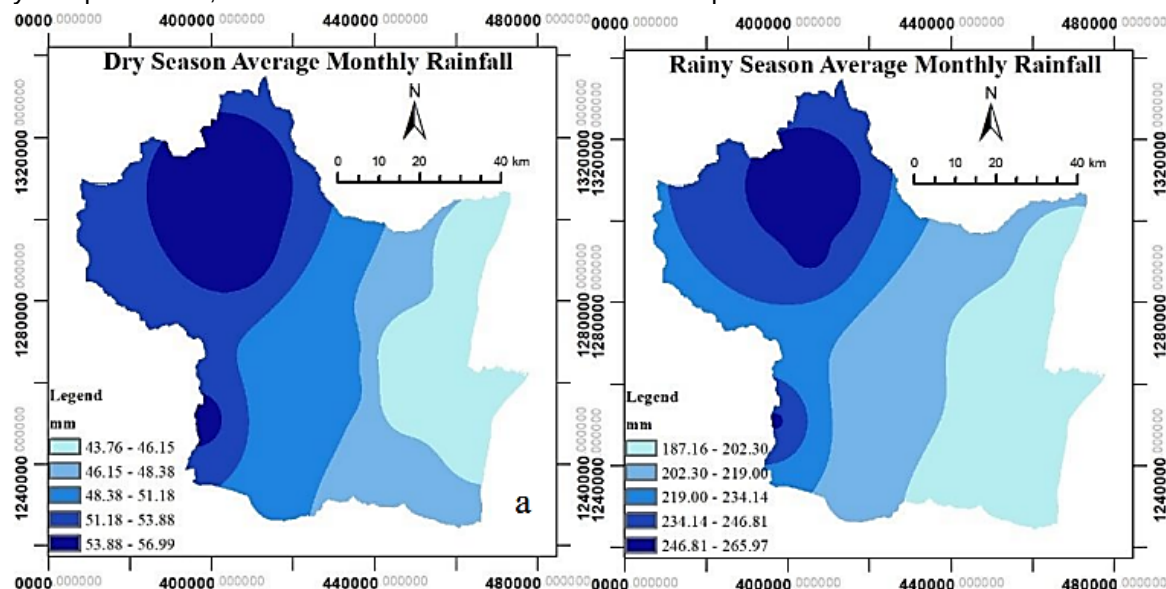


Figure 2.5 Map of Kampong Speu showing: (a) Dry season average monthly rainfall; (b) Rainy season average

Between 1996 and 2000, drought-related rice losses were estimated to be approximately 20% of potential national production. A severe drought in 2004 affected over 300,000 hectares of paddy fields, resulting in an 82% reduction in the expected harvest. Further analysis of the period from 1994 to 2011 shows that droughts damaged more than 1,000 hectares of paddy rice in at least seven out of thirteen years, highlighting the recurring and systemic nature of this hazard.⁴³ The institutional responses to drought have been considerably slower. There is a lack of coordination in responses to flooding despite the magnitude of its impact. This institutional lag underscores the critical need to strengthen local community capacity to manage water resources and respond independently in the early stages of a drought event.⁴⁴ Community-led drought management and preparedness are especially vital, as local populations are typically the first to experience and respond to slow-onset hazards.

18. According to CFE-DM, Kampong Speu Province is one of the most drought-affected provinces in Cambodia due to a delay of rainfall during the rainy season and no or limited rainfall during the dry season (Figure 2.6).^{45, 46} Based on research focusing on physical parameters and remote sensing data, Koem et al. concluded that 26.30% of the province falls into the moderate drought hazard category, and 24.36% in the very high category, 14.64% in the high category, 20.88% in the low category, and 13.82% in the very low category. The study also categorised some areas within Basedth, Samraong Tong, Odongk, and Kong Pisei Districts with a high drought hazard level. On the other hand, 13.55% of the total area of Aoral District was categorised as very low

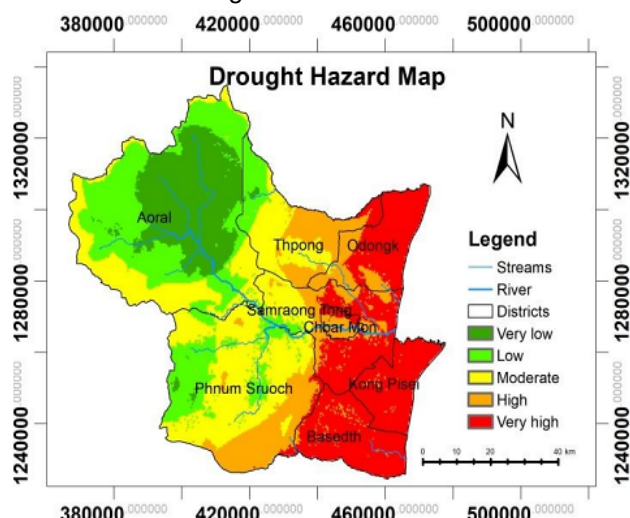


Figure 2.6 Drought Hazard Map of Kampong Speu Province

⁴⁰ Mendoza, M.E., et al. (2014). Assessing Vulnerability to Climate Change Impacts in Cambodia, the Philippines and Vietnam: An Analysis at the Commune and Household Level

⁴¹ Chhinh, N., & Millington, A. (2015). *Drought monitoring for rice production in Cambodia*. *Climate*, 3(4), 792–811.

⁴² Nguyen, H., et al. (2009). Adaptive drought risk reduction in Cambodia: Reality, perceptions, and strategies.

⁴³ Ibid

⁴⁴ Pereira, J. J., Pulhin, J., Chhinh, N., Trong, T. D., & Satari, S. K. (2019). *Appraising slow onset hazards for loss and damage: Case studies in Southeast Asia*. *APN Science Bulletin*, 9(1), 45–51.

⁴⁵ CFE-DM. 2017. *Cambodia Disaster Management Handbook*. Phnom Penh: Center for Excellence in Disaster Management & Humanitarian Assistance.

⁴⁶ Mendoza, M.E., et al. (2014). Assessing Vulnerability to Climate Change Impacts in Cambodia, the Philippines and Vietnam: An Analysis at the Commune and Household Level

and 12.97% as a low drought hazard level.⁴⁷

19. During the El Niño events in 2015 and 2016, there were widespread crop failures, food insecurity, and significant economic losses in the agricultural sector.⁴⁸ Water scarcity also exacerbates fire hazards, particularly in forested zones, where dry vegetation and high temperatures fuel wildfire outbreaks. Prolonged dry spells, when combined with delayed monsoons, result in compound risks that stress water resources, reduce yields, and heighten forest fire vulnerability, particularly in upland areas.

3. Project Area

a. Kampong Speu Province

20. Kampong Speu Province, situated between 11.6150°N and 104.3792°E, occupies a strategic location in central Cambodia, approximately 40 km west of the capital Phnom Penh (Figure 3.1). It spans a total land area of 6,969.63 km² and ranges in elevation from 3 meters to 1,814 meters above sea level, reflecting its varied topographical landscape from lowland plains to mountainous upland.^{49,50} Administratively, Kampong Speu consists of seven districts (Basedth, Kong Pisei, Aoral, Odongk, Phnum Sruoch, Samraong Tong, and Thpong), one municipality (Krong Chbar Mon), 82 communes, five Sangkats, and 1,379 villages. As of 2019, the province had a population of 877,523, including 452,421 females.⁵¹

21. The socioeconomic profile of the province is marked by a significant reliance on agriculture, which employs approximately 60.2% of the population. In comparison, 39.5% work in the service sector, and only 0.3% are engaged in handicrafts. Tourism is an emerging economic sector, with the province attracting 617,576 visitors in 2020 to destinations such as Ampe Phnom, Chambak Waterfall, V Kirirom Pine Resort, and Te Teuk Pus Hot Springs.⁵² The poverty rate in Kampong Speu was 20.6% as of 2018, with a considerable portion of the population living near or below the national poverty line.⁵³ Sensitivity index analysis indicates that households engaged in rice farming, or a combination of rice and livestock, are highly vulnerable to climate change, with sensitivity scores of 0.57 and 0.53, respectively, compared to 0.33 for those in non-agricultural occupations.⁵⁴ The province includes 118,029.3 hectares of paddy fields and 3,084.3 hectares of other agricultural land, while forested, mountainous, and water resource zones cover 522,679 hectares.⁵⁵

22. The Centre for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) identifies Kampong Speu as one of the most drought-affected provinces due to delayed wet-season rainfall and minimal water availability in the dry season.^{56,57} From 1999 to 2006, the province faced severe climate events almost annually, particularly in river-adjacent areas where flash floods were especially destructive.^{58,59}

b. Strategic Nodes: Te Teuk Pus, Aoral, and Phnum Sruoch Districts

23. The project will target the following high-priority areas within Kampong Speu Province: **Te Teuk Pus, Aoral and Phnum Sruoch**. These areas represent both ecological importance and elevated vulnerability. According to the most recent data, the Aoral and Phnum Sruoch districts have a combined population of 167,222 residents, comprising 85,594 females and 81,628 males.⁶⁰

i. Te Teuk Pus: Geothermal Significance and Challenges

24. Te Teuk Pus in Trapeang Chour and Ta Sal Communes of Aoral District is a rare geothermal hot spring site in Cambodia, and it is the only one in the country, renowned for its natural beauty, therapeutic mineral waters, and cultural significance to the local community. The area is situated in the foothills of the Aoral Mountain Range, Cambodia's highest-elevation region, which contributes to a unique microclimate and hydrological regime. The name "Te Teuk Pus" means "boiling water," referring to the site's naturally heated springs. The area features six rare hot springs with a temperature of 70°C, spanning an 80 m² water surface within a 57-hectare natural area filled with tall grass, reeds, and red sandstone.⁶¹ The geothermal activity is associated with the area's underlying tectonic and hydrothermal systems, which remain under-researched but hold significant ecological and hydrological interest. The semi-evergreen forests and lowland hills offer environmental value with a wide range of native species and medicinal plants. However, unregulated visits, poor waste management, and sedimentation have degraded its condition. The environmental function of Te Teuk Pus can be rehabilitated through nature-based solutions and climate-resilient infrastructure, which will further support sustainable tourism and enhance the local livelihoods of the indigenous Suoy people.

⁴⁷ C. Koem, K. Nusit, and S. Tantanee. (2021). *Spatial Distribution of Drought Hazard Mapping Based on AHP and GIS in Kampong Speu Province*

⁴⁸ *Ibid.*

⁴⁹ Kampong Speu administrative website (2018)

⁵⁰ C. Koem, K. Nusit, and S. Tantanee. (2021). *Spatial Distribution of Drought Hazard Mapping Based on AHP and GIS in Kampong Speu Province*

⁵¹ National Institute of Statistics (2000). *General Population Census of Cambodia, 1998: Village Gazetteer*. NIS, Kingdom of Cambodia.

⁵² Provincial Tourism Department, 2021

⁵³ World Bank Climate Portal. (2023). *Climate Data for Cambodia*.

⁵⁴ Chhinh Nyda et al. (2022). Quantitative Analysis of Household Vulnerability to Climate Change in Kampong Speu Province, Cambodia

⁵⁵ C. Koem, K. Nusit, and S. Tantanee. (2021). *Spatial Distribution of Drought Hazard Mapping Based on AHP and GIS in Kampong Speu Province*

⁵⁶ *Ibid.*

⁵⁷ Cited in Veasna, K. (2022). Climate Change Resilience and Food Security through Water Management in the Basedth district of Kampong Speu province

⁵⁸ Chhinh Nyda et al. (2022). Quantitative Analysis of Household Vulnerability to Climate Change in Kampong Speu Province, Cambodia

⁵⁹ Mendoza, et al. (2014). Assessing Vulnerability to Climate Change Impacts in Cambodia, the Philippines and Vietnam: An Analysis at the Commune and Household Level

⁶⁰ National Institute of Statistics (2000). *General Population Census of Cambodia, 1998: Village Gazetteer*. NIS, Kingdom of Cambodia.

⁶¹ Phak Seangly (2025, March 25). Kampong Speu geothermal pools set for formal ecotourism status

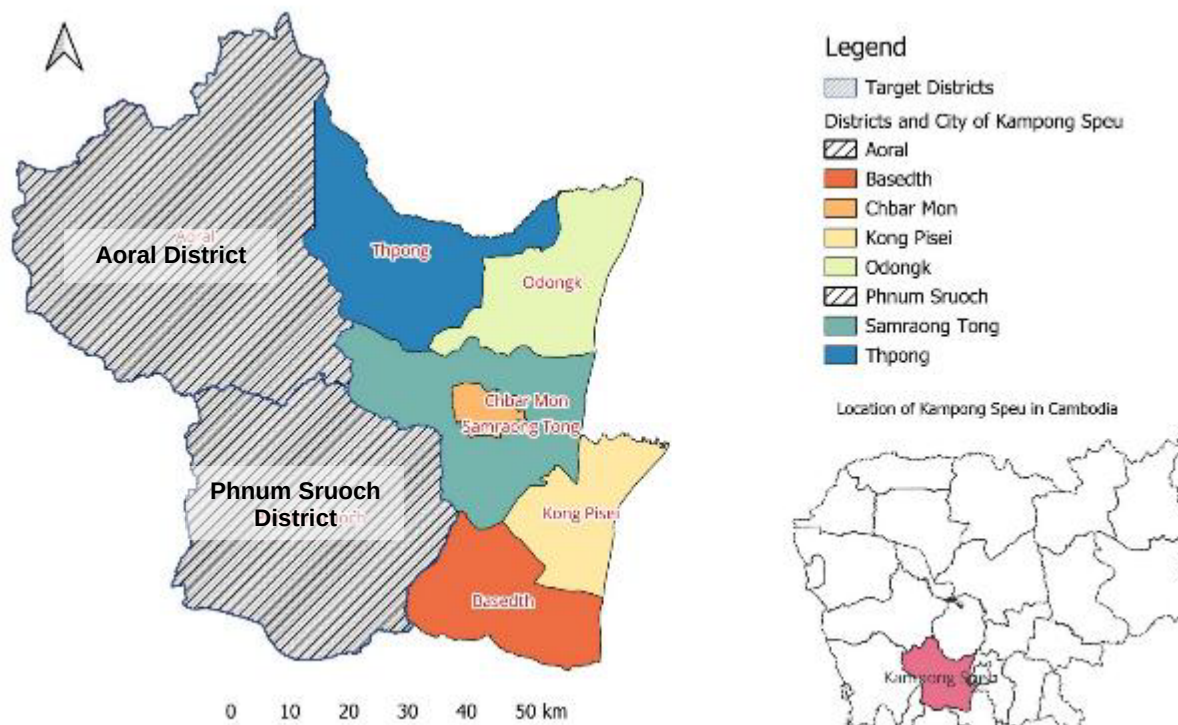


Figure 3.1 Map of target districts in Kampong Speu Province (left) and Cambodia (Right)

ii. Aoral District: Higniand Conservation Frontier

25. Aoral District, named after Phnom Aoral, Cambodia's highest peak at 1,813 meters, is in the northwestern part of Kampong Speu Province. The district spans a land area of 2,373 km² and comprises five communes and 72 villages. As of 2024, 10,459 households with 43,591 people, including 22,432 females, live in Aoral District. 15.5% of the households are female-headed, and 624 residents have disabilities. 19.38% of people live below the poverty line in 2024. Only 2,269 households used clean water. Nearly 7,567 households have proper latrines, and only 0.2% accessed the regular solid waste management collection service in 2022.

26. It is mainly rural and forested, comprising part of the Central Cardamom Protected Forest and the Aoral Wildlife Sanctuary, two key conservation zones of national and regional importance. The district plays a crucial role in biodiversity conservation, watershed protection, and climate regulation for lowland areas. Communities in Aoral are predominantly dependent on natural resources, with livelihoods centred around subsistence agriculture, non-timber forest product collection, and small-scale tourism. 75.2% of the population works in agriculture, 0.6% in handicrafts, and 24.4% in services.

iii. Phnum Sruoch District: Transitional Zone at Risk

27. Phnum Sruoch District is located southwest of Aoral. It is a transitional ecological zone where the Cardamom foothills meet the agricultural plains. Therefore, the district features a mix of lowland forest, rolling hills, and farmland, serving as an important biodiversity corridor. The district spans a land area of 171,034 hectares and comprises 13 communes and 149 villages. Several villages are located near degraded forests and exposed slopes, where soil erosion and declining water quality pose growing risks. As of 2024, 27,184 households with 115,050 people, including 58,777 females, live in Phnum Sruoch. 15.5% of households are headed by females, and 811 residents have disabilities. 6.75% of households live below the poverty line in 2024. Only 26.4% of households are connected to piped water, while 68.1% use a well, and 5.5% use rainwater harvesting as a water resource. Nearly 40% of households lack proper latrines, and only 0.8% have access to the regular solid waste management collection service.

28. The district's communities rely on rain-fed agriculture, livestock, and forest-based activities, including resin tapping and bamboo harvesting. 71.4% of residents engage in the agricultural sector, 3% in the handicraft sector, and 28.61% in the service sector. The district has lowlands with fertile soil in the northern part and mountainous areas, including Kirirom and Pich Nil mountains, in the western part. Several canals and rivers also exist in the district, such as Sva Slab River, Sre Khong River, and Prek Thnoat River. These water bodies serve as sources of irrigation for agriculture, but they experience water retention issues, particularly during the dry season. The district also has natural lakes, but they lose fish species and habitat due to illegal equipment use and dry up during the dry season. Like Aoral, Phnum Sruoch is prone to seasonal droughts, irregular rainfall patterns, and forest fires. The lack of fire buffer zones and irrigation infrastructure exacerbates vulnerability. The common natural disasters in the district are floods, droughts, storms, and lightning strikes. In 2024, 617 households were affected by floods.

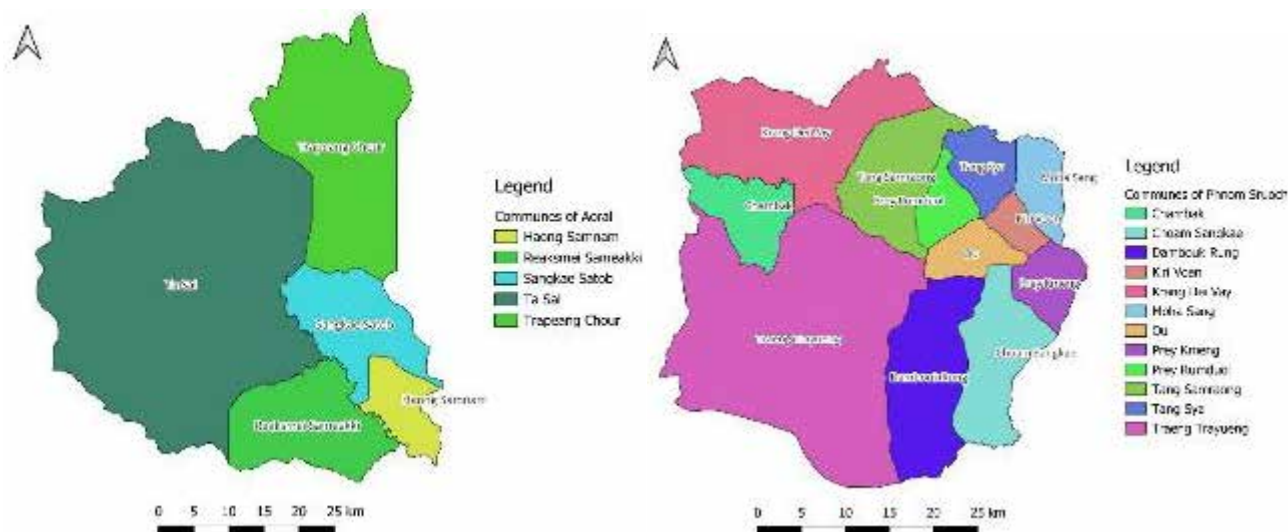


Figure 3.2 Map of Aoral District (left) and Phnum Sruoch District (right)

29. Kirirom National Park (Preah Suramarit-Kossamak Kirirom) in Phnum Sruoch District is Cambodia's first national park, covering 283.75 km² in the Cardamom Mountains. It serves as a vital upland watershed and biodiversity hotspot, home to endemic flora and fauna. The park supports around 14,433 people in nearby communes, such as Chambak and Traeng Trayoueng, who depend on rain-fed farming and non-timber forest products. These communities face high poverty, limited infrastructure, and scarce income options.^{62,63} Women play a crucial role in food production and forest product collection, yet they face significant barriers to land ownership and access to training. Youth migration to Phnom Penh and Thailand for seasonal work is widespread, adding burdens to women-headed households.⁶⁴ Climate change has intensified flash floods, erosion, and ecosystem degradation, weakening vital services like water regulation and biodiversity protection. Land encroachment, unsustainable use, and poor enforcement further exacerbate these threats. Kirirom attracts 50,000–80,000 tourists annually (2019 pre-COVID estimates), but hazards and weak waste management jeopardise tourism and conservation. Despite limited enforcement, the Chambak Ecotourism Site offers a model for nature-based solutions. The park's management plan (2018) focuses on conservation, ecotourism, and community-based adaptation, with forest land governed by the Ministry of Environment.⁶⁵

4. Socioeconomic Context and Climate Vulnerability

30. According to World Bank Cambodia's GDP was estimated at US\$26.5 billion in 2021. However, climate change poses a significant threat to long-term economic performance, with projections indicating a potential 2.5% reduction in GDP by 2030 and nearly 10% by 2050. Although the national economy has experienced steady growth, per capita income remains low at US\$1,730, which is among the lowest in the region. Economic activity remains concentrated in a few climate-sensitive sectors, particularly textiles, tourism, and agriculture. Agriculture remains the primary source of livelihood for the rural population and is the most exposed to climate shocks. The service sector, mainly made up of informal trade and catering services, provides limited job security and weak protection against climate-related disruptions.

31. Despite notable poverty reduction over the past two decades, with incidence falling from 60% in 2000 to 13.5% in 2015, a significant share of Cambodians remain just above the poverty line and are highly vulnerable to falling back into poverty due to climate and economic shocks.⁶⁶ Many rural households lack the financial reserves, land tenure security, or diversified income needed to buffer such shocks. In 2022, the national poverty line was updated to 10,951 riels per person per day (US\$2.70), under which 18% of the population is now considered poor. Rural poverty remains highest at 22.8%, compared to 12.6% in other urban areas and just 4.2% in Phnom Penh. While official unemployment rates remain low (around 2%), these figures mask widespread underemployment, informality, and subsistence-level livelihoods in rural areas.⁶⁷ These conditions translate to lower household savings, limited access to insurance or credit, and heightened dependence on climate-sensitive activities such as rainfed farming and daily wage labour. As climate extremes become more frequent, households already facing socioeconomic precarity are often forced to sell productive assets, withdraw children from school, or migrate—choices that further erode long-term resilience.

32. In Kampong Speu Province, where the proposed project is located, the Human Development Index (HDI) is

⁶² ICEM (2003). *Cambodia National Biodiversity Strategy and Action Plan: Protected Area Review for the Asian Development Bank*. International Centre for Environmental Management. Available at: https://icem.com.au/documents/biodiversity/pad/cambodia_field.pdf

⁶³ ICEM. (2003). *Field Study Cambodia: Biodiversity and Protected Areas*.

⁶⁴ Open Development Cambodia. (2022). *Kirirom National Park Profile*. <https://opendevdevelopmentcambodia.net>

⁶⁵ *Ibid.*

⁶⁶ Asian Development Bank (2021). *Employment and Poverty Impact Assessment*. <https://www.adb.org/sites/default/files/linked-documents/54195-001-sd-03.pdf>

⁶⁷ Business (2022). *Joblessness in Cambodia is to stay around 2% in 2023*. <https://www.khmertimeskh.com/501169894/joblessness-in-cambodia-to-stay-around-2-in-2023/>

relatively low at 0.499.⁶⁸ Around 60.2% of residents⁶⁹ rely on agriculture (including rice cultivation and palm sugar production), while 39.5% work in the informal service sector. The International Labour Organization (ILO) warns that increasing heat stress and climate-driven disruption could render large areas of Cambodia less productive or even uninhabitable, prompting climate-induced migration and accelerating the expansion of insecure and informal employment.⁷⁰

33. In the project area, tourism is emerging as an alternative livelihood, with 50,000–80,000 mostly domestic visitors annually drawn to forest trails, waterfalls, and campsites. However, basic infrastructure and waste management remain inadequate, and climate risks such as heatwaves, wildfires, and floods threaten access, safety, and income generation. The degradation of ecotourism assets not only limits economic opportunity but also undermines conservation financing and ecosystem health. Nearby communities, such as Chambak and Traeng Trayueng—are highly dependent on subsistence farming, livestock, and forest-based livelihoods. Approximately 14,433 people (2,952 households) live adjacent to Kirirom National Park. These households often lack access to safe water, energy, and market connectivity.

34. Efforts to build local resilience, such as through Community Protected Areas (CPAs), have been hampered by weak institutional capacity, insufficient funding, and low enforcement of resource governance. Without targeted investments in climate-resilient infrastructure, diversified livelihoods, and inclusive governance, the convergence of socio-economic precarity and environmental stressors will continue to push vulnerable communities deeper into poverty and environmental degradation.⁷¹

5. Gender Context

35. Cambodia ranked 11th out of 19 countries in East Asia and the Pacific and 98th globally out of 156 countries in the 2022 Global Gender Gap Index published by the World Economic Forum, with an overall score of 0.690.⁷² Women in Cambodia have a higher life expectancy than men, at 72.3 years versus 66.8 years, respectively (SDG 3). Maternal and child health indicators have shown significant improvement over the past two decades. Neonatal mortality declined from 37 to 8 per 1,000 live births, and under-five mortality dropped from 124 to 16 per 1,000 live births, meeting the Cambodian SDG targets eight years ahead of schedule.⁷³ Maternal mortality fell from 437 per 100,000 live births in 2000 to 170 in 2014, and further to 160 in 2017.^{74,75} Access to maternal health care has significantly improved, and 99% of women now give birth with the assistance of a skilled health provider, compared to just over one-third in 2000.⁷⁶ However, adolescent fertility remains a concern because in 2020, 46 out of every 1,000 girls aged 15–19 gave birth, a rate largely unchanged since 2010.⁷⁷

36. Cambodia has made notable strides in improving access to education and reducing gender disparity. Contributing factors include scholarships for low-income students (particularly girls), expanded access to subnational schools, and the construction of girls' dormitories. Since 2007, preschool enrolment has doubled, and primary school enrolment rose from 82% in 1997 to over 97% in 2017/18.⁷⁸ As of 2021, 63% of girls and 52.5% of boys completed lower secondary education.⁷⁹ However, significant gaps persist in secondary and adult education. According to the Human Development Report (SDG 4.4), only 18.3% of females complete secondary education, compared to 31.7% of males. The mean years of schooling are 5.9 years for males and 4.4 years for females. Adult literacy also remains lower among women (79.8%) than among men (88.4%, 2021).⁸⁰

37. Cambodia has made progress in expanding women's economic participation. In 2022, it ranked 61st out of 146 countries in economic participation and opportunity, a significant improvement from 77th in 2014 (out of 142 countries). In the Global Gender Gap Index, Cambodia's score increased from 0.684 in 2021 to 0.690 in 2022, resulting in an improved ranking from 103rd to 98th. Labour force participation remains relatively high: 69.6% for females and 82.1% for males (2022).⁸¹ Despite this progress, women, especially in rural areas, remain disproportionately vulnerable to the impacts of climate change and extreme weather events. This is primarily due to structural inequalities, such as unequal access to resources, power, and decision-making, as well as entrenched patriarchal norms.⁸²

⁶⁸<https://www.kampongspeu.gov.kh/%E1%9E%80%E1%9F%92%E1%9E%9A%E1%9E%94%E1%9E%81%E1%9F%90%E1%9E%8E%E1%9F%92%E1%9E%8C%E1%9E%A2%E1%9E%97%E1%9E%B7%E1%9E%9C%E1%9E%8C%E1%9F%92%E1%9E%8D%E1%9E%93%E1%9F%8D%E1%9E%81%E1%9F%81%E1%9E%8F%E1%9F%92>

⁶⁹ Ibid.

⁷⁰ International Labour Organisation (2018). *The employment impact of climate change adaptation*. Input Document for the G20 Climate, Sustainability Working Group. ILO, Geneva.

⁷¹ Open Development Cambodia. (2022). *Kirirom National Park Profile*. <https://opendevdevelopmentcambodia.net>

⁷² World Economic Forum (2022) Global Gender Gap Report 2022

⁷³ <https://www.who.int/cambodia/news/detail/07-04-2023-cambodia-celebrates-significant-health-achievements-on-the-75th-anniversary-of-who>

⁷⁴ <https://genderdata.worldbank.org/countries/cambodia/#:~:text=In%20Cambodia%2C%20the%20labor%20force,labor%20force%20participation%20has%20decreased.>

⁷⁵ UNDP (2022) Human Development Report 2021-22, p 293

⁷⁶ <https://www.who.int/cambodia/news/detail/07-04-2023-cambodia-celebrates-significant-health-achievements-on-the-75th-anniversary-of-who>

⁷⁷ <https://genderdata.worldbank.org/countries/cambodia/>

⁷⁸ <https://www.unicef.org/cambodia/education>

⁷⁹ <https://genderdata.worldbank.org/countries/cambodia/>

⁸⁰ UNDP 2022 Human Development Report 2021-2022

⁸¹ <https://genderdata.worldbank.org/countries/cambodia/>

⁸² PRB (2012). *Women more vulnerable than men to climate change*. <https://www.prb.org/resources/women-more-vulnerable-than-men-to-climate-change/>

38. In Kampong Speu Province, women comprise 51.8% of the population (2019)⁸³, and 25.1% of households were female-headed as of 2004.⁸⁴ Traditional gender roles mean that women are often responsible for domestic chores, caregiving, child education, water collection, small-scale farming, and livestock rearing while also contributing to household income. Although their responsibilities span a broader range than men's, social and economic barriers limit women's autonomy. A 2019 survey found that 34% of women in Kampong Speu reported not being involved in decisions about major household purchases.⁸⁵ Furthermore, 19.1% of women aged 15 - 49 reported having experienced emotional, physical, or sexual violence by a current or former intimate partner.⁸⁶ *"Women work hard and rarely complain. Women at home do everything—raising children, cooking, cleaning, and running businesses—all from morning until night. Yet, their work often goes unrecognised."* — Long San, 66-year-old small business owner, Kampong Speu⁸⁷



Figure 6.1 Land Degradation Hotspots in Cambodia

39. During climate-related shocks such as droughts and floods, gender disparities are significantly amplified. Men typically have greater economic independence and have more reliable access to savings or financial capital, which enables them to invest in alternative income-generating activities during times of crisis. In contrast, women often prioritise the nutritional and health needs of their families over their own, especially during periods of food insecurity.⁸⁸ Women, particularly those who are pregnant, older persons, or caring for young children, are among the most severely affected. They face elevated risks of malnutrition, anemia, dysentery, sexually transmitted infections, and childbirth complications. In many instances, women have been forced to give birth in flooded health facilities or at home without adequate medical assistance, exposing them to life-threatening conditions.^{89,90} These intersecting gender-based vulnerabilities underscore the urgent need to embed gender equality into adaptation planning—through targeted investments that enhance women’s decision-making power, secure their access to resources and services, and ensure that climate-resilient infrastructure, livelihoods, and early warning systems are inclusive and responsive to their needs.

6. Environmental Context and Impact of Climate Change

40. Cambodia is facing an escalating climate crisis, characterised by longer dry seasons, erratic rainfall, rising temperatures, and more frequent extreme events. These changes are destabilising both natural ecosystems and human livelihoods, especially in upland regions like Aoral and Phnum Sruoch Districts of Kampong Speu, where communities are heavily reliant on subsistence agriculture and forest-based resources. With limited access to resilient infrastructure, financial services, or diversified income, households face growing exposure to climate-induced hardship. Environmental degradation, such as deforestation, unsustainable land use, and pollution, further amplifies these risks by weakening natural buffers and ecosystem services. Forest fires, pest outbreaks, and drying springs are becoming more common, while biodiversity loss and habitat fragmentation threaten long-term sustainability. In the absence of coordinated adaptation, these stressors are likely to deepen poverty, food insecurity, and social inequality.

Table 1 Land Use and Land Cover Change in Kampong Speu Province (2003-2014)

No	LULC name	JICA 2002	LULC 2003	LULC 2014	A
1	Agriculture	26.5	35.0	54.6	
2	Forest cover	49.9	49.2	23.1	
3	Grasslands	6.5	15.5	16.8	
4	Shrublands	16.6			
5	Soils and rocks	0.2	n/a	n/a	
6	Urban, built-up area	0.1	n/a	n/a	
7	Water	0.3	0.3	4.1	
8	Cloud	n/a	n/a	0.5	
9	Cloud shadow	n/a	n/a	0.8	

Source: Chhinh, N., Rath, S., & Choeun, K. (2023)

a. Land Degradation and Deforestation

⁸³ General Population Census 2019
⁸⁴ National Institute of Statistics (NIS), Cambodia (2004). Cambodia Inter-Censal Population Survey 2004 – Kampong Speu Province
⁸⁵ UNDP. (2024, April). LEAVE NO ONE BEHIND Analysis in Cambodia
⁸⁶ National Institute of Statistics (NIS) [Cambodia], Ministry of Health (MoH) [Cambodia], and ICF. 2023. Cambodia Demographic and Health Survey 2021–22 Final Report. Phnom Penh, Cambodia, and Rockville, Maryland, USA: NIS, MoH, and ICF.
⁸⁷ United National in Cambodia (2025, March 7). The Women Who Lift Up Cambodia: International Women's Day 2025 – Rights, Equality, Empowerment for All Women and Girls
⁸⁸ PRB (2012). Women more vulnerable than men to climate change. <https://www.prb.org/resources/women-more-vulnerable-than-men-to-climate-change/>
⁸⁹ Algur, K. D., Patel, S. K., & Chauhan, S. (2021). The impact of drought on the health and livelihoods of women and children in India: A systematic review. Children and Youth Services Review, 122, 105909.
⁹⁰ Chhinh Nyda et al. (2015). Quantitative Analysis of Household Vulnerability to Climate Change in Kampong Speu Province, Cambodia

41. The rate of forest loss in Cambodia has been among the highest globally, with deforestation occurring even within areas designated as legally protected (Figure 6.1). In Kampong Speu, key biodiversity corridors have experienced significant canopy loss, which disrupts hydrological cycles and reduces forest carbon storage. Encroachment, shifting cultivation, and weak enforcement have strained conservation efforts. Land degradation compromises not only ecological functions such as erosion control and water regulation but also local resilience to climate shocks.

42. For instance, land-use conversion reduced the province's forest cover from roughly 60% in the early 1960s (National Institute of Statistics, 2008) to 30% in 2013 (Open Development Cambodia, n.d.). This deforestation is linked to six key developments: (i) agricultural expansion during the Khmer Rouge regime; (ii) military defoliation tactics during regional civil wars; (iii) timber logging to finance political factions; (iv) unregulated clearing by elites; (v) aggressive natural resource exploitation for economic growth; and (vi) the expansion of Economic Land Concessions (ELCs).⁹¹

43. Approximately 13% of rural households in Cambodia are still landless. As family landholdings are being divided into smaller parcels, the average size of agricultural holdings is relatively small, only one ha per household. Rural change in Cambodia manifests itself in rapidly declining land availability for the smallholder sector, posing the question of how farmers may be able to deal with limited access to land. Therefore, land has become a significant issue nationally,⁹² not merely in Kampong Speu Province.

44. Although it varies year to year, Cambodia is one of countries that has the highest number of detected **fires** per area in Southeast Asia, with a statistically significant increase and the second-highest recurrence rate (repeated fires in the same area) in Southeast Asia.⁹³ Pereira, et.al. (2019) also pointed out that the national and local authorities' response to the drought has been comparatively delayed compared to the steps taken to address floods, even though drought calls for efficient water management.⁹⁴ It indicates the importance of the community's capacity building to react efficiently while awaiting outside assistance.

b. Biodiversity Loss

45. Cambodia's unique flora and fauna are increasingly under threat due to changing climate conditions. Shifts in temperature and rainfall disrupt the habitats and migration patterns of species. Endemic species, such as the clouded leopard and pangolin, face a heightened risk of extinction due to habitat fragmentation and poaching. In the Prek Thnot watershed, forest cover has halved over the past four decades, affecting the viability of ecosystem-dependent livelihoods and the sustainability of the region's ecotourism offerings.

d. Economy

46. Cambodia's economy, which is anchored in agriculture, tourism, construction, and garment manufacturing, is vulnerable to climate disruptions. Agriculture, which sustains nearly 40% of the labour force, is increasingly threatened by unpredictable weather, delayed planting seasons, and water scarcity. As a result, productivity fluctuates and rural incomes remain volatile. Tourism, a growing contributor to GDP, is vulnerable to seasonal weather extremes, infrastructure damage, and ecosystem degradation—factors that deter visitation and reduce local revenue. Without scaled-up adaptation, the combined economic costs of reduced productivity, asset damage, and health impacts could result in GDP losses nearing 10% by 2050.⁹⁵ Worker output, especially in outdoor sectors, is also projected to decline due to rising heat stress.

e. Food Security Impacts

47. Over the ages, communities have adjusted to the natural unpredictability and changing of the climate. However, they are unable to cope with the harsh occurrences and quick changes in the climate. Vulnerable communities in the provinces of Kampong Speu struggle to live as temperatures rise and extreme weather events become increasingly frequent and severe. As previously stated, Cambodia's economy and population are extremely susceptible to climate unpredictability and change. Food security is already a significant concern in Cambodia, where 25% of the population suffered from undernourishment in 2004 – 2005. This percentage was higher compared to nearby Southeast Asian nations.⁹⁶ In Cambodia, around 75% of the population lives in rural areas.⁹⁷ With 38.85% of the nation's 8.9 million workers and roughly 22.85% of GDP in 2021, agriculture continues to be the main source of employment for rural residents.⁹⁸ ⁹⁹ Two-thirds of Cambodians are economically dependent on agriculture, according to the Food and

⁹¹ Chhinh, N., Rath, S., & Choeun, K. (2023). [The alteration of flood peak discharge by land cover change in Prek Thnot watershed, Kampong Speu Province, Cambodia](#). *Insight: Cambodia Journal of Basic and Applied Research*, 5(2), 22-33.

⁹² Ministry of Land Management Urban Planning and Construction & World Bank (2002). Cambodia Land Management and Administration Project. Ministry of Land Management Urban Planning and Construction & World Bank, Kingdom of Cambodia.

⁹³ Vadrevu, K. P., Lasko, K., Giglio, L., Schroeder, W., Biswas, S., & Justice, C. (2019). Trends in vegetation fires in south and southeast Asian countries. *Scientific reports*, 9(1), 7422.

⁹⁴ Pereira, J. J., Pulhin, J., Chhinh, N., Trong, T. D., & Satari, S. K. (2019). [Appraising slow onset hazards for loss and damage: Case studies in Southeast Asia](#). *APN Sci Bull*, 9(1), 45-51.

⁹⁵ The 2023 heatwave recorded temperatures exceeding 42°C, overwhelming health systems and placing outdoor workers in upland zones like Kirirom at elevated risk (WHO & MoH, 2023).

⁹⁶ Shicavone, A. (2010). "Trade and climate change implications for food security in mainland Southeast Asia." International Institute for Sustainable Development.

⁹⁷ World Bank (2009). World Development Indicators.

⁹⁸ <https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=KH>

⁹⁹ <https://www.statista.com/statistics/438728/share-of-economic-sectors-in-the-gdp-in-cambodia/#:~:text=This%20statistic%20shows%20the%20share,sector%20contributed%20about%2034.18%20percent.>

Agriculture Organisation.¹⁰⁰ In addition, the majority of farmers are poorly equipped to adapt to climate change.¹⁰¹

48. The industry that is most at risk from climate change is agriculture. Developing well-informed and successful adaptation techniques requires a thorough grasp of their effects. According to empirical research, prolonged droughts and flash floods have become more frequent as extreme weather conditions intensify. These changes have both directly and indirectly impacted Cambodia's agriculture sector, creating obstacles to the country's economic growth and food security.¹⁰²

49. According to a study by the Cambodia Development Resource Institute (CDRI), out of all the hazards from 2013 to 2020, extended droughts had the worst effects. According to the study, rural populations in Cambodia's four agro-ecological zones that rely on agriculture have high levels of vulnerability, while those that rely on water resources have medium levels.¹⁰³ According to a study by Chhinh and Cheb (2013), flash flooding and windstorms are not as dangerous to rural households in Kampong Speu as drought. Their findings indicate that highland zones are more vulnerable than lowland areas because of lower adaptive capacity and greater sensitivity to climate change. Furthermore, the livelihoods of households relying strictly on paddy rice are far more vulnerable than those diversified through livestock production or non-agricultural work.¹⁰⁴

50. Climate variability has exceeded the adaptive limits of many rural farming systems. Changes in rainfall timing and intensity are reducing crop reliability, while prolonged droughts in provinces like Kampong Speu are causing repeated harvest failures. With many smallholders lacking access to irrigation, drought-resilient seeds, and weather information, food insecurity is worsening. Undernutrition, especially among children, remains a chronic issue. Climate-induced livelihood instability is also leading to negative coping mechanisms—such as borrowing, school dropouts, and reduced food intake—further entrenching household vulnerability.¹⁰⁵ Tourism is an emerging economic sector, with the province attracting 617,576 visitors in 2020 to destinations such as Ampe Phnom, Chambak Waterfall, V Kirirom Pine Resort, and Te Teuk Pus Hot Springs.¹⁰⁶

f. Flooding, Heat Stress, and Public Health

51. Like other parts of the country, Kampong Speu Province experiences flooding due to heavy rainfall. According to Koem & Tantanee (2021), Kampong Speu province is frequently hit by catastrophic flash floods, which cause serious harm to people, and the economic damage caused by floods has escalated in recent years.¹⁰⁷ One of the frequently flood-affected districts is Aoral district, which was the most affected district by the 2005 floods, directly affecting 3,325 people, one person died, and 17 cattle were lost.¹⁰⁸ Based on the integrated AHP-GIS analysis combined with satellite information, it was revealed that the very high and high flash flood hazard levels are found in the northwest part of the province and areas along Prek Thnot River and streams, particularly in 689 km² of Aoral, 47 km² of Thpong and 23 km² of Phnum Sruoch districts (Figures 6.2 & 6.3).¹⁰⁹ Flooding causes widespread indirect health effects, together with impacts on food production, water provision, ecosystem disruption, infectious disease outbreaks, and vector distribution. Longer-term effects of flooding may include population displacement and post-traumatic stress.¹¹⁰

52. As previously stated, climate change is predicted to raise the average annual temperature as well as the frequency and severity of heat waves, putting more Cambodians at risk for heat-related illnesses. Persons who are socially isolated, elderly, children, persons with chronic illnesses, and people in high-risk occupations are especially

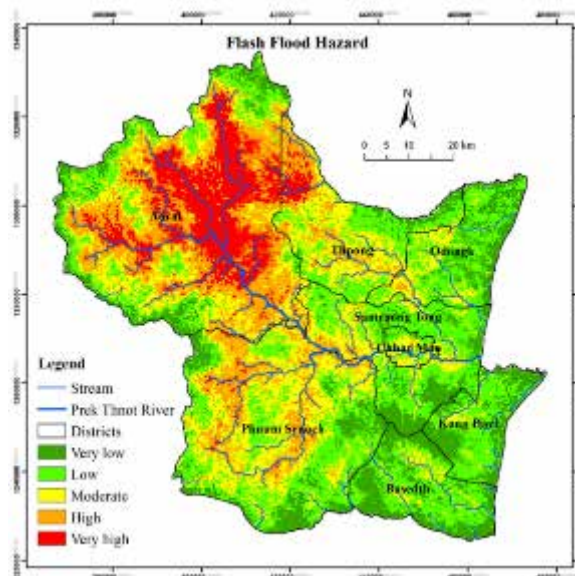


Figure 6.2 Flashflood hazard map of Kampong Speu province (Source: Koem & Tantanee, 2021)

¹⁰⁰ Shicavone, A. (2010). "Trade and climate change implications for food security in mainland Southeast Asia." International Institute for Sustainable Development.

¹⁰¹ Royal Government of Cambodia. 2006. *National Adaptation Programme of Action to Climate Change*. Phnom Penh: Ministry of the Environment.

¹⁰² Nelson, G.C., M.W. Rosegrant, A. Palazzo, I. Gray, C. Ingersoll, R. Robertson, T. Zhu, T. Sulser, C. Ringler, and S. Msangi. Forthcoming. "Food Security and Climate Change Challenges to 2050: Key Messages from the Future of Food and Farming Quantitative Scenarios." Washington D.C., International Food Policy Research Institute.

¹⁰³ *Ibid.*

¹⁰⁴ Chhinh, N., & Cheb, H. (2013). *Climate Change Vulnerability: Household Assessment Levels in the Kampong Speu Province, Cambodia. Climate Change Vulnerability Assessment in Kampong Speu Province, Cambodia*. Phnom Penh: Phnom Penh Royal University of Phnom Penh, 53-62.

¹⁰⁵ Chen, T. O. (2022). The impacts of climate change on food consumption, household income, and child nutrition in Boseth District, Kampong Speu Province, Cambodia. *Insight: Cambodia Journal of Basic and Applied Research*, 4(1), 19-30.

¹⁰⁶ Provincial Tourism Department, 2021

¹⁰⁷ Koem, C., & Tantanee, S. (2021). *Flash flood hazard mapping based on AHP with GIS and satellite information in Kampong Speu Province, Cambodia*. *International journal of disaster resilience in the built environment*, 12(5), 457-470.

¹⁰⁸ *Ibid.*

¹⁰⁹ *Ibid.*

¹¹⁰ World Health Organisation and United Nations Framework Convention on Climate Change (2015). Climate Change Health Country Profile – 2015, Cambodia. World Health Organisation <https://apps.who.int/iris/rest/bitstreams/1064308/retrieve>

susceptible to heat-related illnesses.¹¹¹ Some of the most virulent infections in the world are extremely sensitive to changes in temperature, precipitation, and humidity, according to the World Health Organisation and the World Meteorological Organisation. These have a significant impact on the life cycles of the infectious agents and vectors that spread foodborne and waterborne illnesses.¹¹² Furthermore, the World Health Organisation reports that there are increasing health risks associated with climate change in Cambodia, such as vector-borne illnesses, malnutrition, and diarrheal illnesses, in addition to other conditions like respiratory tract infections, rodent-borne illnesses, non-communicable diseases, heat-related illnesses, and effects on mental health.¹¹³

53. Extreme heat, flooding, and vector-borne diseases are just a few of the climate-related health risks that Cambodia is dealing with. As previously mentioned, research by Chhinh and Cheb (2013) found that rural households in Kampong Speu are more at risk from drought than from flash floods or windstorms. Nop (2021) also studied that Kampong Speu is the area most impacted by droughts that occurred frequently and severely damaged paddy crops.¹¹⁴ Individuals with pre-existing diseases, youngsters, outdoor workers, and the elderly are especially vulnerable. In contrast to the expected baseline of roughly four deaths per 100,000 yearly between 1961 and 1990, heat-related mortality in older persons (65 and older) is predicted to rise to roughly 56 deaths per 100,000 in a high emissions scenario by 2080. In 2080, heat-related fatalities among the elderly might be reduced to roughly 11 per 100,000 if emissions were cut quickly.¹¹⁵ Due to agricultural loss, community disturbance, and displacement brought on by climate change, mental health stress—which is frequently disregarded—is also becoming more common.

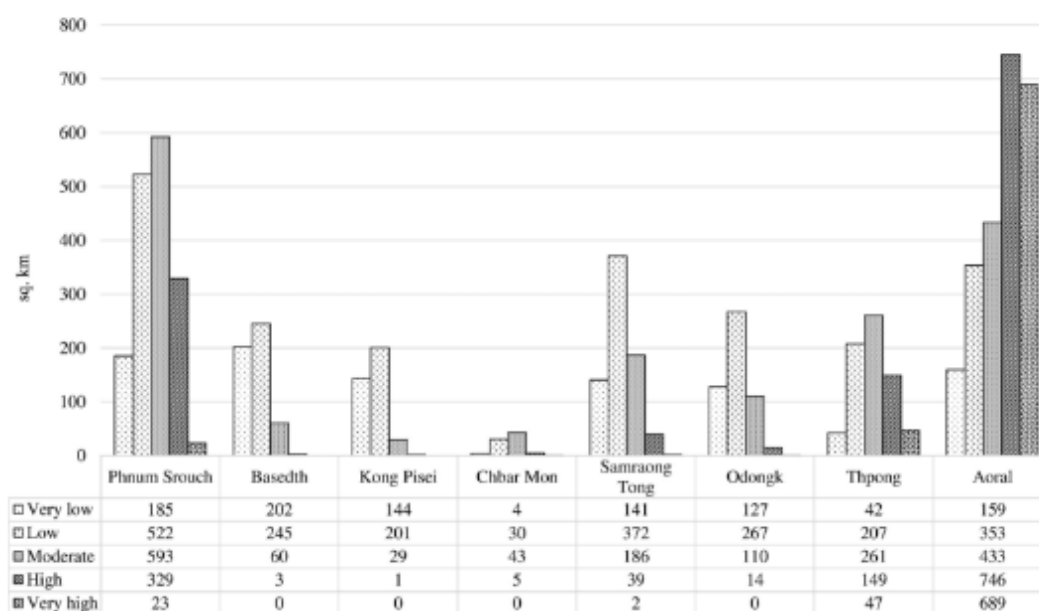


Figure 6.3 Spatial distribution of flash flood hazard in each district in Kampong Speu province
(Source: Koem & Tantanee, 2021)

54. In Cambodia, by 2070, 22 million people are projected to be at risk of malaria under both a high and low emissions scenario. Population growth can also cause increases in the population at-risk in areas where malaria presence is static in the future.¹¹⁶ In Cambodia, the mean relative vectorial capacity for dengue fever transmission is projected to increase from about 0.82 to about 0.91 towards 2070 under both a high and low emissions scenario.¹¹⁷

55. Inadequate water and sanitation infrastructure increases the risk of respiratory and diarrheal illnesses, while shifting weather patterns are increasing the seasonality and range of diseases like dengue and malaria. If emissions stay high, heat-related mortality among the elderly is expected to rise sharply by 2080.¹¹⁸

g. Water Resources and Waste Management

¹¹¹ *Ibid.*

¹¹² World Health Organisation and World Meteorological Organisation (2012). Atlas of Health and Climate. World Health Organisation.

¹¹³ World Health Organisation and World Meteorological Organisation (2021). Building climate-resilient health systems in Cambodia: Case Study on Climate Change and Health. World Health Organisation <https://www.who.int/news-room/feature-stories/detail/building-climate-resilient-health-systems-in-cambodia#:~:text=Growing%20health%20risks%20from%20climate,illness%20and%20mental%20health%20impacts>.

¹¹⁴ Nop, S. (2021). *Climate Change Adaptation in Cambodia*. In *Climate Change Adaptation in Southeast Asia* (pp. 43-56). Singapore: Springer Singapore

¹¹⁵ World Health Organisation and United Nations Framework Convention on Climate Change (2015). Climate Change Health Country Profile – 2015, Cambodia. World Health Organisation <https://apps.who.int/iris/rest/bitstreams/1064308/retrieve>

¹¹⁶ World Health Organisation (2015). Country-level analysis, completed in 2015, was based on health models outlined in the quantitative risk assessment of the effects of climate change on selected causes of death, 2030s and 2050s. Geneva: World Health Organisation. The mean of health impact estimates for three global climate models is presented. Models assume continued socioeconomic trends (SSP2 or comparable). Liu-Helmersson, J., Quam, M., Wilder-Smith, A., Stenlund, H., Ebi, K., Massad, E., & Rocklöv, J. (2015). Climate Change and Aedes Vectors: 21st Century Projections for Dengue Transmission in Europe. *eBioMedicine*, 7(2016): 267 – 277.

¹¹⁷ *Ibid.*

¹¹⁸ World Health Organisation and United Nations Framework Convention on Climate Change (2015). Climate Change Health Country Profile – 2015, Cambodia. World Health Organisation <https://apps.who.int/iris/rest/bitstreams/1064308/retrieve>

56. Water has a major role in Cambodia's economy. The "Pentagonal Strategy-Phase I on Growth, Employment, Equity, Efficiency, and Sustainability of the Kingdom of Cambodia" acknowledges the importance of water for food production, rural livelihoods, and economic development. It has been noted that climate change will make managing water resources in Cambodia more difficult. In addition to frequent extreme weather events and perhaps worsening periodic water shortages and floods, less rainfall is expected during the dry season and more during the rainy season.

57. In upland regions, hydrological cycles are becoming less consistent. Wet-season overflow, dry-season depletion, and erratic flow are all problems for springs and streams that support both human settlements and ecosystems. Aquatic habitats are

being threatened by wastewater contamination from populated regions and tourist destinations, which is lowering water quality. Conflict over usage is growing, and adaptive capacity is decreasing as a result of climate change's alteration of recharge patterns and increased demand for increasingly limited water supplies.

58. Most Cambodians in rural areas face water shortages during the dry season and minor dry spells in the rainy season. The water ponds are overgrown with grass, limiting their water storage capacity. The irrigation infrastructure is old and run-down, severely impacting water distribution and supply. Therefore, rainwater is widely collected for school meals, sanitation facilities, and household consumption. However, its quality remains extremely poor due to pervasive contamination. This widespread vulnerability highlights an urgent need for a robust treatment system that ensures safe drinking water. In such water-scarce regions, developing rainwater harvesting into a safe, dependable source of potable water is essential.¹¹⁹

59. Smith and Garaba (2025) studied coastal tourist sites and concluded that these areas face plastic pollution challenges due to mismanaged plastic waste and the growing influx of tourists and limited waste management resources.¹²⁰ Because the project sites are designated eco-tourism areas situated inside protected areas, establishing proper solid waste and wastewater management systems is essential to safeguard public health and mitigate environmental degradation.

60. Data from project formulation field assessments indicate that poor solid waste management heavily impacts the target areas. For example, mismanaged **waste along eco-trails and waterfalls** directly contaminates local paddy fields through agricultural runoff. Furthermore, because proper segregation and collection infrastructure are missing, open burning remains a common disposal method, exposing residents to hazardous emissions and acute health issues (Photo 2).



Photo 2 Example of inappropriately managed waste at the project target sites

Photo 3 Example of existing dysfunctional latrines without a proper septic tank and flush water at Te Teuk Pus

61. According to the Cambodia Demography and Health Survey Final Report 2021-22, 12.8% of the population practices open defecation in Kampong Speu.¹²¹ The project team also identified that inadequate sanitation facilities, devoid of proper septic tanks and sufficient flush-water access during the field assessments. These environments without proper sanitation potentially pose acute health risks to local populations and exacerbate environmental pollution via untreated wastewater drainage. The project formulation team verified that 50% of the **sanitation**

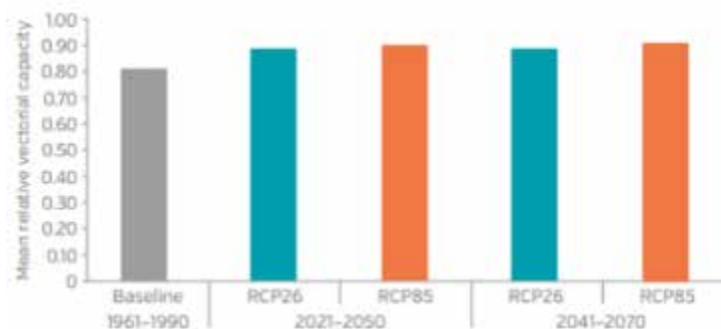


Figure 6.4 Mean relative vectorial capacity for dengue fever transmission in Cambodia

(Source: Liu-Helmersson, J., Quam, M., Wilder-Smith, A., Stenlund, H., Ebi, K., Massad, E., & Rocklöv, J. (2015).



Photo 1 Example of rainwater collection and storage at a household

¹¹⁹ Song, M., Yang, D., Ramu, A. G., & Choi, D. (2025). Overcoming water scarcity: a rainwater harvesting prototype for drinking water with advanced monitoring. *Sustainable Water Resources Management*, 11(3), 59.

¹²⁰ Smith, G., & Garaba, S. P. (2025). Insights from monitoring abundances and characteristics of plastic leakage in city waterways and tourist beaches of Cambodia. *Environmental Challenges*, 19, 101121.

¹²¹ <https://dhsprogram.com/pubs/pdf/FR377/FR377.pdf>

infrastructure (two out of four latrines) at Te Teuk Pus geothermal site is currently broken, with the operational remainder functioning below acceptable hygiene thresholds due to substandard materials and design (Photo 3). The resulting discharge of untreated effluent into surrounding waterbodies creates severe negative externalities, degrading local water security, compromising community health, and undermining the ecological integrity of the broader watershed. This particularly affects female vendors who rely on the site for their informal livelihood activities and spend significant time there on a daily basis, exposing them to increased health, safety, and dignity-related concerns.

62. Water availability is becoming less predictable across Cambodia's climate-stressed landscapes. Seasonal imbalances, droughts followed by intense rainfall, are placing pressure on ageing or inadequate water infrastructure. In rural areas, many communities experience water scarcity during the dry season and flood damage during the wet season in the same year.¹²² Inefficient irrigation systems limit agricultural resilience, while degraded reservoirs and poor waste management threaten water quality. In Kirirom National Park, tourist-related pollution and sedimentation are impacting the park's freshwater systems and degrading the ecological value of natural springs and wetlands.¹²³ Communities living downstream are increasingly affected by the decline in water services.

h. Ecosystem and Livelihood Fragility

63. Natural ecosystems are increasingly fragile due to a combination of climatic and anthropogenic pressures. Forest degradation, driven by illegal logging, overharvesting of non-timber products, and land conversion, is accelerating biodiversity loss and undermining the ecological services that many rural households rely on. During periods of stress, families become increasingly dependent on forests for fuel, food, and income, thereby exacerbating unsustainable extraction practices. Livelihood fragility is deepening in the absence of early warning systems, alternative income sources, or institutional safety nets.¹²⁴ ¹²⁵ Ecotourism, which offers a pathway for sustainable development, is also at risk from the degradation of natural attractions and the deterioration of access roads.



Photo 5 One of the common livelihoods (outdoor small shops at tourist sites) of women in Kampong Speu Province

64. The convergence of environmental degradation, livelihood fragility, and weak institutional resilience makes Cambodia, notably the Kampong Speu region, highly susceptible to the impacts of climate change.¹²⁶ Without community-based adaptation, strengthened natural resource governance, and ecosystem restoration, climate risks will continue to undermine both development gains and biodiversity conservation. The integration of nature-based solutions, climate-resilient infrastructure, and inclusive livelihood strategies remains critical to safeguard the ecological and social systems on which Cambodia's future depends.

H. Summary of Climate Change Hazards

65. National level

- According to the Global Climate Risk Index (CRI), Cambodia ranked 14th among 181 countries in terms of cumulative climate risk from 2000 to 2019.
- Climate change could cost up to 9% of Cambodia's GDP by 2050 and increase the poverty rate by up to 6% by 2040 without proper adaptation and mitigation measures.
- Under a high-emissions scenario (RCP8.5), national temperatures could rise by up to 3.7°C by the 2090s, intensifying the frequency and severity of extreme climate events. The SSP3-7.0 scenario projected that the national average number of extremely hot days (with maximum temperatures above 35°C) would rise from the 1995–2014 baseline to 60.17 days per year (ranging from 39.43 to 87.01) during 2020–2039 and further increase to 82.87 days (ranging from 46.73 to 124.53) by the middle of the century.

66. Provincial level

- **Droughts:** According to CFE-DM, Kampong Speu Province is one of the most drought-affected provinces in Cambodia due to a delay of rainfall during the rainy season and no or limited rainfall during the dry season. Farmers

¹²² IPCC. (2022). *Summary for Policymakers: Asia*.

¹²³ Asian Development Bank (ADB, 2022): *Cambodia Water Supply and Sanitation Sector Assessment, Strategy, and Road Map*.

¹²⁴ ICEM. (2003). *Field Study Cambodia: Biodiversity and Protected Areas*.

¹²⁵ Adaptation Fund. (2018). *Mid-Term Review: Enhancing Climate Resilience of Rural Communities in Protected Areas*.

¹²⁶ World Bank & ADB. (2021). Climate Risk Country Profile: Cambodia. <https://climateknowledgeportal.worldbank.org>

in rainfed areas incur an annual projected loss of USD 53.48 per hectare of rice field, and their paddy production is reduced by at least 73% when compared to a non-drought year.

- **Extreme heat:** Under high-emission scenarios (RCP8.5), Kampong Speu province is projected to experience a temperature rise of up to 1.5°C by 2050 and 3.7°C by the 2090s compared to the 1986–2005 baseline. According to ADB, the average temperature of Kampong Speu is projected to rise to 1.5°C by 2050, leading to a higher risk of heat and water stress due to more frequent heat waves. It is projected that high heat index days will increase from 61.27 during 2020-2039 to 111.30 during 2040-2059.

- **Flooding:** Kampong Speu province is frequently hit by catastrophic flash floods, which cause serious harm to people, and the economic damage caused by floods has escalated in recent years. Based on the integrated AHP-GIS analysis combined with satellite information, it was revealed that the very high and high flash flood hazard levels are found in the northwest part of the province and areas along Prek Thnot River and streams, particularly in 689 km² of Aoral, 47 km² of Thpong and 23 km² of Phnum Sruoch districts.

- **Forest fire:** Cambodia has the highest number of detected fires per area in Southeast Asia, while the national and local authorities' response to the drought has been comparatively delayed compared to the steps taken to address floods, even though drought calls for efficient water management.

I. Recommended Adaptation Interventions

67. The interventions listed below are derived directly from the hazard evidence in Section H above (national and provincial climate hazard summary); from the terminal evaluation recommendations of the prior Adaptation Fund-financed project "Enhancing Climate Change Resilience of Rural Communities Living in Protected Areas in Cambodia" (2012-2021, UNEP/MoE), summarised in Section 7 below; from the 13 stakeholder consultations recorded in Table 16 (2025-2026); and from the May 2026 technical/engineering site assessments referenced throughout this proposal; from UN-Habitat's prior project experience in Cambodia, including the AF-financed coastal infrastructure project in Kep and Preah Sihanouk (2021-2025) and the Kampot/Koh Kong project (2024-2028), which piloted the same nature-based and community-contracting intervention model.

A. Financial, institutional, and technological barriers and a lack of information on climate change characteristics generally constrain climate change adaptation measures. Therefore, support is required through funding, technical input, assistance in planning and coordination, community empowerment, extension initiatives to enhance **community capacity-building, sub-national coordination networks, awareness raising, etc., to overcome the barriers.**

B. Local residents are affected by extreme heat, while areas without allocated public spaces with sufficient trees to provide shade and cooling via evapotranspiration, while preventing the local assets from strong winds. **Biodiversity corridors, including public spaces,** should be established with **nursery-supported native reforestation**, which has ecological and livelihood values.

C. Kampong Speu province is severely affected by defective water sources, such as irrigation systems and village ponds, as a result of the current and anticipated excessive heat and drought. The province is also severely affected by heavy precipitation events, which are defined as an increase in the frequency and severity of rainfall. Contamination of land and water is a danger associated with improper solid waste management in hilly and watershed areas. Water clogging can be a cause to lead to an increase in vector-borne and water-borne diseases. Thus, **irrigation systems and canals, as well as village pond rehabilitation,** are required.

D. Poor and marginalised households, including indigenous Suoy populations, tend to be less resilient and face more significant difficulties in absorbing and recovering from the impacts of natural disasters. Recurrent disasters observed in Kampong Speu province compound the losses for many households, forcing them to organise their livelihood such that overall risks can be reduced in the face of uncertainty, even if it means a reduction in their income and increased poverty. Therefore, **supporting vulnerable communities with their livelihoods** would increase their resilience against disasters.

E. Climate change and water pollution crisis drive a greater need for repairing the existing dysfunctional water treatment plant and pipe connections in Chambak community. Without sufficient resources and capacity to repair these public water supply systems, residents depend on rainwater for their daily lives and experience water shortages, especially during the dry season. **Local stakeholders requested a project to repair these local systems to enhance accessibility to safe drinking water and connect to the vicinity households.**

F. Climate change can impact waste facilities both directly and indirectly. At the same time, improper waste management observed in Kampong Speu province, i.e., waste blocking drainage, exacerbating flooding during rainfall events, has reduced the ability to cope with extreme climate events. Without proper solid waste management capacity and containers, solid waste was disposed of inappropriately in target areas, especially eco-trails, the waterfall, which is the local water source, and nationally unique geothermal sites. Improper waste management causes both land and water contamination, as well as health risks through open-burning disposal practices. Therefore, a simple **solid waste management** facility establishment at Te Teuk Pus and waste container installations at Chambak should be considered resilient to climate change.

G. Local latrines in protected areas with ecotourism values, specifically Chambak and Te Teuk Pus have an insufficient number or dysfunctional latrines without a proper septic tank and water for flushing excrement and maintain facility hygiene. Sanitation is essential to livelihoods as the absence of proper sanitation facilities can lead to diseases; human excreta have been implicated in the transmission of many infectious diseases, including cholera, typhoid, infectious hepatitis, polio, cryptosporidiosis, and ascariasis. Flooding may also cause land and water pollution by running off of untreated dirty water flow to forest areas and geothermal sites, which are located in protected areas. To minimise local

health risks and contamination of local/indigenous valuable areas, **gender-sensitive and disability-inclusive WASH facilities** with proper septic tanks and hygiene systems should be established.

H. An existing eco-trail to a waterfall in Chambak Commune has experienced wildfire due to extreme heat during the dry season and insufficient local capacity and water sources. A 1.5 km trail without proper handrails and footsteps exacerbates the safety risks of users, especially during and after rain. Existing trails lack adequate infrastructure, proper construction and maintenance standards, erosion control measures, safety features, and effective signage, which further accelerate land degradation and pose risks to biodiversity conservation within the Kirirom landscape. In addition, degraded and unsafe access routes constrain emergency response, limit community mobility, and reduce the area's ecotourism potential. That is the reason why the local community raised their needs to **improve eco-trails, with firebreak function**, specifically trail rehabilitation with an emergency lane, along with the trail, nature-based footstep, handrail installation, signboard installations, and waste container installations.

I. In addition to housework and childcare burdens, distant location and limited transportation to the venue are the common reasons hampering the participation of women and other marginalised populations, including indigenous people and youth, in capacity-building sessions. As the project adopts the participatory approach to enhance community-based adaptation and ecosystem resilience in protected areas, capacity-building through a training-to-trainer approach is required. The existing community building was requested to be altered as **a vocational training centre**, which is accessible to local people by aiming at building the capacity of local residents, emphasising women, youth, indigenous people, and forest rangers. The curriculum is planned to cover a variety of practical vocations aligned with local adaptation needs, including solar panel repair, digital literacy for climate information access, climate-smart agricultural practices, non-timber forest products, handicrafts, eco-guiding, cooking, digital marketing, and solid waste management.

7. Lessons Learned from Past Projects

68. The foundation of the present proposal rests upon insights gained from the earlier Adaptation Fund-supported initiative titled *"Enhancing Climate Change Resilience of Rural Communities Living in Protected Areas in Cambodia"* (2012–2021), jointly implemented by the United Nations Environment Programme (UNEP) and the Ministry of Environment. One of the recommendations from UNEP's terminal evaluation report was to adopt a more decentralised project implementation structure with stronger involvement of the Provincial Department of Environment and local authorities. Another recommendation was that agriculture and alternative livelihoods training for CPA communities should follow an effective adult learning approach, the scope of which should be the value chain (inputs and markets), not only production.

69. This programme, operational in similarly vulnerable landscapes, demonstrated that climate adaptation efforts are most effective when infrastructure investments are harmonised with grassroots planning, institutional strengthening, and inclusive community engagement. Among the principal lessons drawn from that intervention was the transformative role of participatory, micro-level climate risk planning, which fostered a sense of local ownership and long-term stewardship. Community resilience was most robust, where investments in climate-resilient infrastructure were complemented by technical support, particularly in areas repeatedly exposed to flooding and seasonal variability. Notably, the project highlighted the importance of gender-sensitive and pro-poor targeting to ensure equitable access to adaptation benefits and to support those most vulnerable to climate hazards.

70. The proposed project internalises these lessons and seeks to apply them to the distinct ecological and socio-political context of two target districts. In doing so, it prioritises community-led adaptation planning, diversified and climate-smart livelihoods, identified inclusive and gender-responsive value chains, and the deployment of ecosystem-based interventions that respond directly to the lived realities of vulnerable households. These approaches are not add-ons but essential foundations of a context-sensitive and transformative adaptation pathway.

B. Project/Programme Objectives

71. Project Goal: To strengthen the long-term climate resilience of vulnerable communities and ecosystems in Aoral and Phnum Sruoch Districts by 2030 through inclusive governance systems, nature-based ecosystem restoration, and the promotion of sustainable livelihoods and climate-resilient infrastructure contributing to biodiversity conservation, climate risk reduction, and sustainable development in protected areas.

72. Specific Objectives:

Objective 1: Strengthen inclusive local governance and institutional capacities for climate risk management of Commune Councils and Community Protected Area (CPA) committees to plan, finance and implement climate risk management strategies.

Objective 2: Enhance climate-resilient livelihoods of vulnerable households through ecotourism, vocational skills, and climate-smart agriculture.

Objective 3: Restore and protect degraded ecosystems using nature-based solutions to improve biodiversity and ecosystem services.

Objective 4: Improve equitable access to climate-resilient water, sanitation, access infrastructure and protective small-scale infrastructure that reduces the vulnerability of residents.

73. A substantial portion of the total project budget, **85.8%**, is allocated to **Components 2 and 3**, which focus on **climate-resilient infrastructure and livelihood promotion**. This prioritisation aligns with the expressed needs of local communities, municipal administrations, and national authorities. To ensure the long-term effectiveness and sustainability of these physical investments, **Component 1** will deliver targeted capacity-building support, enabling local stakeholders to manage, maintain, and benefit from the infrastructure over time.

C. Project/Programme Components and Financing

Table 2 Summary of Project/Programme Components, Outputs, Outcomes, and Budget

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US\$)	
Component 1 Build capacity at the community and sub-national levels to strengthen inclusive climate governance and Protected Area Management	Output 1.1. Community capacity-building programme implemented in target districts to maintain climate-resilient infrastructure, manage eco-tourism, and monitor ecosystem assets, with at least 40% participation (of 300 total participants) women, youth, and indigenous groups participating <i>(to support sustainable implementation of interventions under Components 2 and 3)</i>	Outcome 1: Local and sub-national institutions demonstrate improved capacity to plan, budget for, and implement inclusive, risk-informed adaptation actions in protected and climate-vulnerable landscapes.	120,000	
	Output 1.2 18 Commune councils and nine Community Protected Areas (CPA) committees trained in climate-informed investment planning, integrating adaptation budgeting, local risk mapping, and disaster response protocols into Commune/Sangkat Investment Plans (CIPs) and Protected Area Plans.		110,000	
	Output 1.3 Vocational training centre established (in Te Teuk Pus) and operated to train 400 beneficiaries (at least 200 women), emphasizing youth and marginalised groups, annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques.		681,100	
Component 2: Promoting Climate-Resilient Livelihoods through Climate-Smart Agriculture and Eco-Economy Solutions	Output 2.1 Market and climate vulnerability assessments conducted in three locations to identify inclusive and gender-responsive value chains in drought-resilient crops, agroforestry, and non-timber forest products, incorporating indigenous knowledge.	Outcome 2: Vulnerable households, including women, youth, and indigenous groups, adopt diversified and climate-resilient livelihood strategies linked to sustainable agriculture, forest products, and green tourism value chains.	110,000	
	Output 2.2 At least 100 households (min. 40% women) trained in climate-smart agriculture, including agroecological practices such as organic composting, intercropping, and water-saving irrigation.		250,000	
	Output 2.3 Demonstration plots and value-chain pilots (at least 3 per district) established and managed jointly by youth and elder farmers to promote intergenerational learning in climate-resilient livelihoods		500,000	
Component 3: Restoring Ecosystems and Building Climate-Resilient Infrastructure in Protected and Eco-Tourism Landscapes	A. IN TE TEUK PUS		Outcome 3: Ecosystems and critical rural infrastructure in protected and eco-tourism zones are restored and made climate-resilient, reducing environmental degradation and enhancing the adaptive capacity of local communities.	1,800,000
	Output 3.1 Te Teuk Pus geothermal area rehabilitated through sediment removal, slope stabilisation, 2 km eco-trail improvements, and 100 units of solar-powered lighting, with indigenous Suoy communities co-managing the process.	650,000		
	Output 3.2 Biodiversity corridor established within 57 hectares, linking degraded forest patches with native reforestation using nursery-supported species of ecological and livelihood value.			
	B. IN AORAL DISTRICT			250,000
	Output 3.3 At least 10 village ponds rehabilitated with climate-resilient design features (e.g., raised bunds, sediment traps) to support year-round water access for agriculture and domestic use.	750,000		
	Output 3.4 3 irrigation canals (3 km) and 1 water gate rehabilitated in Aoral District with community participation and design standards for dry-season flow retention and flood management.			
	C. IN PHNUM SRUOCH DISTRICT			1,750,000
	Output 3.5 Eco-trail rehabilitation with integrated firebreak function (1.5 km) constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.	250,000		
	Output 3.6 Irrigation systems (2 km) upgraded using watershed-based design to optimise dry-season storage, flood buffering, and equitable distribution across farm plots.			
	D. IN PHNUM SRUOCH AND TE TEUK PUS			850,000
	Output 3.7 Climate-resilient WASH facilities built in Chambak Commune (16 units) and Te Teuk Pus geothermal area (2 units) with water supply connection, climate-smart design (e.g., elevated latrines), menstrual hvgiene spaces, and universal access features			

	for women and persons with disabilities.		
Component 4: Capturing, Sharing, and Scaling Adaptation Knowledge for Sustainability and Replication	Output 4.1 Project lessons and technical knowledge (translated into Khmer, Suoy), audio, and video formats for inclusive dissemination among non-literate and marginalised populations.	Outcome 4: Adaptation knowledge and locally led solutions are documented, disseminated, and integrated into sub-national and national strategies to promote replication, policy uptake, and long-term sustainability.	120,000
	Output 4.2 Replication workshops (four workshops and 400 participants) conducted with district, provincial, and national actors (30% women) to integrate lessons into Commune Investment Plans, National Adaptation Plan, and Environment Strategy 2023–2033.		151,000
6. Project/Programme Execution cost (9.5%)			874,762
7. Total Project/Programme Cost			9,216,962
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			783,038
Amount of Financing Requested			10,000,000

D. Theory of Change Narrative

74. The central climate problem this project addresses is that Aoral and Phnum Sruoch Districts face escalating drought (rainfed farmers already losing USD 53.48/ha annually), extreme heat (high heat-index days projected to nearly double from 61.27 to 111.30 days/year by 2040-2059), flash flooding (689 km² of Aoral rated very-high/high hazard), and forest fire (Cambodia has the highest per-area fire detection rate in Southeast Asia), hazards that are degrading the ecosystem services and infrastructure on which upland, forest-dependent, and Indigenous Suoy communities depend, while weak sub-national governance and data capacity constrain an effective response. The following pathways directly address this problem.

75. IF sub-national officials, Commune Councils, CPA committees, and Indigenous Suoy representatives receive sustained capacity development and technical tools to interpret climate projections, heat index trends, drought and flood scenarios, and forest-fire risk maps, and integrate this information into commune plans, CPA management plans, and eco-tourism systems, **THEN** institutions will be equipped to implement climate-risk-informed actions suitable for a future of higher temperatures, extreme rainfall, and water scarcity. Strengthened governance directly addresses constraints—limited climate data, weak institutional coordination, and insufficient planning capacity—thus improving preparedness for projected climate-induced hazards.

76. IF vulnerable households, particularly poor farmers, women-headed households, youth, and Indigenous Suoy communities, gain access to climate-smart agricultural techniques suited to hotter and drier conditions, drought-tolerant crops aligned with projected rainfall delays, water-saving irrigation that reduces exposure to prolonged dry spells, and diversified eco-tourism income streams that are less climate-dependent, **THEN** they will reduce dependence on climate-sensitive cropping systems, and strengthen resilience to future droughts, heatwaves, and erratic monsoons.

77. IF ecosystems and infrastructure are restored and climate-proofed through pond rehabilitation to buffer dry-season water shortages, canal and water gate upgraded to manage extreme rainfall runoff, firebreak constructed to mitigate heightened forest-fire risk under rising temperatures, reforestation implemented to stabilise slopes during intense rains, and eco-trail improved to reduce erosion, **THEN** the landscape will be more resilient to the projected scenarios of (i) prolonged drought, (ii) concentrated rainfall events, and (iii) increased wildfire frequency. These measures will enhance water security, reduce disaster risks, and safeguard ecosystem services needed for long-term adaptation.

78. IF project lessons, Indigenous knowledge, and gender-responsive adaptation approaches are documented and disseminated—particularly those addressing climate projections and hazard-specific lessons—and integrated into commune plans, NAP pathways, and protected area strategies, **THEN** sub-national and national institutions will be able to replicate adaptation measures that are demonstrably suitable for Cambodia's evolving climate risks.

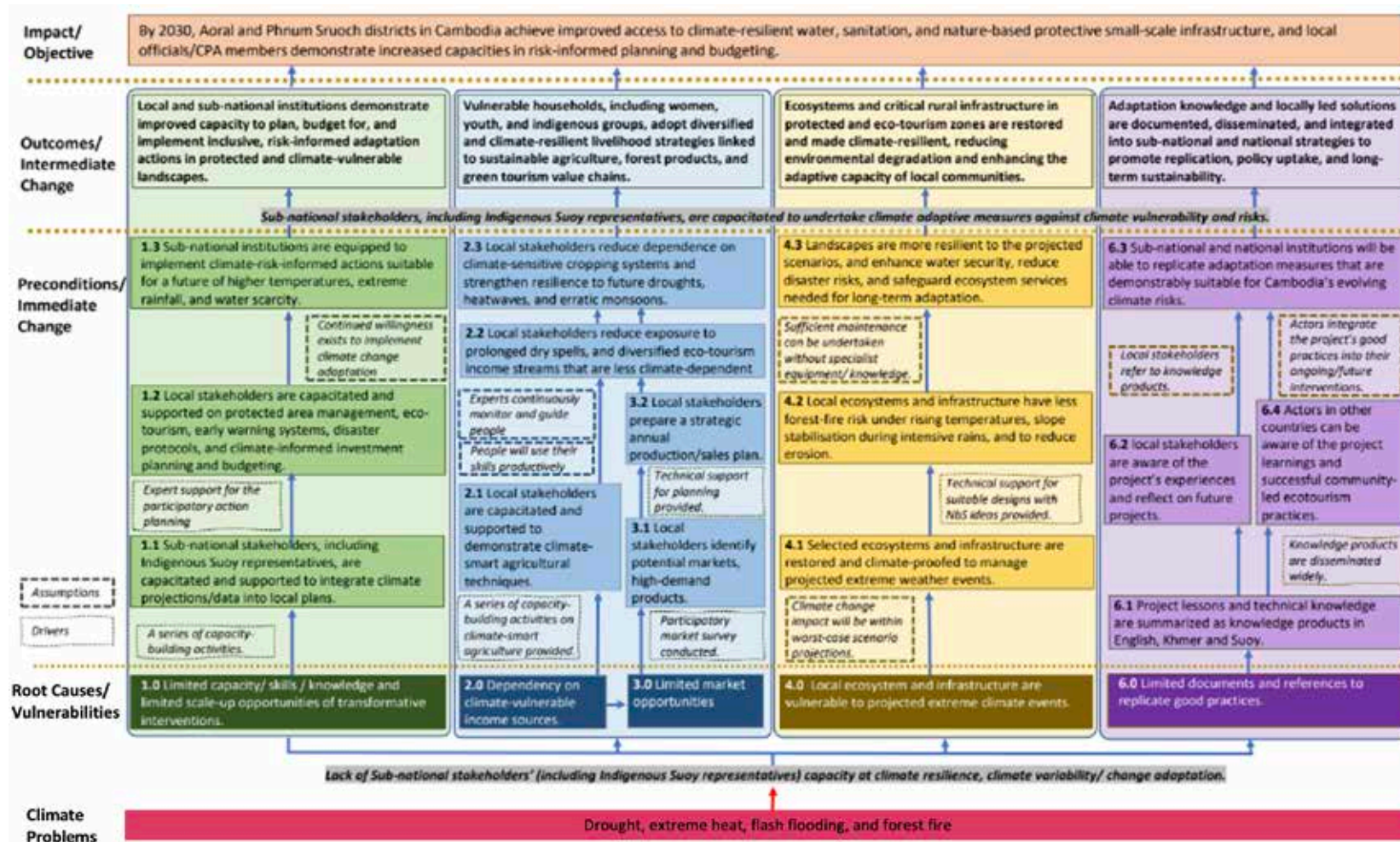
79. THEREFORE, communities in Aoral, Phnum Sruoch, Te Teuk Pus, and surrounding protected areas will adopt climate-resilient development pathways aligned with projected climate scenarios, enabling sustained adaptation to higher temperatures, recurring droughts, extreme rainfall events, and ecological degradation. This will lead to long-term improvements in water security, ecosystem health, livelihood resilience, governance, and disaster preparedness.

E. Projected Calendar

Table 3 Project Milestones and Timeline

Milestones	Expected Dates
Start of Project/Programme Implementation	November 2026
Mid-term Review (if planned)	November 2028
Project/Programme Closing	October 2030
Terminal Evaluation	April 2031

Figure 7.1. Theory of Change Diagram



8. Target Area Selection Rationale

80. The proposed project will be implemented in Kampong Speu Province, one of Cambodia's most climate-vulnerable regions, frequently exposed to droughts, flash floods, and erratic rainfall. Within the province, the focal area of intervention is Te Teuk Pus, a rare geothermal hot spring site located in Trapeang Chour & Ta Sal Communes of Aoral District, known for its mineral-rich waters, biodiversity, and eco-tourism potential. The site features six natural hot springs with temperatures reaching 70°C and is embedded within a 57-hectare area of semi-evergreen forest and sandstone terrain. Despite its ecological and cultural value, the area is suffering from environmental degradation due to unregulated tourism, inadequate waste management, and sedimentation. The project will rehabilitate Te Teuk Pus through nature-based solutions, climate-resilient infrastructure, and sustainable tourism promotion, with particular benefits for the indigenous Suoy community.

81. Surrounding Aoral and Phnum Sruoch districts serve as complementary intervention areas due to their high exposure to climate hazards and ecological significance. Aoral District is home to Phnom Aoral, Cambodia's highest peak, and includes portions of the Central Cardamom Protected Forest and Aoral Wildlife Sanctuary. The district plays a crucial role in watershed regulation and biodiversity conservation, but suffers from limited infrastructure, water stress, and poverty. Communities rely on subsistence farming and non-timber forest products, with inadequate access to clean water, latrines, and waste management. Phnum Sruoch District, located adjacent to Aoral, acts as a transitional ecological zone between the Cardamom foothills and agricultural lowlands. Phnum Sruoch District includes part of Kirirom National Park, which is Cambodia's first formally designated national park and a cornerstone of the Cardamom Mountains biodiversity corridor. Kirirom functions as an upland watershed critical to regulating hydrological flows toward the southern provinces.

82. Together, these three nodes, **Te Teuk Pus**, **Aoral**, and **Phnum Sruoch**, represent a cohesive and climate-sensitive landscape where integrated interventions in eco-tourism, watershed rehabilitation, and resilient infrastructure can enhance livelihoods, reduce environmental vulnerability, and demonstrate scalable models of locally led adaptation in Cambodia.

83. As mentioned above, the Project will focus on two districts: Aoral (including Te Teuk Pus) and Phnum Sruoch in Kampong Speu Province. These districts have 85,594 females, 81,628 males, and the total population of the project target districts is 167,222 (Table 4). In the two target districts, there are nine Community Protected Areas (CPA), specifically one in Phnum Sruoch district and eight in Aoral district. These CPAs were established from 2002 to 2021 and have 406 to 3,873 people in the area (Table 5). The Project will target these 18 communes and nine CPAs throughout the project lifecycle through capacity-building, climate-resilient livelihood diversification, and small-scale infrastructure improvement.

Table 4 Population of selected districts in Kampong Speu province (2024)¹²⁷

PROVINCE	DISTRICT	AREA (Km ²)	COMMUNE	POPULATION			HHS	HHS SIZE
				TOTAL	MALE	FEMALE		
Kampong Speu	Aoral	2,373	Haong Samnam	5,773	2,591	3,182	1,324	4.4
			Reaksmei Sameakki	6,637	3,361	3,276	1,450	4.6
			Trapeang Chour	14,987	7,305	7,682	3,887	3.9
			Sangkae Satob	7,774	3,754	4,020	1,745	4.5
			Ta Sal	8,420	4,148	4,272	2,053	4.1
			Sub-total	43,591	21,159	22,432	10,459	4.2
	Phnum Sruoch	1,710	Chambak	4,053	2,004	2,049	1,110	3.7
			Choam Sangkae	8,773	4,374	4,399	2,053	4.3
			Dambouk Rung	7,369	3,716	3,653	1,831	4.1
			Kiri Voan	6,598	3,337	3,261	1,712	3.9
			Krang Dei Vay	8,668	4,225	4,443	2,098	4.2
			Moha Sang	14,738	7,082	7,656	3,311	4.5
			Ou	16,404	8,169	8,235	4,057	4.1
			Prey Rumduol	5,574	2,753	2,821	1,390	4.1
			Prey Kmeng	5,315	2,590	2,725	1,224	4.4
			Tang Samraong	10,346	4,748	5,598	2,295	4.6
			Tang Sya	12,009	5,848	6,161	2,734	4.4
			Traeng Trayueng	12,591	6,216	6,375	2,983	4.3
			Yeaymao Pichnil	11,193	5,407	5,786	2,667	4.2
			Sub-total	123,631	60,469	63,162	29,465	4.2
			TOTAL	167,222	81,628	85,594	39,924	

¹²⁷ District Socio-Economic Profile 2024

Table 5 Protected Area Communities in Kampong Speu Province (2024)

Community Protected Area	Year of Registration	Commune	District	Protected Area (ha)	HHs	Total Population	Female Population	Planned project activities
1. Chambak	2002	Chambak	Phnum Sruoch	3,451	564	2,089	1,540	1.1-1.2, 2.1-2.3, 3.5, 3.6, 3.7
2. Tasal	2018	Ta Sal	Aoral	1,451	282	1,005	527	1.1-1.2, 2.1-2.3, 3.3, 3.4
3. Ko Daun Tey	2007	Trapeang Chour and Tasal	Aoral	3,082	509	1,326	609	1.1-1.3, 2.1-2.3, 3.1, 3.2, 3.3, 3.7
4. Chombok-Trang	2007	Trapeang Chour	Aoral	2,451	441	890	398	1.1-1.2, 2.1-2.3, 3.3
5. Udom Sre Pus	2003	Trapeang Chour	Aoral	2,433	415	3,873	1,502	
6. Samaki	2003	Trapeang Chour	Aoral	1,116	1,069	1,178	584	
7. Sre Kin	2007	Trapeang Chour	Aoral	557	425	989	525	
8. Kok Mean Ti	2021	Trapeang Chour	Aoral	889	440	573	284	
9. Rolak Kong Choeung	2019	Tasal	Aoral	2,462	103	406	201	
Total				17,892	4,248	12,329	6,170	

84. The proposed Project is expected to directly reach 32,360 individuals, including 12,866 women, out of 167,222 total population in two target districts. The project was intended to indirectly benefit all 167,222 residents (85,594 women) in two districts. Table 9 summarises estimated beneficiaries across all the project outputs.

85. It is anticipated that women will make up at least 30% of the direct and indirect beneficiaries. A gender assessment was conducted in order to guarantee that the project's benefits were distributed equally between men and women. A Gender Action Plan (Table 52), which outlines the steps to advance gender equality and mainstream gender in the project's outcomes, was created and integrated into the project's monitoring and evaluation framework. Working closely with women during the project's conception, execution, monitoring, and assessment phases will be necessary to address gender issues.

86. The project's design actively promotes women's and the indigenous Suoy population's participation in its management, execution, and decision-making. Every six months, women will participate in focus groups, and the project's reports will include a gender analysis and suggestions for mainstreaming gender issues as needed. In order to provide a clear baseline from which to track progress, the project will examine the data in the Gender Action Plan at the outset.

87. Youth participation is supported through targeted design features — Output 1.3 vocational training emphasising youth, and Output 2.3 demonstration plots managed jointly by youth and elder farmers — underpinned by a 20% youth participation quota across Outputs 1.1, 1.3 and 2.3, consistent with the 32,360-beneficiary target's own youth-share assumption (Table 9). Indigenous Suoy participation is ensured through the Free, Prior and Informed Consent (FPIC) process committed to under ESP Principle 7 (Table 19).

88. Suoy-language communication materials (Output 4.1), and co-management of the Te Teuk Pus rehabilitation by the Suoy community (Output 3.1).

Table 6 Project Outputs, Geographical Location/CPAs and Beneficiaries

Outputs	Related Output	TARGET LOCATIONS & CPAs			NUMBER OF BENEFICIARIES
		Aoral District	Phnum Sruoch District	Community Protected Area (CPA)	
Output 1.1	1.3	5 communes	13 communes	9 CPAs	Direct: 300 (Women: 120) Indirect: 167,222 (Women:85,594)
Output 1.2		5 communes	13 communes	9 CPAs	Direct: 315 (Women: 95) Indirect: 167,222 (Women:85,594)
Output 1.3	1.1	Trapeang Chour & Ta Sal	-	Ko Daun Tey CPA	Direct: 400 (Women: 200) Indirect: 12,329 (Women: 6,170)
Output 2.1	2.2, 2.3	✓	✓	-	Direct: 150 (Women:75) Indirect: 167,222 (Women:85,594)
Output 2.2	2.1, 2.3	5 communes	13 communes	9 CPAs	Direct: 500 (Women: 200) Indirect: 12,329 (Women: 6,170)
Output	2.1, 2.2	5 communes	13 communes	9 CPAs	Direct: 500 (Women: 200)

2.3					Indirect: 167,222 (Women:85,594)
Output 3.1		Trapeang Chour & Ta Sal	-	Ko Daun Tey CPA	Direct: 23,407 (Women: 8,292) Indirect: 43,591 (Women: 22,432)
Output 3.2	3.7	Trapeang Chour & Ta Sal	-	Ko Daun Tey CPA	Direct: 23,407 (Women: 8,292) Indirect: 43,591 (Women: 22,432)
Output 3.3		5 communes	-	8 CPAs	Direct: 4,300 (Women: 2,200) Indirect: 43,591 (Women: 22,432)
Output 3.4		Ta Sal	-	Tasal CPA	Direct: 1,005 (Women: 527) Indirect: 8,420 (Women: 4,272)
Output 3.5		-	Chambak	1 CPA	Direct: 2,089 (Women: 1,540) Indirect: 4,053 (Women: 2,049)
Output 3.6		-	Chambak	1 CPA	Direct: 4,053 (Women: 2,049) Indirect: 123,631 (Women: 63,162)
Output 3.7	3.2	Trapeang Chour & Ta Sal	Chambak	2 CPAs	Direct: 3,415 (Women: 2,149) Indirect: 27,460 (Women:14,003)
Output 4.1		✓	✓	✓	N/A
Output 4.2		✓	✓	✓	Direct: 400 (Women: 120)

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project Components, concrete adaptation activities.

89. The actions proposed by the Project have been designed to target the poorest and most vulnerable people in the protected areas, Kampong Speu Province. A set of *soft* and *hard* measures has been proposed to ensure that resilience at the household and community level is strengthened sustainably. The *soft* measures under Components 1 and 2 focus on addressing capacity needs and gaps in adaptation measures that can reduce vulnerability to climate change and increase coping capacity. All *soft* measures are designed to support, enhance, and sustain the *hard* investments that the project will make. The *hard* investments under Component 3 will all be in small-scale climate adaptive infrastructure and ecosystems to enhance climate resilience and adaptation.

90. Through previous adaptation interventions of UN-Habitat, it has been recognized that increasing the resilience of the most vulnerable communities is best achieved through a participatory, community-led process based on local priorities, needs, knowledge, and capacities, which can then empower people to cope with and plan for the impacts of climate change. Emphasis will be given to local knowledge, including information about trends and changes experienced by communities and strategies these communities have used to cope with similar shocks or gradual climatic change. Approaches and methods developed in disaster risk reduction and community adaptation initiatives have demonstrated that empowering communities is imperative for any climate change adaptation interventions to be effective and sustainable. Indigenous knowledge of climate change adaptation will be utilized where possible. Other soft options include awareness raising and professional skills enhancement. Key audiences for this work are communities and sub-national government stakeholders. In addition, the proposed Project will work with the underprivileged, i.e., women, older persons, youth, people with disability, who are much more vulnerable. As we mentioned earlier, the gender action plan will be prepared based on the detailed gender assessment during the full proposal development phase.

91. The proposed intervention places nature-based solutions (NbS) as a central strategy to strengthen ecosystem services while enhancing community resilience. NbS also delivers co-benefits such as enhanced biodiversity, improved livelihoods, and strengthened ecosystem services. Through reforestation, agroforestry, watershed rehabilitation, and wetland renewal, the project seeks to revive the natural buffers that once safeguarded the communities of Aoral and Phnum Sruoch. NbS provide multiple co-benefits: they buffer communities against droughts and floods, regulate local microclimates, stabilise soils, and enhance biodiversity corridors. These measures are cost-effective, scalable, and socially inclusive, ensuring that women, youth, and indigenous groups participate in and benefit from ecosystem stewardship. At Te Teuk Pus, the rehabilitation of the geothermal springs and their surrounding vegetation will restore the ecological balance of this rare landscape and secure its value for eco-tourism. In Aoral and Phnum Sruoch, community-led reforestation and firebreak management will reduce the advance of drought and wildfire, while providing secure livelihood opportunities to women, youth, and indigenous households. By embedding nature-based solutions within each component of the project, adaptation is achieved not merely through physical work but through the renewal of ecosystems themselves, in harmony with the enduring principles of resilience and stewardship.

92. Through the gender assessment during the full proposal development stage, it was identified that women have greater sensitivity and less adaptive capacity in Cambodia due to their lower incomes, gender inequality, and daily household responsibilities. The female population in Kampong Speu Province is 51.1%, with 14.5% being households under poverty. Women's livelihoods, access to resources, and capacity to adapt differ from men's (Annex D). Therefore, the Project designed activities and approaches to be more gender responsive with gender-targeted

indicators. It considers not only equal benefits to men and women but also ensures that women and men, including indigenous people and other marginalised groups, have equal opportunities to build resilience, address their differentiated vulnerabilities and increase their capacity to adapt to climate change impacts through the project implementation.

93. Based on the gender assessment and local context, the project will ensure 30% women's representation during the meetings, consultations, community votes, participatory planning, and monitoring initiatives under the People's Process approach. A comprehensive list of indicators is included in the Gender Action Plan (Table 52). The main gender-focused indicators the project will aim to achieve (Table 26 (Result Framework), Table 52 (GAP)):

- 30 - 50% of trainees at all training/workshops and learning events will be female.
- 60% of beneficiaries who report more secure, year-round access to markets will be female.
- 40% of farmer beneficiaries who manage demonstration plots/value-chain pilots will be women and youth.

1. Component 1: Building Institutional Capacity for Inclusive Climate Governance and Protected Area Management

94. Outcome 1: *Local and sub-national institutions demonstrate improved capacity to plan, budget for, and implement inclusive, risk-informed adaptation actions in protected and climate-vulnerable landscapes.*

This component seeks to build a strong institutional foundation for climate adaptation by targeting the systemic capacity gaps at the community and sub-national levels. Recognising the fragmented climate governance landscape in Cambodia—where Commune Investment Plans (CIPs) and Community Protected Area (CPA) Plans often lack integration of climate risk, gender equity, and Indigenous perspectives—this component delivers coordinated training, planning tools, and vocational education. It empowers local decision-makers, CPA committees, and frontline communities to become active agents in adaptation. This enables improved planning, cross-sector coordination, and equitable resource allocation that will ensure long-term sustainability of interventions implemented in Components 2 and 3.

95. Output 1.1. Community capacity-building programme implemented in target districts to maintain climate-resilient infrastructure, manage eco-tourism, and monitor ecosystem assets, with at least 40% participation (of 300 participants) from women, youth, and indigenous groups (to support sustainable implementation of interventions under Components 2 and 3)

This output focuses on implementing structured training and awareness programs tailored to the needs of local communities, with a specific emphasis on supporting the sustainable operation of climate-resilient infrastructure and eco-tourism ventures, including fire management, protected area co-management, and native plant propagation. One focus of the training will be on the UN-Habitat People's Process to strengthen the capacity of the Chambak community further. Communities and other project locations will be mentored by this community in community organisation and community asset management. The training will include modules on infrastructure maintenance (e.g., pond and canal upkeep), ecosystem monitoring, community-led tourism services, and solid waste management. At least 40% of participants (among 300 total participants) will be women, youth, and Indigenous groups to redress historic exclusion and strengthen social cohesion. This foundational capacity-building will underpin the implementation success of physical and livelihood interventions in later components. Potential activities include defining trainees, training needs assessment, training curriculum and materials preparation, and first and refresher training.

96. Output 1.2 Commune councils and CPA committees trained in climate-informed investment planning, integrating adaptation budgeting, local risk mapping, and disaster response protocols into Commune/Sangkat Investment Plans (CIPs) and Protected Area Plans.

This output will deliver targeted training for local government (Commune/Sangkat Councils) and Community Protected Area (CPA) committees on integrating climate risk assessments, adaptation priorities, and disaster response protocols into Commune Investment Plans (CIPs) and CPA Management Plans. Mainstreaming climate change adaptation can make development and societies more resilient to the impacts of climate change, and to current climate variability and extremes, which are of immediate concern and relevance. Furthermore, prioritising and embedding climate change adaptation across all levels of development planning not only strengthens adaptive capacity but also unlocks synergies that enhance resilience and deliver long-term developmental benefits. Therefore, strengthening the capacity of provincial and sub-national government entities, as well as CPA Committees, to mainstream climate change adaptation is essential for ensuring the long-term sustainability and resilience of proposed interventions. Through participatory risk mapping and planning sessions, local institutions will be better equipped to access national adaptation funding, coordinate multi-sectoral responses, and reflect local priorities in governance frameworks. Two trainings (first and refresher trainings) will be conducted with 315 participants¹²⁸ among whom 30% will be women. Potential activities include defining trainees, training needs assessment, training curriculum and materials preparation, and first and refresher training.

97. Output 1.3 Vocational training centre established (in Te Teuk Pus) and operated to train 400 beneficiaries (at least 200 women), emphasising youth and marginalised groups, annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques.

A permanent vocational training centre, including a few rooms and a space for crafting/exhibition/cultural performance, will be constructed with green technology, such as solar power and rainwater harvesting tanks, and operated in Te Teuk Pus, serving as a hub for climate-resilient skills development. At least 400 people, emphasizing youth and

¹²⁸ In average, 10 members for each commune council and 15 members for each CPA Committee

marginalized groups, and including 200 women will receive training in practical vocations aligned with local adaptation needs, including solar panel repair, eco-tourism guiding to the highest mountain in Cambodia (Phnom Aoral) and the only hot spring in Cambodia (Te Teuk Pus), digital literacy for climate information access, making of bamboo products, local product marketing, handicrafts, eco-guiding, cooking, climate-smart agriculture, digital marketing, solid waste management, etc. Also, forest rangers will receive training in the use of mobile alert systems, fire detection tools, and in developing real-time surveillance protocols. Potential activities include site inspection and consultation, detailed design and BoQ preparation, a construction vocational training centre with youth participation, and post-site inspection.

2. Component 2: Promoting Climate-Resilient Livelihoods through Climate-Smart Agriculture and Eco-Economy Solutions

98. Outcome 2: *Vulnerable households, including women, youth, and Indigenous groups, adopt diversified and climate-resilient livelihood strategies linked to sustainable agriculture, forest products, and green tourism value chains.*

Component 2 addresses the urgent need for economic resilience in climate-vulnerable districts where dependence on rain-fed agriculture and forest-based extraction is high. Recognising the growing fragility of these livelihoods due to drought, biodiversity loss, and market shocks, this component introduces sustainable alternatives rooted in agroecological practice, Indigenous knowledge, and value-added eco-economy models. It promotes gender-responsive and youth-inclusive interventions to bridge the intergenerational knowledge gap and reduce migration pressures. By linking climate-smart agriculture with emerging green tourism markets, it aims to create diversified income streams that are less susceptible to climate shocks and more aligned with conservation. Under an Agreement of Cooperation (AoC) with the Ministry of Environment (the Executing Entity), this component will be implemented by qualified NGOs with proven track records in climate-smart agriculture and livelihood diversification.

99. Output 2.1 Market and climate vulnerability assessments conducted to identify inclusive and gender-responsive value chains in drought-resilient crops, agroforestry, and non-timber forest products, incorporating indigenous knowledge.

Baseline assessments will be conducted in three locations to identify viable, gender-responsive, and Indigenous knowledge-based value chains in crops, non-timber forest products, and ecotourism services. These assessments will use participatory approaches to understand climate exposure, market barriers, and household constraints. The results will guide targeted support to livelihood strategies with the highest potential for resilience and inclusiveness. Potential activities include assessment form preparation, conducting market/climate vulnerability assessments, and report preparation summarising the assessment results.

100. Output 2.2 At least 100 households (min. 40% women) trained in climate-smart agriculture, including agroecological practices such as organic composting, intercropping, and water-saving irrigation.

At least 300 participants from at least 100 households, 40% of whom will be women, will be trained in locally appropriate, low-cost, and water-efficient agroecological practices. Training will include intercropping, composting, and drip or treadle-pump irrigation. These practices aim to stabilise yields, rebuild soil fertility, and reduce reliance on chemical inputs, thereby enhancing adaptive capacity under climate variability. Potential activities include defining trainees, training needs assessment, training curriculum and materials preparation, and first and refresher training.

101. Output 2.3 Demonstration plots and value-chain pilots (at least 3 per district) established and managed jointly by youth and elder farmers to promote intergenerational learning in climate-resilient livelihoods.

A minimum of three demonstration plots per district will be co-managed by youth and older farmers, showcasing integrated climate-resilient practices and small-scale processing (e.g., organic vegetables, mangoes, bamboo, and cardamom, resin collection, herbal products, organic produce). Cardamom can be strategically sold as “Cardamom from the Cardamom Mountain”. These platforms will foster peer-to-peer learning, intergenerational knowledge exchange, and piloting of market linkages, creating visible models for scale-up across the province. Potential activities include identification of the proper demonstration plots, selection of farmers and youth for pilots, and demonstration of climate-smart agriculture.

3. Component 3: Restoring Ecosystems and Building Climate-Resilient Infrastructure in Protected and Eco-Tourism Landscapes

102. Outcome 3: *Ecosystems and critical rural infrastructure in protected and eco-tourism zones are restored and made climate-resilient, reducing environmental degradation and enhancing the adaptive capacity of local communities.*

This component tackles the interconnected degradation of ecological and infrastructural systems that underpin rural resilience. With protected areas suffering from erosion, fire, biodiversity fragmentation, and seasonal water stress, the component delivers physical investments in ecosystem restoration and green infrastructure. The approach integrates nature-based solutions (e.g., reforestation, firebreaks, and sediment traps) with climate-smart upgrades to ponds, canals, and climate-resilient WASH facilities. The result is a strengthened ecological buffer and improved service delivery to climate-vulnerable households, while creating opportunities for eco-tourism and natural resource stewardship. Unskilled and semi-skilled community labourers will be mobilised for low-tech construction and maintenance tasks (e.g., eco-trail signboard installation, native tree seed collection and growth, nursery-supported native reforestation). Through Community Contracting, CPA Committees will oversee the entire management of the construction process, including monitoring, accounting, and reporting.



Figure II.1 Development Plan of Te Teuk Pus (Source: Ministry of Environment (May 2026))

a. In Te Teuk Pus

103. The Te Teuk Pus geothermal area in Kampong Speu Province stands as a rare ecological and geophysical asset in Cambodia, valued for its natural hot springs, cultural significance, and growing potential as an eco-tourism destination. However, this unique geothermal system is increasingly vulnerable to the impacts of climate change. The rise of mean annual temperature, leading to shifts in hydrological cycles and reduced groundwater recharge, may diminish the flow or alter the temperature stability of the hot springs. Additionally, rising salinity in groundwater, observed in other lowland areas due to prolonged dry seasons, poses a latent threat of contamination to these spring-fed pools. Compounding these concerns, climate-induced droughts and flash floods are degrading surrounding riparian habitats. Te Teuk Pus's geothermal ecosystem makes it ideal for proactive climate adaptation. By combining watershed restoration, climate-smart infrastructure, and community stewardship, the area can remain resilient, protecting both biodiversity and sustainable livelihoods.

104. This proposed Project selected four hard interventions based on local needs identified through stakeholder consultations and aligns with the MoE's master plan for the Te Teuk Pus geothermal area development (Figure II.1).

105. Output 3.1 Te Teuk Pus geothermal area rehabilitated through sediment removal, slope stabilisation, eco-trail improvements, and solar-powered lighting, with indigenous Suoy communities co-managing the process.

This includes ecological restoration of the hot spring site through sediment removal, slope stabilisation, 2 km eco-trail improvements, native vegetation landscaping, creation of public space, and installation of 100 units of solar-powered lighting (approx. 20m distance between lights). The intervention enhances visitor safety and preserves geothermal functions, while engaging Indigenous Suoy communities in co-management, reinforcing cultural preservation and local ownership. Possible activities include site inspection and consultation, detailed design, sediment removal, slope stabilisation, eco-trail improvements, solar lighting installation, field monitoring, and post-site inspection.

106. Output 3.2 Biodiversity corridor established within 57 hectares, linking degraded forest patches with native reforestation using nursery-supported species of ecological and livelihood value.

To restore habitat connectivity, a biodiversity corridor within 57 hectares (Te Teuk Pus) will be developed, linking fragmented forest patches. Native, nursery-raised species with ecological and economic value (e.g., bamboo, rattan, fruit trees, medicinal herbs, cardamom cultivation) will be planted in degraded zones, improving climate regulation, carbon storage, and wildlife corridors. The biodiversity corridor will include a nursery, a public green space, a playground, and a solid waste management facility. Possible activities include site inspection and consultation, detailed design, biodiversity corridor establishment, establishment of the regional nursery/public green space/playground, seed collection and growing, tree plantation, field monitoring, and post-site inspection.

b. In Aoral District

107. The rehabilitation of village ponds and irrigation canals with climate-resilient features directly addresses the growing climate-induced water stress in the Aoral District, where erratic rainfall, prolonged dry spells, and seasonal flooding increasingly undermine agricultural productivity and household water security. By rehabilitating at least 10 village ponds with elevated bunds and sediment traps, the project ensures reliable year-round water storage while minimising erosion and contamination during extreme rainfall events. Similarly, the targeted rehabilitation of irrigation canals and water gate will stabilise dry-season flow for farmland irrigation and enhance flood control during the peak

monsoon months, thereby safeguarding critical livelihood infrastructure for vulnerable upland communities. These interventions employ participatory, low-cost design approaches that have proven effective in prior Adaptation Fund projects in Cambodia and will be co-managed by local CPA committees and commune councils.

108. Output 3.3 At least 10 village ponds rehabilitated with climate-resilient design features (e.g., raised bunds, sediment traps) to support year-round water access for agriculture and domestic use.

Ten degraded water storage ponds will be redesigned with climate-smart features such as sediment traps, raised embankments, and solar pumping to ensure year-round access to safe water for farming and domestic needs. Possible activities include site inspection and consultation, a detailed schedule, village pond rehabilitation, field monitoring, and post-site inspection.

109. Output 3.4 3 irrigation canals (3 km) and 1 water gate rehabilitated in Aoral District with community participation and design standards for dry-season flow retention and flood management.

Three canals (a total of three km), including small channels, and one water gate will be upgraded using watershed-based planning and participatory design. These interventions will increase dry-season irrigation coverage, enhance flood buffering capacity, and prevent water loss, directly benefiting multiple farming communities. Based on a technical assessment in May 2026, the target distance was reduced from 7 km at the CN stage to 3 km. The assessment revealed a major elevation mismatch where the canal sits higher than the water gate, preventing proper water flow. To resolve this, the Project reallocated resources to invest in necessary elevation realignment, an engineering requirement that was unforeseen during the CN design phase. Possible activities include site inspection and consultation, a detailed schedule, and establishment of irrigation canals and rehabilitation of a water gate, field monitoring, and post-site inspection.

c. In Phnum Sruoch District

110. Phnum Sruoch District, located within the Kirirom National Park landscape, plays a vital role in Cambodia's climate change adaptation efforts, particularly for vulnerable rural communities facing recurrent droughts and flash floods. Agriculture—especially the cultivation of high-value Jasmine rice—has been severely affected by erratic rainfall and water scarcity. However, the presence of a perennial waterfall presents an opportunity to develop a climate-resilient irrigation solution by diverting water through a canal system to nearby agricultural fields, enhancing productivity and food security. Importantly, the government has formally granted forest stewardship rights to six villages in this section of the park, recognising the critical role of local communities in protecting and managing natural resources. Strengthening community-led forest conservation and upgrading eco-trails would not only safeguard biodiversity and reduce erosion risks, but also enhance eco-tourism potential—creating diversified, climate-resilient livelihoods. This integrated approach—linking water access, sustainable agriculture, and community-based forest governance—positions Phnum Sruoch as a model for locally led adaptation in protected area settings.

111. Output 3.5 Eco-trail rehabilitation with integrated firebreak function (1.5 km) constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.

1.5 km of firebreaks and trails will be built to reduce wildfire risk, improve emergency access, establish public space, and enhance tourism appeal. Safety infrastructure, such as railings and signage, will support both ecological protection and visitor management. The 300m trails will be improved with NbS footsteps using local material, 500m handrail will be installed in steep segments. Signage includes the entrance rules, the distance to the waterfall, rest areas, and a warning for unsuitable behaviour. Possible activities include site inspection and consultation, detailed design preparation, preparation of community contracts, community mobilisation, construction of firebreaks/eco-trails, installation of signage and solid waste containers, field monitoring, and post-inspection.

112. Output 3.6 Irrigation systems upgraded using watershed-based design to optimise dry-season storage, flood buffering, and equitable distribution across farm plots.

Existing systems will be upgraded with hydrologically sound, equitable distribution schemes to optimise limited water availability during droughts and reduce flood-related runoff during peak rains. This will require the construction of a rock dam and the improvement of three irrigation branch canals. Possible activities include site inspection and consultation, detailed design preparation, bidding, upgrading the existing irrigation systems, field monitoring and post-inspection.

d. In Phnum Sruoch District and Te Teuk Pus

113. Output 3.7 Climate-resilient WASH facilities built in Chambak Commune of Phnum Sruoch District (16 units) and Te Teuk Pus geothermal area (2 units) with water supply connection, climate-smart design (e.g., elevated latrines), menstrual hygiene spaces, and universal access features for women and persons with disabilities.

18 units of latrines with water supply connection will be constructed in 6 priority villages in Chambak Commune of Phnum Sruoch District (16 units) and Te Teuk Pus geothermal area (2 units) with menstrual hygiene stations and water points using universal design standards. To ensure the long-term structural and environmental resilience of the WASH facilities against climate-induced flooding and seasonal water scarcity, the infrastructure will integrate climate-smart engineering features, including rainwater harvesting systems for alternative water sourcing, flood-proof closed-loop septic systems, and autonomous solar-powered lighting to guarantee safe, inclusive, and gender-responsive access. These facilities will reduce exposure to health risks and enhance dignity and inclusion for women, girls, and persons with disabilities. This output also involves fixing the current public water treatment plant and water

supply systems from the commune's primary water source to provide access to clean water for households in Chambak. Possible activities include site inspection and consultation, detailed design preparation, construction of WASH facilities, public water supply system repair and extension, field monitoring and post-site inspection.

4. Component 4: Capturing, Sharing, and Scaling Adaptation Knowledge for Sustainability and Replication

114. Outcome 4: *Adaptation knowledge and locally led solutions are documented, disseminated, and integrated into sub-national and national strategies to promote replication, policy uptake, and long-term sustainability.*

This component ensures that the knowledge generated through Components 1–3 is not confined to the project area but becomes a catalyst for broader adaptation impact across Cambodia. It focuses on inclusive communication, policy mainstreaming, and cross-sector dialogue to embed tested models into governance systems. In rural Cambodia, low literacy and limited access to government information are critical barriers to adaptation, particularly for Indigenous and forest-dependent communities. By ensuring that adaptation knowledge is localised, translated, and distributed through culturally appropriate channels, the project helps bridge this information gap. By producing multi-lingual, accessible knowledge materials and conducting replication dialogues, the component builds national momentum for scale-up and alignment with the National Adaptation Plan and Environment Strategy 2023–2033.

115. Output 4.1 Project lessons and technical knowledge (translated into Khmer, Suoy), audio, and video formats for inclusive dissemination among non-literate and marginalised populations.

Share knowledge and lessons through documentation of climate-resilient actions for increased adaptive capacities. Knowledge sharing for evidence-based climate change adaptation is key to reducing vulnerabilities, as knowledge sharing activities enhance understanding of best practices in climate change adaptation. The material produced will be disability inclusive. All key project results—technical guidelines, case studies, community innovations—will be captured and translated into Khmer and Suoy, with simplified versions in audio and video formats. These resources will be distributed to non-literate and marginalised populations through local media, schools, and CPA networks. Possible activities include the formulation of knowledge products and dissemination through several channels.

116. Output 4.2 Replication workshops conducted with district, provincial, and national actors (30% women) to integrate lessons into Commune Investment Plans, National Adaptation Plan, and Environment Strategy 2023–2033.

A series of inclusive workshops (four workshops and 400 participants) conducted at district, provincial, and national levels (ensuring 30% women participation) will showcase project outcomes and advocate for integration into CIPs, Protected Area Management Plans, and national strategies. Lessons will feed directly into the implementation of the National Adaptation Plan and future Adaptation Fund pipelines. Possible activities include organising replication workshops and advocating for the project to wider stakeholders.

Table 7 Concrete interventions and supporting activities
(corresponding to prioritized resilience building interventions in the above)

Concrete interventions/activities Detailed activities (for more details, see environmental and social risks screening sheets in Annex B)	District	Target		Estimated number of beneficiaries Direct & Indirect	Estimated cost (US\$) and the cost-effectiveness of direct beneficiaries	Dimensions	Description (incl. relevant info for risk screening)
		Communes	CPAs				
Output 1.3 Vocational training centre established (in Te Teuk Pus) and operated to train 400 beneficiaries (at least 200 women), emphasising youth and marginalised groups, annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques	Aoral (Te Teuk Pus)	Trapeang Chour & Ta Sal	CPA	Direct: 400 (Women: 200) Indirect: 167,222 (Women:85,594)	Cost: 681,100 Cost effectiveness: 1,700	A vocational training centre with a few rooms and spaces for handicraft practice and exhibition.	Land status: public
Output 2.3 Demonstration plots and value-chain pilots (at least 3 per district) established and managed jointly by youth and elder farmers to promote intergenerational learning in climate-resilient livelihoods	Aoral and Phnum Sruoch	Aoral: 5 communes Phnum Sruoch: 13 communes	9 CPAs	Direct: 500 (Women: 200) Indirect: 167,222 (Women:85,594)	Cost: 500,000 Cost effectiveness: 1,000	Strategic 6 pilot sites (at least 3 per district) will be selected through stakeholder consultation and the field assessments at the project implementation stage.	Land status: Private (Selected through a transparent process with specific selection criteria)
Output 3.1 Te Teuk Pus geothermal area rehabilitated through sediment removal, slope stabilisation, 2 km eco-trail improvements, and 100 units of solar-powered lighting, with indigenous Suoy communities co-managing the process.	Aoral (Te Teuk Pus)	Trapeang Chour & Ta Sal	Ko Daun Tey CPA	Direct: 23,407 (Women: 8,292) Indirect: 43,591 (Women: 22,432)	Cost: 1,800,000 Cost effectiveness: 79.2	At least 3 ha	Land status: public
Output 3.2 Biodiversity corridor established within 57 hectares, linking degraded forest patches with native reforestation using nursery-supported species of ecological and livelihood value.	Aoral (Te Teuk Pus)	Trapeang Chour & Ta Sal	Ko Daun Tey CPA	Direct: 23,407 (Women: 8,292) Indirect: 43,591 (Women: 22,432)	Cost: 650,000 Cost effectiveness: 28.6	Degraded area within 57 ha	Land status: public
Output 3.3 At least 10 village ponds rehabilitated with climate-resilient design features (e.g., raised bunds, sediment traps) to support year-round water access for agriculture and domestic use.	Aoral	8 CPAs	8 CPAs	Direct: 4,300 (Women: 2,200) Indirect: 43,591 (Women: 22,432)	Cost: 250,000 Cost effectiveness: 58.1	10 strategic ponds will be selected during the project implementation stage.	Land status: public
Output 3.4 3 irrigation canals (3 km) and 1 water gate rehabilitated in Aoral District with community participation and design standards for dry-season	Aoral	Ta Sal	Tasal CPA	Direct: 1,005 (Women: 527)	Cost: 750,000	3 canals, including small channels, and 1 water gate	Land status: public

flow retention and flood management.				Indirect: 8,420 (Women: 4,272)	Cost effectiveness: 89.2		
Output 3.5 Eco-trail rehabilitation with integrated firebreak function (1.5 km) constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.	Phnum Sruoch	Chambak	Chambak CPA	Direct: 2,089 (Women: 1,540) Indirect: 4,053 (Women: 2,049)	Cost: 1,750,000 Cost effectiveness: 437.5	1.5 km of eco-trail/firebreaks, including 500 m of handrails, and 300m NbS footsteps At least 10 signage	Land status: public
Output 3.6 Irrigation systems (2 km) upgraded using watershed-based design to optimise dry-season storage, flood buffering, and equitable distribution across farm plots.	Phnum Sruoch	Chambak	Chambak CPA	Direct: 4,053 (Women: 2,049) Indirect: 123,631 (Women: 63,162)	Cost: 250,000 Cost effectiveness: 62.5	2km	Land status: public
Output 3.7 Climate-resilient WASH facilities built in Chambak Commune (16 units) and Te Teuk Pus geothermal area (2 units) with water supply connection, climate-smart design (e.g., elevated latrines), menstrual hygiene spaces, and universal access features for women and persons with disabilities.	Phnum Sruoch and Te Teuk Pus	Aoral: Trapeang Chour & Ta Sal Phnum Sruoch: Chambak	2 CPAs	Direct: 3,415 (Women: 2,149) Indirect: 27,460 (Women: 14,003)	Cost: 850,000 Cost effectiveness: 212.5	18 WASH facilities with public water supply connection	Land status: public

B. Economic, social, and environmental benefits of proposed programme

1. Project Beneficiaries

117. The proposed project will directly benefit an estimated 32,360 individuals (approximately 6,472 households) residing in 18 forest-edge communes within Aoral and Phnum Sruoch Districts of Kampong Speu Province. These beneficiaries will be supported through a range of interventions, including training, nature-based infrastructure, ecosystem restoration, and climate-resilient livelihood programmes. Of the total direct beneficiaries, it is anticipated that at least 30 to 50% will be women, 20% will be youth (ages 15–30), and no less than 5% will be persons with disabilities or their caregivers, ensuring inclusive and equitable targeting. Beyond these, the project will yield substantial indirect benefits to downstream communities through watershed rehabilitation, as well as to local businesses and tourists utilising enhanced eco-tourism facilities. Additional indirect beneficiaries include stakeholders engaged in sustainable value chains, market access systems, and community-based adaptation practices. Institutional beneficiaries will comprise nine Community Protected Areas (CPAs), 18 Commune Councils, the Kirirom National Park Management Authority, and several community-based organisations. These institutions will be capacitated through technical training, participatory planning tools, climate financing support, and coordination mechanisms. By reinforcing their ability to manage natural resources and climate risks, the project will anchor long-term resilience and sustainability outcomes at the institutional level.

2. Economic Benefits

118. The project will deliver robust and sustained economic benefits to forest-dependent communities in Aoral and Phnum Sruoch Districts by promoting diversified, climate-resilient livelihoods and essential infrastructure. By introducing drought-tolerant crops, agroforestry systems, and integrated soil and water management practices, the project will enhance agricultural productivity, mitigate crop losses from climate shocks, and improve household food security. Concurrently, targeted training in non-timber forest product (NTFP) processing, organic vegetables/bamboo/cardamom production, as well as eco-tourism services and nature-based enterprise development, will expand alternative income streams, especially for women and youth in upland areas. The rehabilitation of irrigation canals, water gates, and ponds will boost dry-season farming and reduce flood-induced crop damage, helping stabilise incomes. Support for climate-resilient community cooperatives and improved market access will enable economies of scale, fairer pricing, and stronger bargaining power for small producers. Additionally, investments in small-scale solar-powered infrastructure (lighting, pumping) and water storage systems will lower household expenditures, enhance service access, and catalyse local employment in green sectors. Overall, the project will strengthen community economic resilience, reduce reliance on unsustainable forest exploitation, and foster inclusive local development.

119. Table 8 already quantifies these economic benefits: at least 100 farmers will gain climate-smart agriculture skills; over 8,300 farmers, including 4,200 women, will increase production at farm plots benefiting from the Output 3.4 and 3.6 irrigation upgrades; and at least 500 beneficiaries will increase income from eco-tourism through the hospitality and management training under Output 1.3.

120. Risk of negative outcomes: increased visitor access resulting from eco-trail and Te Teuk Pus infrastructure improvements could accelerate the same environmental degradation the project seeks to reverse; the mitigation measure will be a visitor-carrying-capacity plan co-developed with the CPA committees. There is a risk that participation requirements increase the time burden on women, who Section 5 documents as responsible for the majority of domestic and caregiving work in Kampong Speu Province; the mitigation measure will be the scheduling flexibility already used in the consultations recorded in Table 16, continued through implementation and tracked by the PEU Gender Focal Point. There is a risk that benefit capture by better-connected households could exclude the most vulnerable, including female-headed and Indigenous Suoy households; the mitigation measure will be transparent, criteria-based beneficiary selection, described below and validated through the Local Commune Committees.

121. Beneficiary selection criteria: within the 32,360-person beneficiary base (Table 8), selection applies transparent, community-validated criteria prioritising households below the national poverty line, female-headed households, and Indigenous Suoy households, as well as households adjacent to the nine CPAs listed in Table 5. Selection is verified through the Local Commune Committees and published at the commune office, consistent with the participatory validation approach already used for site selection (Table 17).

3. Social Benefits

122. Gender Analysis (Annex D). Women comprise 51.8% of Kampong Speu's population, and 25.1% of households are female-headed; a 2019 survey found that 34% of women reported no involvement in major household purchasing decisions, and 19.1% of women aged 15–49 reported experiencing intimate-partner violence. Women in the project area hold primary responsibility for water collection, small-scale farming, and informal tourism vending, while men have greater access to paid construction and agricultural labour. The Gender Action Plan (Table 52, Annex D) sets the pathway for these dynamics to shift over the project period, using the 30% representation targets set for the PEU, PPWG and LCC (Part III.A) and the women-only consultation formats already used during project preparation.

Table 8 Beneficiaries and dimensions of the outputs (preliminary estimate)

Output	District	Estimated beneficiaries		
		Direct (A)	Direct beneficiary overlaps between activities	Indirect
1.1	Aoral and Phnum Sruoch	300 (Women: 120)	Unique beneficiaries without overlapping: 300 (120)	167,222 (Women:85,594)
1.2		315 (Women: 95)	300 (120) beneficiaries overlapped (Output 1.1) Unique beneficiaries without overlapping: 15 (0)	167,222 (Women:85,594)
1.3	Aoral (Te Teuk Pus)	400 (Women: 200)	300 (120) beneficiaries overlapped (Output 1.1) Unique beneficiaries without overlapping: 100 (80)	12,329 (Women: 6,170)
2.1	Aoral and Phnum Sruoch	150 (Women:75)	315 (35) beneficiaries overlapped (Output 1.2) Unique beneficiaries without overlapping: 0 (40)	167,222 (Women:85,594)
2.2		500 (Women: 200)	Unique beneficiaries without overlapping: 500 (200)	12,329 (Women: 6,170)
2.3		500 (Women: 200)	500 (200) beneficiaries overlapped (Output 2.2)	167,222 (Women:85,594)
3.1	Aoral (Te Teuk Pus)	23,407 (Women: 8,292)	400 (200) beneficiaries overlapped (Output 1.3) Unique beneficiaries without overlapping: 23,007 (8,092)	43,591(Women: 22,432)
3.2		23,407 (Women: 8,292)	23,407 (8,292) beneficiaries overlapped (Output 3.1)	43,591(Women: 22,432)
3.3	Aoral	4,300 (Women: 2,200)	Unique beneficiaries without overlapping: 4,300 (2,200)	43,591(Women: 22,432)
3.4		1,005 (Women: 527)	1,005 (527) beneficiaries overlapped (Output 3.3)	8,420 (Women: 4,272)
3.5	Phnum Sruoch	2,089 (Women: 1,540)	Unique beneficiaries without overlapping: 2,089 (1,540)	4,053 (Women: 2,049)
3.6		4,053 (Women: 2,049)	2,089 (1,540) beneficiaries overlapped (Output 3.5) Unique beneficiaries without overlapping: 1,964 (509)	123,631(Women: 63,162)
3.7	Phnum Sruoch and Aoral (Te Teuk Pus)	3,415 (Women: 2,149)	3,415 (2,149) beneficiaries overlapped (Outputs 3.3 and 3.6)	27,460 (Women:14,003)
4.1	Phnum Sruoch and Aoral	N/A	N/A	N/A
4.2		400 (Women: 120)	315 (35) beneficiaries overlapped (Output 1.2) Unique beneficiaries without overlapping: 85 (85)	N/A
TOTAL	2 districts	64,241 (Women: 25,999)*	32,360 (Women: 12,866)**	167,222 (Women: 85,594)***

* Total number of direct beneficiaries includes duplicated beneficiaries.

** Total direct beneficiaries (excluding overlapping populations) increased compared to the CN stage. This revision is based on a May 2026 technical assessment of potential benefit areas and subsequent consultations with local stakeholders.

*** Total population of the two target districts

Targets are expressed as “at least” minimum thresholds because the same process that produced this figure — refined engineering surveys, community in-kind labour contributions (Part II.J), and the cost efficiencies of UN-Habitat’s Community Contracting model (up to 30% cost reduction, described above) — may allow additional households to be reached within the approved USD 10,000,000 envelope, without lowering the per-beneficiary investment standards set out in this table. [Inserted in response to AF Secretariat CR5.]

“Overlapping populations” (see footnote above) refers to individuals already counted under an earlier output who reappear in a later output’s direct-beneficiary count; the de-duplicated total of 32,360 direct beneficiaries is the figure used consistently elsewhere in this proposal.

Table 9 Summary of economic, social, and environmental benefits of adopting a gendered approach

Benefit Type	Baseline	Benefits of project actions	Estimated benefits in numbers
Economic	- Households in the project target districts rely heavily on rain-fed agriculture and forest product collection, which are increasingly vulnerable to drought, erratic rainfall, and land degradation.	- The project promotes climate-smart agriculture, NTFP value chains, and eco-tourism, creating sustainable income for vulnerable households. - Women, Indigenous people and youth are trained in micro-enterprise and vocational skills. - Water storage, trails, and solar systems reduce production and transaction costs while reducing forest pressure.	- At least 100 farmers enhance their understanding and skillset on climate-smart agriculture. - Farmers residents the vicinity of the target 9 pilot areas increase market access and production with market value. - Over 8,300 farmers, including 4,200 female farmers, increase production at farm plots with increased irrigation water during the dry season (Outputs 3.4 and 3.6).

	- Women, youth, and Indigenous people face constrained livelihood options, limited access to finance, and weak integration into markets. - There is a lack of irrigation infrastructure, value chains, or skills training to support diversified, climate-resilient livelihoods.	- Improved household incomes and access to assets strengthen financial resilience.	- At least 500 target beneficiaries increase income from eco-tourism through capacity-building on soft skills (e.g. management, hospitality).
Social	- Mountain communities, including Indigenous Suoy Communities, face poor road access, inadequate health and education services, and limited participation in decision-making. - Climate impacts increase water and food insecurity, especially for women and the poor. - Social cohesion is weakened by migration and land tenure conflicts. - People with disabilities are often excluded from planning and services.	- Inclusive local adaptation planning promotes participation of women, youth, and marginalised groups. - Improved access to water, energy, and food - Security enhances community health, cohesion, and well-being. - Training and awareness campaigns build risk knowledge and strengthen institutional trust. - Gender-sensitive and accessible infrastructure reduces social exclusion. - Preserve indigenous cultures and enhance their participation in community development.	- 40,976 (25,249 of which will be women) will be protected from climate hazards (e.g. drought and forest fire). - About 500 most vulnerable households (Half of Chambak Commune) increase clean water access through public water supply system extension and existing treatment plant repair. - Biodiversity corridor establishment, including public space and reforestation activities, will minimise climate risks through providing shade/ cooling via evapotranspiration, while preventing the indigenous assets from strong winds. - Health and safety risks, especially for women and girls, will be minimised through the installation of proper streetlighting and gender sensitive & disability inclusive WASH facilities. - 300 persons (at least 30% of whom will be women) will participate in capacity-building and awareness-raising training annually.
Environmental	- Forests in protected areas are degraded due to illegal logging, fire, and unsustainable extraction. - Watersheds are affected by erosion, reduced flow, and biodiversity loss. - Fire and drought events are increasing in frequency and intensity, threatening long-term ecosystem services.	- Forest and watershed restoration within 57 hectares improves biodiversity, soil retention, and water regulation. - Energy-efficient solar lighting reduces forest pressure and emissions. - Ecosystem-based approaches and community fire control measures restore ecological functions. - Nature-based solutions increase landscape-scale resilience. - Less risk of illegal deforestation and forest fire through improved skills and knowledge of forest rangers and communities, early warning and mobile alert systems.	- Degraded areas within 57 ha of forest protected areas will be restored with nursery-supported native reforestation. - 2 solid waste management facilities at Te Teuk Pus and waste containers at two designated disposal points in the eco-trail reduce the risk of land and water contamination. - About 3,415 people, including (Women: 2,149 to benefit from gender-sensitive and disability-inclusive WASH facilities).
Benefits for Women Empowerment, Youth, and Persons with Disabilities		- Direct support for the reactivation or formulation of women-led and youth-led eco-tourism enterprises. - Priority targeting of female-headed households (FHHs) for training, grants, and leadership roles. - Inclusive training programs adapted for Indigenous women and non-literate participants - Accessible design elements considered for eco-tourism and livelihood infrastructure. - Youth participation in innovation pilot grants and ecosystem restoration activities. - Encouragement of persons with disabilities to engage in NTFP value chains, eco-crafts, and adapted employment opportunities.	-

123. The project aims to reduce multidimensional poverty and enhance human well-being in underserved, climate-exposed upland communities. Improved access to water, sanitation, and clean energy will reduce the daily time and health burdens that women and girls bear. In contrast, climate-smart technologies will improve hygiene, productivity, and quality of life. By embedding participatory planning at all levels—from commune investment planning to CPA committee decisions—the project will empower communities to shape and own their adaptation pathways, fostering trust, accountability, and inter-village cooperation. Residents will be actively involved in managing reforested landscapes, maintaining firebreaks, and providing eco-tourism services, which will promote stewardship and restore traditional custodianship roles. Community-based training, awareness campaigns, and institutional support will strengthen governance systems, enhance disaster preparedness, and build collective capacity for managing climate risks. Significantly, the project will reinforce local identity and cultural continuity—particularly among Indigenous and forest-edge communities—through preservation of ecological knowledge, community mapping, and sustainable use of forest resources. These socially anchored approaches ensure long-term resilience and replicability across similar forested landscapes in Cambodia.

4. Environmental Benefits

124. The restoration of degraded areas within 57 hectares of degraded forests and watershed areas will regenerate critical ecosystem services, including carbon sequestration, slope stabilisation, flood buffering, and biodiversity protection. Reforestation with native species and slope-stabilising vegetation will reduce erosion and sedimentation, restore habitat connectivity, and mitigate downstream flood risks. Utilisation of forest trails as natural firebreaks, combined with fire risk mapping, will decrease wildfire occurrence and improve overall ecosystem health. By promoting energy-solar lights, the project will reduce energy and financial consumption and lower emissions. Awareness and capacity-building programs for community forest rangers, including the use of mobile alarm and early warning systems, will enhance surveillance, reduce illegal logging, and improve compliance with protected area regulations. These interventions are closely aligned with Cambodia's Nationally Determined Contributions (NDCs) and biodiversity strategies, contributing to national climate goals while enhancing the adaptive capacity of natural and human systems.

5. Gender Equality, Youth Empowerment, and Social Inclusion

125. The project will be mainstream gender equality, youth leadership, and social inclusion across all components. At least 30 to 50% of all livelihood beneficiaries and training participants will be women, with targeted support for women-led businesses and leadership in community planning and decision-making at the CPA and commune levels. The project will prioritise reducing poverty, enhancing income control, and expanding the agency of women and girls, particularly in sectors like eco-tourism, agro-processing, and community planning.

126. Youth will benefit from green skills development programs—including solar repair, digital marketing, biodiversity monitoring, and eco-guiding—enhancing employability in sustainable sectors and reducing climate-induced migration. Persons with disabilities and caregivers will be invited for capacity-building training, consulted during all village-level planning processes, and accessible infrastructure will be designed, including elevated latrines, clean water access points, and off-grid energy systems. All awareness, planning, and training materials will be adapted into inclusive formats and local languages (Khmer and Suoy) where feasible.

127. The project directly contributes to Cambodia's achievement of multiple Sustainable Development Goals, particularly SDG 1 (No Poverty) through livelihood diversification and rural income generation, SDG 5 (Gender Equality) by prioritising women's participation and leadership in adaptation planning, and SDG 13 (Climate Action) by reducing community vulnerability to climate risks through ecosystem-based and locally led solutions. Environmental co-benefits from forest and watershed restoration also advance SDG 15 (Life on Land) by reversing land degradation and enhancing biodiversity conservation in protected landscapes.

128. Aligned with Cambodia's NDC 3.0 (2025) and the Environment and Natural Resources Code, the project supports national climate adaptation priorities by expanding nature-based solutions, restoring critical ecosystems, improving early warning systems, and building institutional capacity for sub-national adaptation planning. The promotion of clean energy technologies (e.g., solar lighting) further contributes to Cambodia's mitigation co-benefits under its NDC, while enhancing climate-resilient infrastructure and governance systems at the local level.

C. Cost-effectiveness of the proposed programme

1. Integrated Investment Approach

129. The proposed project adopts a dual-track investment strategy that combines *hard* and *soft* interventions to ensure cost-efficiency and sustainability. On one hand, it includes tangible, small-scale infrastructure investments such as slope stabilisation structures, eco-trails, firebreaks, irrigation systems, water harvesting ponds, and climate-resilient WASH facilities. On the other hand, it focuses on complementary *soft* measures, including institutional capacity-building, climate governance reform, participatory planning, and awareness-raising. Similarly, the project strengthens not only community resilience through small-scale infrastructure but also simultaneously improves livelihoods. This dual-track approach supports locally led adaptation and generates replicable, evidence-based solutions. This integrated approach ensures that physical investments are not only delivered but also embedded within functional and accountable governance systems. Through this dual-track model, each dollar spent contributes not just to short-term adaptation but to sustained and locally governed resilience over time. The preliminary cost benefits of each output are summarised in Table 10 to be further updated during the preparation of the full proposal.

130. The project is cost-effective because it prioritises nature-based and community-led adaptation measures that deliver long-term resilience at comparatively low cost. Interventions such as watershed rehabilitation, forest restoration, slope stabilisation, and climate-resilient water systems directly address projected hydrological changes while reducing the need for expensive grey infrastructure and long-term maintenance.

131. Table 10 presents the unit cost per direct beneficiary for each project output. This figure is calculated by dividing the total estimated cost of each output by the projected number of direct beneficiaries. The number of beneficiaries was determined using (i) commune population data from the National Institute of Statistics, (ii) the number of households directly using the infrastructure (ponds, canals, eco-trails, WASH facilities), (iii) CPA membership lists, and (iv) consultations with local authorities and community groups. All cost estimates for outputs include materials, labour, community contracting, supervision, and environmental safeguards. The unit cost, therefore, reflects the total direct investment per person benefiting from that output. Actual cost-effectiveness is higher than indicated because indirect beneficiaries—including downstream communities benefiting from improved water flow, visitors using eco-trails, and households benefiting from reduced fire and flood risk—are not included in the calculations. Including indirect beneficiaries would significantly lower unit costs. Table 10 thus provides a transparent, conservative estimate of the cost per direct beneficiary for each adaptation measure.

132. Cost-effectiveness and nexus between *hard* and *soft* interventions: The project's design and execution are centred on making the *hard* components as large as possible in order to directly assist the most vulnerable groups. When the project invests in *soft* activities, it will either strengthen commune/district level planning, which will help to sustain and replicate the benefits of the project, or directly support the hard investments through training in installation, operation, and maintenance. To guarantee sustainability, local implementation plans for operation, and maintenance will also be carried out. In order to guarantee the project's longevity, the soft component must support the proper execution of the hard component.

133. Cost-effective investments: Prioritising investments in project action planning will take into account cost-efficiency, adaptation-cost effectiveness, time to adaptation benefits, and "no-regret," all of which can be learned from past climate change adaptation initiatives. Cost-effectiveness, adaptation, and development effectiveness should all be considered in the action planning process, according to UN-Habitat's well-established Planning for Climate Change approach. Additionally, UN-Habitat will look into collaborating with technical organisations to carry out feasibility studies for the application of environmental technologies.

134. Cost-effective operation through community contribution: Working with local communities to accomplish the goals through a participatory method will promote community access to resources and investments. When feasible, the project will use the People's Process to implement the *hard* components. It will be necessary to establish close relationships with local, provincial, and district government agencies. Based on UN-Habitat's past experiences, UN-Habitat's People's Process make interventions cheaper than the conventional approach, approximately 20% more value for money.¹²⁹

135. Designs: UN-Habitat will make sure to choose the most economical options rather than the cheapest. Resilient infrastructure will be preferred over an alternative with a lower initial cost if it has a proven longer lifespan and/or more substantial adaptation advantages, even if it requires a larger initial investment. Furthermore, using outside contractors is an alternate implementation strategy to the People's Process, which is more costly and less likely to promote local ownership of the project, as previously mentioned.

Table 10 Beneficiaries, Estimated Costs and Cost Effectiveness (preliminary estimate)

Output	District	Estimated direct beneficiaries (A)	Estimated cost (B)	Cost-effectiveness of direct beneficiaries (B/A)
1.1	Aoral and Phnum	300 (Women: 120)	US\$ 120,000	Cost per beneficiary: \$400
1.2	Sruoch	315 (Women: 95)	US\$ 110,000	Cost per beneficiary: \$349
1.3	Aoral (Te Teuk Pus)	400 (Women: 200)	US\$ 681,100	Cost per beneficiary: \$1,700
2.1	Aoral and Phnum	150 (Women: 75)	US\$ 110,000	Cost per beneficiary: \$733
2.2	Sruoch	500 (Women: 200)	US\$ 250,000	Cost per beneficiary: \$500
2.3		500 (Women: 200)	US\$ 500,000	Cost per beneficiary: \$1,000
3.1	Aoral (Te Teuk Pus)	23,407 (Women: 8,292)	US\$ 1,800,000	Cost per beneficiary: \$79.2
3.2		23,407 (Women: 8,292)	US\$ 650,000	Cost per beneficiary: \$28.6
3.3	Aoral	4,300 (Women: 2,200)	US\$ 250,000	Cost per beneficiary: \$58.1
3.4		1,005 (Women: 527)	US\$ 750,000	Cost per beneficiary: \$89.2
3.5	Phnum Sruoch	2,089 (Women: 1,540)	US\$ 1,750,000	Cost per beneficiary: \$437.5
3.6		4,053 (Women: 2,049)	US\$ 250,000	Cost per beneficiary: \$62.5
3.7	Phnum Sruoch and Aoral (Te Teuk Pus)	3,415 (Women: 2,149)	US\$ 850,000	Cost per beneficiary: \$212.5
4.1	Phnum Sruoch and	N/A	US\$ 120,000	N/A
4.2	Aoral	400 (Women: 120)	US\$ 151,000	Cost per beneficiary: \$377.5
TOTAL	2 districts	64,241 (Women: 25,999)	US\$ 8,342,200	Cost per beneficiary: 129.84

¹²⁹ https://fukuoka.unhabitat.org/wp-content/themes/habitat/pdf/Habitat_PP.pdf

2. Prioritisation of High-Yield, Locally Managed Interventions

136. Approximately 85% of the project's total implementation budget is allocated to Components 2 and 3, which focus on direct adaptation outcomes through community-based ecosystem restoration, water resource management, and climate-resilient livelihoods. Complementary *soft* interventions, such as training and planning, are designed to sustain these investments. These activities include restoration of degraded land within 57 hectares, rehabilitation of 10 village ponds, construction of 5.5km of eco-trails and water channels, and support for more than 100 vulnerable households with diversified livelihoods. The selection of activities is based on their high return on investment, ability to deliver multiple co-benefits, and alignment with community priorities. By using low-cost, locally sourced materials (like in the construction of the firebreak/trails) and community-managed approaches, the project achieves substantial cost savings while fostering local ownership and long-term functionality of the interventions.

3. Community Contracting and Labour Efficiency

137. The project adopts UN-Habitat's proven Community Contracting model, which mobilises unskilled and semi-skilled labour from target communities for the implementation of low-tech infrastructure and nature-based solutions. Community contracting models reduce costs by up to 30%, enhance local ownership, and create jobs—contrasting sharply with higher-cost, contractor-driven approaches. This model minimises administrative and contractor overhead while generating local employment and fostering skill development. It enhances project efficiency by allowing communities to lead design and execution using their local knowledge, and it contributes to long-term sustainability by cultivating a sense of ownership over the assets created. Local governance systems, such as Commune Councils and Community Protected Area (CPA) Committees, are integrated into the maintenance structure, reducing future costs associated with deterioration or neglect of investments.

4. Avoided Losses and Long-Term Savings

138. Without intervention, the project area faces increasing climate-related risks, including forest fires, droughts, flooding, soil erosion, and degradation of agricultural productivity. These hazards pose direct threats to livelihoods and food security in Aoral and Phnum Sruoch Districts. Studies by the Asian Development Bank indicate that Cambodia could experience GDP losses of up to 9% by 2050 due to climate change. The project directly reduces these risks by enhancing water retention capacity, preventing erosion, improving vegetation cover, strengthening early warning systems, and building diversified livelihood strategies that buffer economic shocks. These proactive measures are significantly more cost-effective than post-disaster relief or large-scale engineered adaptation measures, and they generate savings by avoiding future damage and loss.

5. Cost-Benefit Analysis and Nature-Based Solutions

139. Each proposed intervention is guided by comparative cost-benefit analysis, which prioritises nature-based solutions (NbS) for their proven cost-efficiency and co-benefits. For example, assisted natural regeneration, bamboo-based water storage, and vegetated slope barriers are up to 70% more cost-effective than conventional engineering solutions. These approaches also support biodiversity, carbon sequestration, and eco-tourism, creating additional value beyond climate resilience. The use of locally appropriate technologies, such as solar lighting and manually constructed tanks, ensures affordability, relevance, and ease of replication. Furthermore, implementation through existing institutional structures, such as CPA Committees, women's groups, and youth networks, minimises coordination costs and accelerates deployment.

6. Institutional Ownership and Financial Sustainability

140. UN-Habitat already maintains strong relationships with government stakeholders, including provincial and local authorities and communities, facilitating implementation through existing structures at minimal logistical cost. All physical and ecosystem-based assets created by the project will be formally handed over to local institutions, including CPA Committees, Commune Councils, and Kirirom National Park authorities. These actors will be supported to incorporate maintenance responsibilities and climate risk budgeting into Commune Investment Plans and local development frameworks. This process of institutional integration ensures that adaptation actions are sustained through regular public financing and local resource allocation. Additionally, the project explores opportunities for long-term financial sustainability through revenue generation from eco-tourism and co-financing by community-based savings cooperatives.

7. Replicability and Peer-to-Peer Scaling

141. The interventions proposed under the project are designed to be replicable across other communes and provinces facing similar challenges. Through participatory documentation, peer-to-peer exchanges, and the dissemination of technical guidelines, the project will promote cost-effective scale-up of successful models. Knowledge transfer among CPA committees and commune leaders will allow best practices to be institutionalised, reducing learning costs and ensuring broader application of effective adaptation solutions. This horizontal replication model is both cost-effective and responsive to local contexts.

8. Community-Based Operation and Maintenance

142. The project enhances the adaptive capacity of marginalised rural communities, shifting responses from reactive to proactive, and increasing access to climate finance for the most vulnerable. To enhance efficiency in the long term,

the project emphasises strong community participation not only in design and implementation but also in operation and maintenance. Existing community-based organisations will be engaged in monitoring infrastructure, managing fire and watershed plans, and maintaining nature-based interventions. In-kind labour will be mobilised for low-tech construction and maintenance tasks, such as eco-trail signboard installation, firebreak clearing, native tree seed collection and growth, and nursery-supported native reforestation. Youth and women's groups will lead community education and risk awareness, reducing the need for external facilitation. Producer groups and savings cooperatives will co-finance small-scale enterprises through revolving funds and microcredit schemes. These decentralised systems reinforce local resilience while reducing operational overheads and ensuring the cost-effectiveness of project outcomes over the long term. The proposed project demonstrates strong cost-effectiveness by strategically allocating resources toward low-cost, high-impact, community-driven interventions that reduce long-term climate risks, enhance institutional capacity, and build sustainable livelihoods. By embedding adaptation into governance, economy, and local knowledge systems, the project not only avoids future losses but creates scalable, replicable models that can extend impact beyond the initial investment area. It exemplifies how integrated, inclusive, and locally led adaptation can maximise returns on adaptation finance while transforming vulnerable communities into resilient stewards of their environment.

Table 11 Cost-Effectiveness Criteria

Proposed Action	Cost Effectiveness Criteria		Alternative Action	Cost Effectiveness Criteria	
Climate-smart agriculture and NTFP-based livelihoods in Kirirom buffer zone.	Future cost of climate change	✓	* Continue traditional rain-fed farming * Heavy reliance on forest extraction	Future cost of climate change	✓
	Project efficiency	✓		Project efficiency	X
	Community involvement	✓		Community involvement	X
	Cost/Feasibility	✓		Cost/Feasibility	x
	Environmental and social safeguarding risks	✓		Environmental and social safeguarding risks	Higher risks
Restoration of degraded forest and watershed using nature-based solutions and community tree planting.	Future cost of climate change	✓	* Engineered reforestation by external contractors * Expansion of concrete structures for slope control	Future cost of climate change	✓
	Project efficiency	✓		Project efficiency	X
	Community involvement	✓		Community involvement	X
	Cost/Feasibility	✓		Cost/Feasibility	X
	Environmental and social safeguarding risks	✓		Environmental and social safeguarding risks	Higher risks
Construction of village-level water storage tanks, eco-trails, and erosion control using vegetative techniques.	Future cost of climate change	✓	* Build centralized piped infrastructure * Import concrete-based erosion barriers	Future cost of climate change	✓
	Project efficiency	✓		Project efficiency	x
	Community involvement	✓		Community involvement	X
	Cost/Feasibility	✓		Cost/Feasibility	X
	Environmental and social safeguarding risks	✓		Environmental and social safeguarding risks	Higher risks
CPA committee-led fire prevention and early warning systems in high-risk areas.	Future cost of climate change	✓	* No action or only reactive fire suppression by the government	Future cost of climate change	N/A
	Project efficiency	✓		Project efficiency	N/A
	Community involvement	✓		Community involvement	N/A
	Cost/Feasibility	✓		Cost/Feasibility	N/A
	Environmental and social safeguarding risks	✓		Environmental and social safeguarding risks	N/A
Training and inclusive planning for local adaptation (communes, CPA committees, women/youth leaders).	Future cost of climate change		* Rely only on technical experts and external facilitators	Future cost of climate change	N/A
	Project efficiency	✓		Project efficiency	N/A
	Community involvement	✓		Community involvement	N/A
	Cost/Feasibility	✓		Cost/Feasibility	N/A
	Environmental and social safeguarding risks	✓		Environmental and social safeguarding risks	N/A

143. For Component 3, the Business-As-Usual alternative of externally contracted, concrete-based infrastructure was assessed against the nature-based, community-contracted alternative summarised above and rejected: the nature-based approach is up to 70% more cost-effective while avoiding the higher safeguarding risks flagged in this table. For Component 1, the BAU alternative of ad hoc, externally facilitated training was rejected in favour of the CPA/Commune Council-embedded capacity-building model (final row above), which achieves the same climate-risk-reduction outcome at lower cost and with higher community involvement.

144. This cost-effectiveness case is sustained by design rather than realised as a one-time construction saving: Community Agreements with the 9 CPAs (Part III.D) formalise post-project operation and maintenance; in-kind community labour is mobilised for maintenance tasks such as eco-trail signage, tree-seed collection and reforestation (Part II.J); and Commune/Sangkat Fund integration (Part II.J, Financial Sustainability) provides a domestic financing pathway for recurrent costs.

D. Consistency with national or sub-national development programmes

145. The proposed climate adaptation project in Aoral and Phnum Sruoch Districts of Kampong Speu Province is strongly aligned with Cambodia's overarching development priorities and climate adaptation frameworks. It operationalises national policies related to forestry, biodiversity, and sustainable development while embedding climate resilience into local governance and protected area management.

1. Alignment with National Development Vision and Local Initiatives

146. The project contributes directly to the **Pentagonal Strategy Phase I (2023–2028)** and the long-term **Cambodia Vision 2050**, particularly under its pillars of inclusive and sustainable development, governance reform, and rural transformation. It supports key government priorities, including human capital development, climate-resilient infrastructure, private-sector-driven green livelihoods, and environmental sustainability. At the sub-national level, the project complements the **Prime Minister's Khnang Phsar Tourism Development Project** and the provincial government's efforts to develop **Te Teuk Pus (Hot Water)** geothermal area as a model ecotourism site.¹³⁰ The project's focus on eco-trails, local ecotourism services, and inclusive business opportunities for forest-edge communities directly supports the Ministry of Environment's **Green Destination Framework**, which seeks to link biodiversity protection with sustainable income generation through ecotourism, accommodation, handicrafts, and nature-based services.¹³¹

2. Alignment with National Climate Policy and Adaptation Planning

147. The project directly supports the vision and strategic objectives of the **Cambodia Climate Change Strategic Plan (CCCSPP) 2024–2033**, which aims to achieve "carbon neutrality and climate resilience through inclusive and sustainable development." Specifically, the project contributes to:

- **Strategic Objective 1** – Promoting low-emission development via forest restoration and NTFP-based livelihoods.
- **Strategic Objective 2** – Strengthening adaptive capacity through climate-resilient infrastructure, water systems, and nature-based solutions.
- **Strategic Objective 3** – Promoting good governance via strengthened CPA committees and climate-integrated commune planning.

148. It also aligns with the **National Adaptation Plan (NAP)**, which identifies upland, forest-dependent communities, such as those in Kirirom and Aoral, as priority groups due to their exposure to climate hazards, including droughts, fires, and ecosystem degradation. By focusing on community-based water systems, fire prevention measures, and biodiversity corridors, the project addresses the NAP's core pillars of resilient livelihoods, ecosystem restoration, and risk-informed governance. The proposed interventions also support Cambodia's **Updated Nationally Determined Contribution (NDC, 2020)** and upcoming **NDC 3.0**, by contributing to:

- Sustainable forest management (FOLU sector),
- Ecosystem-based adaptation (EbA),
- Gender-responsive, locally led planning,
- Nature-based solutions for water and land resilience.

3. Compliance with Forestry, Environmental, and Protected Area Frameworks

149. The project complies with the **Protected Areas Law (2008)**. It advances the implementation of the **Kirirom National Park Management Plan (2018–2028)** by introducing climate adaptation and ecosystem restoration measures not previously embedded in the park's strategy, including firebreak construction, native reforestation, and alternative livelihood development. It also aligns with the **National Forest Programme (2010–2029)**, particularly its objectives on participatory forest governance, forest landscape restoration, and sustainable NTFP value chains, supporting the programme's goal of inclusive, community-led forest management.

4. Support for National and Sub-National Planning Frameworks

150. At the macro-policy level, the project is consistent with the **National Strategic Development Plan (NSDP)**, which was superseded by the NSDP 2024-2033 and prioritises:

- Expansion of rural infrastructure (reflected in Outputs 3.6 and 3.7 on water systems),
- Sustainable natural resource use (Output 3.2 and 3.5 on reforestation and eco-trails),
- Disaster risk reduction and adaptation (cross-cutting across Components 1–3).

The project ensures **vertical coherence** with local development processes by integrating adaptation into **Commune Development Plans (CDPs)** and **Investment Plans (CIPs)**. This supports institutional anchoring and sub-national ownership of climate adaptation goals and builds capacities of commune councils and CPA committees to mainstream climate risks into planning and budgeting.

Table 12 Key Government policies/strategies/plans adopted in the project

¹³⁰ Phak Seangly. (2025, March 25). [Kampong Speu geothermal pools set for formal ecotourism status](#)

¹³¹ Sok Sereyath. (2024, February 14). [Ministry of Environment Launches Green Destination Target Project for Sustainable Entrepreneurship in Cambodia.](#)

Key National Policy and Responsible Agency	Project elements consistent with policy
1. <u>2023–2028 RGC Pentagonal Strategy Phase I</u>, Royal Government of Cambodia (RGC)	In order to develop Cambodia into a high-income economy by 2050, the 2023–2028 RGC Pentagonal Strategy Phase I outlines the core programs that will be implemented during the next five years. Initiatives include strengthening environmental sustainability and climate change response, including establishing legal frameworks and/or roadmaps for state green securities, state climate securities, and state social securities, and boosting water infrastructure to respond to climate change.
2. <u>Cambodia Sustainable Development Goals (CSDGs) 2016- 2030</u>, Royal Government of Cambodia (RGC)	The proposed outcomes and corresponding outputs are contributing to the targets of Goals 13 to take urgent actions to combat climate change and its impacts such as the target 13.1 Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in the country, target 13.2 Integrate Climate change measures into national policies, strategies, and planning, and target 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning. The proposed Project also contributes the CSDG Goal 15 to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss. Specifically, it contributes to target 15.2: promote the implementation of sustainable management of all types of forests and restore degraded forests and to 15.9: integrate ecosystem and biodiversity values into national and local planning.
3. <u>National Strategic Development Plan (NSDP) 2024 – 2033</u>, Royal Government of Cambodia (RGC)	NSDP 2024-2033 serves as the primary operational blueprint to implement the Royal Government's Pentagonal Strategy-Phase I. It provides a roadmap for achieving inclusive, sustainable economic growth, expanding social protection, and graduating Cambodia out of its Least Developed Country (LDC) status. The proposed Project corresponds to the fourth pentagon: Resilient, Sustainable, and Inclusive Development: Climate change mitigation, sustainable natural resource management, and regional integration. The project will deliver tangible results – including resilient infrastructure and sustainable livelihoods – that support NSDP goals for poverty reduction and rural resilience.
4. <u>Cambodia Climate Change Strategic Plan (CCCSP) 2024 - 2033</u>, Royal Government of Cambodia (RGC)	The CCCSP details Cambodia's strategic response to climate change with the vision to develop "towards a green, low-carbon, climate-resilient, equitable, sustainable and knowledge-based society." To achieve its vision, the Royal Government of Cambodia (RGC) sets eight strategic objectives in which the proposed outcomes are relevant to strategic objective 1 to promote GHG mitigation, specifically through increasing forest cover and halting deforestation, strategic objective 2 to promote and strengthen adaptation capacity to climate change, and strategic objective 3 to promote good governance. The proposed Project will support CCCSP by integrating sustainable agriculture, water systems, and institutional capacity building into local climate adaptation measures.
5. <u>The third Nationally Determined Contributions (NDC 3.0) 2025</u>, Royal Government of Cambodia (RGC)	Cambodia's NDC 3.0, building upon the country's climate commitments and strategies, raises ambition with stronger greenhouse gas emissions reduction goals and enhanced climate adaptation aligned to national priorities. It also aims to strengthen resilience across vulnerable sectors, including Water, Sanitation and Hygiene (WASH), Infrastructure, Livelihoods and ecosystems, Disaster and climate risk management, and Food systems. The proposed Project contributes to NDC 3.0 through 57 hectares of forest rehabilitation, strengthens commune-level climate governance, and promotes inclusive adaptation.
6. <u>Long-Term Strategy for Carbon Neutrality 2021</u>, Royal Government of Cambodia (RGC)	Cambodia developed LTS4CN in 2021 to demonstrate her commitment to the Paris Agreement on Climate Change. It gives a policy scenario to realise a vision of a carbon-neutral and resilient society in 2050. The LTS4CN modelling suggests that Cambodia could achieve carbon neutrality in 2050, with the Forestry and Other Land Use (FOLU) sector providing a full carbon sink of 50 megatons of carbon dioxide equivalent (MtCO ₂ e). The energy sector is expected to be the highest emitter in 2050 at 28 MtCO ₂ e, followed by the agriculture sector at 19 MtCO ₂ e. The waste and Industrial Processes and Product Use (IPPU) sectors are projected to emit 1.6 and 1.2 MtCO ₂ e, respectively. In addition, LTS4CN also considers the adaptation benefits. Therefore, component 3 contributes to the FOLU sector through nursery-supported native reforestation in protected areas.
7. <u>Municipal Solid Waste Management Policy 2020-2030</u>, Royal Government of Cambodia (RGC)	To address the main challenges in solid waste management (SWM) in urban areas, the capital, cities, and districts, such as the rapid growth in both quantity and component of solid waste, lack of infrastructure, management, financing mechanisms, policies, and the limited engagement of all relevant actors, the Municipal Solid Waste Management Policy 2020-2030 sets specific measures and action plan for short- term (1-2 years), medium-term (3-5 years) and long-term (6-10 years). Particularly, the project will contribute to capacity-building on solid waste management and the establishment of a simple SWM facility for segregation and recycling.
8. <u>National Circular Economy Strategy and Action Plan (2021)</u>, Royal Government of Cambodia (RGC)	The overarching goal of the National Circular Economy Strategy and Action Plan is to enable the country to achieve a prosperous economy, a thriving and inclusive society, and a healthy environment. The proposed Project will support it through nature-based infrastructure improvement that corresponds to strategic objective 1: Increase Efficient Use of Raw Materials, and Promote Sustainable Design, Production, Remanufacturing and Distribution. The project also supports strategic objective 5: Enhance Crosscutting Stakeholder Engagement, Awareness and Capacity Building through providing a series of capacity-building works to enhance the capacity of sub-national and local stakeholders.
9. <u>Code of Environment and Natural Resources 2023</u>, Royal	The Code provides a comprehensive framework for managing and protecting Cambodia's natural resources. This code emphasises the importance of sustainable development and integrating climate change considerations into national policies and practices. It contains a section to

Government of Cambodia (RGC)	strengthen and improve capacity for climate change adaptation and resilience. The project will contribute this code because one of the main objectives is to strengthen the adaptive capacity and increase climate resilience in the Kingdom of Cambodia.
10. National Adaptation Plan (NAP), Royal Government of Cambodia / Ministry of Environment	The NAP identifies upland, forest-dependent communities exposed to drought, fire and ecosystem degradation, including Kirirom and Aoral, as priority groups. The project's community-based water systems, fire prevention, and biodiversity corridor outputs directly operationalise the NAP's resilient-livelihoods, ecosystem-restoration and risk-informed-governance pillars at the sub-national level.
11. National Policy on Gender Equality and Women's Economic Empowerment, Ministry of Women's Affairs	Given the project's explicit gender and social-inclusion targets (30-40% women's participation across Outputs 1.1, III.A governance bodies, and the Gender Action Plan), this policy provides the national framework the project's gender-responsive design operationalises at the sub-national level.
12. National Forest Programme 2010–2029 – Forestry Administration, Royal Government of Cambodia (RGC)	The National Forest Programme aims to place good governance and effective partnerships at the centre of sustainable forest management to ensure the sustainable benefit for improving livelihoods, environmental services and overall economic development. The proposed Project will support Objective 2: Adapt to climate change and mitigate its effects on forest-based livelihoods; Objective 4: Forest governance, law and enforcement at all levels; Objective 6: Raise awareness, capacity of institutions; and Objective 8: Apply modern sustainable management models adaptive to changing context. Specifically, the project will promote participatory forest governance, landscape restoration, and non-timber forest product (NTFP) value chains in support of community-based forest management.
13. Commune Development Plans and Investment Plans – Ministry of Planning and Sub-national Authorities	Mainstream adaptation into local planning and budgeting frameworks (CDPs/CIPs), promoting vertical coherence and local implementation of national priorities.
14. Kirirom National Park Management Plan (2018–2028), Ministry of Environment	Introducing climate adaptation and ecosystem restoration measures not previously embedded in the park's strategy, including firebreak construction, native reforestation, and alternative livelihood development.

5. Contribution to Sustainable Development Goals (SDGs)

151. The proposed project advances Cambodia's commitments to the 2030 Agenda through targeted SDG contributions, including:

Table 13 Project alignment with SDGs

Project Element	Aligned SDGs
Diversified, resilient rural livelihoods (Component 2)	SDG 1 – No Poverty; SDG 8 – Decent Work; SDG 2 – Zero Hunger
Women and youth engagement in value chains	SDG 5 – Gender Equality; SDG 10 – Reduced Inequalities
Climate-resilient water infrastructure (Outputs 3.6–3.7)	SDG 6 – Clean Water and Sanitation; SDG 13 – Climate Action
Forest restoration and biodiversity corridors	SDG 15 – Life on Land; SDG 12 – Responsible Consumption
Local climate governance and institutional capacity	SDG 16 – Peace, Justice and Institutions; SDG 13
Renewable energy and clean technologies	SDG 7 – Affordable and Clean Energy

Table 14 Key Laws, Policies, and Knowledge Resources Related to Protected Areas and Community Forestry in Cambodia

Policy / Publication Title	Type	Lead Institution/ Authors	Relevance to Project
Protected Areas Law (2008)	National Law	Royal Government of Cambodia	Establishes a legal framework for CPA governance, zoning, and biodiversity protection. Central to Kirirom NP management.
National Forest Programme (2009)	Policy Framework	Forestry Administration	Provides long-term direction for forest sector reform, including community forestry. Ensures alignment of CPA-based restoration and livelihood components.
Community Forestry Sub-Decree (2003)	Sub-national Regulation	Forestry Administration	Guides legal registration and governance of Community Forests (CFs); relevant for supporting CPA structure and co-management mechanisms.
Kirirom National Park Management Plan (2018–2028)	Park-Specific Plan	MoE / GDANCP	Directs strategic priorities for conservation, tourism, and CPA integration in Kirirom. The project addresses the plan's gaps in climate adaptation.
Community Forestry Statistics in Cambodia (Kep, 2013)	GIS / Technical Report	Forestry Administration	Demonstrate existing data and community forest coverage, which informs potential baseline data for CPAs in Kirirom.
Effectiveness of	Peer-reviewed	Lambrick et	Confirms positive impacts of community forestry on forest

Community Forestry in Prey Lang Forest (2014)	Study	al.	conditions and livelihoods; supports similar interventions in upland CPAs.
REDD+ and Cambodia: Engaging Community Views (2013)	Policy Brief	Civil Society Coalition	Highlights the role of Indigenous and community voices in REDD+, aligns with the project's inclusive planning and carbon co-benefits.
Community Forestry as a Grassroots Initiative (Phum Dong, 2006)	Case Study	Community Forestry International	Relevant for showcasing success in Kampong Speu, demonstrating local models for project replication.
Market and Non-Market Costs of REDD+ (2011)	Research Study	Caravani & Graham	Offers insights into community trade-offs and perceptions in forest protection schemes, useful for risk-benefit analysis.
Cambodia: Forest Conflict Assessment (2004)	Conflict Study	Schweithelm & Chanthy	Provides a cautionary lens on unresolved tenure or enforcement gaps, useful for risk mitigation in CPA governance.
Indigenous Land Management Reports (2008)	Workshop Proceedings	NTEP-EP & ICSO	Supports the project's attention to Indigenous and ethnic minorities in upland forest regions.

E. Compliance with relevant technical standards and policies

152. 1. The proposed project in Kampong Speu's Aoral and Phnum Sruoch Districts is fully aligned with Cambodia's national technical standards, sectoral laws, and environmental regulations, as well as the Adaptation Fund's Environmental and Social Policy (ESP). It integrates climate adaptation with environmentally sound infrastructure, ecosystem restoration, and inclusive development, ensuring interventions are technically sound, legally compliant, socially just, and environmentally sustainable (For the detailed, principle-by-principle Environmental and Social Policy risk screening, see Part II.K, Table 19, p. 70.)

i. Environmental and Legal Safeguards

153. All physical and land-based interventions—such as irrigation canals, ponds, eco-trails, firebreaks, and WASH facilities—will be screened under the **Law on Environmental Protection and Natural Resource Management (1996)** and the **Sub-Decree on Environmental Impact Assessment (1999)**. Depending on the nature and scale of activities, **Initial Environmental Examinations (IEEs)** or **Environmental and Social Impact Assessments (ESIAs)** will be conducted in consultation with the **Ministry of Environment (MoE)**.

154. For project activities within or adjacent to **protected areas**, such as **Kirirom National Park** and **Aoral Wildlife Sanctuary**, the project will adhere to the **Protected Areas Law (2008)** and coordinate closely with the **General Department of Administration for Nature Conservation and Protection (GDANCP)** to ensure alignment with biodiversity conservation goals, zoning regulations, and protected area management plans.

155. In addition, the project will follow the **Community Protected Area (CPA) Guidelines (2007)** and the **Forestry Law (2002)** for ecosystem restoration activities, including native tree planting and firebreak construction. This ensures that community co-management of natural resources is both legally grounded and ecologically appropriate.

ii. Technical Compliance by Sector

156. Water Resources: All water infrastructure (e.g., ponds, irrigation canals, water gate) will follow technical standards issued by the **Ministry of Water Resources and Meteorology (MOWRAM)** and the **Water Law (2007)**. Coordination with **Provincial Departments (PDWRAM)** will ensure local hydrology and climate resilience are considered in design and siting.

157. WASH Facilities: Clean water and sanitation components will comply with the **Law on Clean Water Management, Rural WASH Policy (2014–2025)**, and MRD's **Design Manual for Household Latrines (2015)**. Design specifications include flood-resilient latrines, menstrual hygiene management, and inclusive access. Universal Design principles will be applied to ensure accessibility for persons with disabilities in line with the **Disability Law (2009)**.

158. Rural Infrastructure: Small-scale rural works (e.g., slope stabilisation, nature trails, solar lighting) will adhere to technical guidelines from the **Ministry of Rural Development (MRD)** and the **Ministry of Land Management, Urban Planning and Construction (MLMUPC)**. All construction will comply with national and sub-national building codes and apply appropriate standards for climate resilience and safety.

159. Eco-Tourism Infrastructure: Activities such as site rehabilitation, nature-based tourism facilities, and biodiversity corridors will align with the **National Strategic Plan on Green Development (2013–2030)** and the **Circular Strategy for Environment (2023–2028)**.

ii. Labour, Safety, and Community Contracting

160. All construction and infrastructure-related activities will observe occupational health and safety requirements per Cambodia's **Labour Law (1997)**, including provisions on fair wages, non-discrimination, and worksite safety. The project will also promote the use of **Community Contracting Guidelines**, as adapted by **UN-Habitat**, to engage local labour in small-scale works, foster ownership, and reduce implementation costs.

Table 15 Compliance with national technical standards, rules, regulations and procedures

Relevant Rules, Regulations, Standards and Procedures	Competent Authority	Scope/Relevance (identified during proposal preparation)	Relevant Project Outputs	Compliance status and procedures
Law on Environmental Protection and Natural Resource Management (1996)	MoE	Establishes the overarching framework for environmental protection, pollution prevention and sustainable natural-resource management. Relevant to project activities with potential environmental impacts.	1.3, 2.3, 3.1-3.7	Mandatory compliance where applicable. Environmental screening, mitigation and monitoring will be undertaken, with requirements incorporated into designs and contracts and the current legal framework confirmed.
EIA Sub Decree (1999)	MoE	Establishes Cambodia's environmental impact assessment framework for development activities with potential environmental impacts. Relevant to project infrastructure and other activities that may affect the environment.	1.3, 3.1-3.7	Mandatory compliance where applicable. Activities will be screened, applicable EIA requirements determined, required documents prepared and approved before implementation, with mitigation measures incorporated into project design and contracts.
Protected Area Law (2008)	MoE	Regulates protected-area zoning, conservation, sustainable use and activities that may affect protected-area resources. Relevant to tourism, trails, livelihoods and conservation activities in or near protected areas.	1.1, 3.1, 3.2, 3.5	Mandatory compliance where applicable. Sites and zones will be screened; permitted activities confirmed; required authorizations obtained; and biodiversity/protected-area measures incorporated into designs and implementation.
Community Protected Area (CPA) Guidelines (2007)	MoE	Establishes procedures for establishing and managing Community Protected Areas within protected areas, including community participation, boundary identification, management planning, local regulations and sustainable natural-resource use. It is relevant to project activities involving community conservation, forest restoration, ecotourism, natural-resource management and community livelihoods within or adjacent to CPAs.	1.3, 3.1-3.2	Compliance required where project activities are implemented within or support a CPA. The project will confirm the CPA boundary and management arrangements with MoE/GDANCP; coordinate with the CPA management committee and local authorities; ensure activities are consistent with the CPA natural-resource management plan and applicable regulations; obtain required authorization for activities; and monitor implementation and community compliance.
Law on Forestry (2002)	MAFF	Establishes the framework for forest protection, conservation, management and sustainable use, including community participation. Relevant to forestry, restoration, agroforestry and forest-dependent livelihoods.	3.2, 3.5	Mandatory compliance where applicable. Forest status will be confirmed; required authorizations obtained; unauthorized forest clearance avoided; and applicable forest-management measures incorporated and monitored.
Law on Water Resources Management (2007)	MOWRAM	Regulates sustainable management and use of water resources, including irrigation, water abstraction, storage, conveyance and waterworks. Relevant to irrigation and water infrastructure.	2.2, 3.3, 3.4, 3.6	Mandatory compliance where applicable. The project will confirm applicable MOWRAM approvals/licences, complete technical design and review, obtain required authorization before works, and conduct technical inspection.
National Rural Water Supply, Sanitation and Hygiene (RWSSH) Strategy	MRD	Provides the framework for rural water supply, sanitation, hygiene, service delivery and sustainability. Relevant to project-supported rural WASH facilities and services.	3.7	Policy alignment required. WASH facilities will follow applicable technical and service-delivery principles, include O&M arrangements, and be monitored for functionality, safety and service access.
National Strategic Plan on Green Growth (2013–2030)	NCSD	Provides a national framework for sustainable economic, social and environmental development, focusing on efficient resource use, environmental sustainability, green jobs and technology, sustainable land and water management, biodiversity and green investment. It is relevant to project activities involving climate-resilient infrastructure, sustainable agriculture, natural-resource management, ecotourism and green livelihoods.	1.2, 3.1-3.7, 4.2	Policy alignment required. The project will integrate green-growth principles into relevant activities, including resource efficiency, environmental sustainability, climate resilience and sustainable livelihoods, and will monitor relevant green-growth outcomes.

Circular Strategy on Environment (2023–2028)	MoE	Provides the Ministry of Environment's strategic framework for environmental protection and sustainable natural-resource management. It is structured around three strategic areas—Clean, Green and Sustainable—covering pollution control and EIA, forest and biodiversity conservation, protected-area management, community livelihoods, environmental compliance and institutional strengthening. It is directly relevant to project activities involving natural resources, protected areas, biodiversity, restoration, pollution prevention and environmentally sustainable livelihoods.	1.1-1.3, 2.1-2.3, 3.1-3.7	Policy alignment required. Relevant project activities will be screened against the CSE priorities and incorporate pollution prevention, ecosystem/biodiversity protection, sustainable resource use and community livelihood measures. Applicable environmental approvals and monitoring requirements will be followed.
Labour Law (1997)	Ministry of Labour and Vocational Training (MLVT)	Establishes the legal framework for employment and working conditions in Cambodia, including employment contracts, wages, working hours, occupational health and safety, child and forced labour, non-discrimination, trade unions and labour dispute resolution. It applies broadly to enterprises and establishments across sectors, including agriculture, construction, services and other project-relevant activities. It is relevant to project-financed civil works, contractors, project staff, training activities and other paid employment.	1.3, 3.1-3.7	Mandatory compliance. The project and contractors will comply with applicable labour requirements, including written employment arrangements, lawful wages and working hours, non-discrimination, prohibition of forced and child labour, occupational health and safety, appropriate PPE and accident reporting/compensation. Contractors will be required to incorporate these requirements into employment and construction arrangements, maintain relevant records, and cooperate with labour inspections.
Sub-Decree 219 (CDP-CIP guidelines)	NCDD	Establishes procedures for sub-national development planning and three-year investment programming. Relevant to ensuring project investments are consistent with local priorities and plans.	1.1-1.2, 4.1-4.2	Compliance required where applicable. Project investments will be coordinated with relevant sub-national administrations and incorporated into applicable CDPs/CIPs and investment programmes, with consultation and endorsement documented.
Community-Based Tourism Standard	MoT	Sets principles for community participation, governance, service quality, safety, environmental/cultural protection and benefit sharing in community-based tourism. Relevant to project-supported CBT and ecotourism activities.	1.1-1.3, 4.1-4.2	Alignment/compliance required for relevant activities. Tourism activities will be assessed against applicable criteria and incorporate community participation, safety, environmental protection and benefit-sharing requirements.
Prakas No. 6885 (2024) on Environmental Impact Assessment Procedures for Development Projects	MoE	Provides detailed procedures for project screening, EIA/IEIA preparation and review, consultation, approval and environmental monitoring.	1.3, 3.1-3.7	Mandatory compliance where applicable. Each relevant activity will be screened and classified; required EIA documentation and consultation undertaken; approval obtained before implementation; and environmental measures monitored.
Law on Administrative Management of the Capital, Provinces, Municipalities, Districts and Khans (2008)	Mol	Defines the organization, functions and decision-making responsibilities of sub-national administrations. Relevant to project coordination and implementation through provincial and district authorities.	1.2, 4.2	Compliance required for sub-national implementation. The project will follow applicable local decision-making and coordination procedures and document required consultations, decisions and approvals.
CCCSP (2024–2033)	MoE	Provides the national framework for climate resilience, adaptation, mitigation and climate governance. Relevant to ensuring project interventions are consistent with national climate priorities.	1.1-1.3, 2.1-2.3, 3.1-3.7, 4.1-4.2	Policy alignment required. Climate risks and adaptation priorities will be incorporated into project design, implementation, workplans and monitoring.
DRM Law (2015)	NCDM	Establishes the framework for disaster-risk reduction, preparedness, response and recovery. Relevant to flood, drought, storm and other climate/disaster risks affecting project communities and infrastructure.	1.2, 3.1-3.7	Mandatory compliance where applicable. Disaster risks will be assessed and incorporated into designs and preparedness measures, with coordination with relevant DRM authorities.
Technical building standards	MLMUPC	Establish technical requirements for safe, resilient and appropriate construction. Relevant to project-financed buildings, facilities and other structures.	1.3	Mandatory compliance. Applicable technical requirements will be incorporated into detailed designs and specifications, with required approvals, qualified supervision and inspections before use.

Cambodia Climate Change Priority Action Plan (2023–30)	MAFF	Provides sectoral priorities for climate action in agriculture, including climate-resilient production, water management, extension and value chains.	1.1-1.3, 2.1-2.3, 3.1-3.7, 4.1-4.2	Policy alignment required. Relevant climate risks and adaptation measures will be incorporated into agricultural activities and monitored in coordination with MAFF.
Agricultural market/value-chain guidelines and market information systems	MAFF	Support market access, value-chain development, producer linkages and access to market information. Relevant to climate-resilient agricultural value-chain activities.	2.1	Alignment required. Project market activities will coordinate with MAFF, use applicable market-information systems and incorporate relevant quality and market requirements.
Agricultural Development Policy 2021–2030	MAFF	Provides the policy framework for agricultural productivity, diversification, modernization, value chains, livelihoods and resilience. Relevant to project-supported climate-resilient agriculture.	2.2, 2.3	Policy alignment required. Agricultural activities will be designed consistently with relevant policy priorities and coordinated with MAFF and sub-national authorities.
Agricultural Safety Codes / agricultural safety standards	MAFF	Address safe agricultural production, handling of inputs/equipment and protection of farmers, workers, consumers and the environment. Relevant to agricultural demonstrations, equipment and input use.	2.2, 2.3	Compliance required where applicable; instrument to be confirmed. Applicable MAFF safety requirements will be identified and incorporated into training, procurement and field activities, including appropriate safety measures.
National Policy on Cambodia Youth Development (2011)	MoEYS	Provides the policy framework for youth participation, skills, employment, entrepreneurship and development. Relevant to youth skills, livelihoods and participation under the project.	1.3, 2.2, 2.3	Policy alignment required. Youth participation and capacity-building activities will reflect relevant policy priorities and monitor youth participation and benefits.
Sub-Decree No. 98 on the Implementation of Cultural Heritage Protection	MoCFA	Provides requirements for protection and management of cultural heritage and archaeological resources. Relevant where project infrastructure, trails or tourism activities may affect heritage resources.	3.1-3.2	Mandatory compliance where applicable. Sites will be screened for heritage risks; required authorization obtained; chance-find procedures included in works contracts; and any discoveries reported and protected.
National Biodiversity Strategy and Action Plan (NBSAP) 2016.	NCSD	Provides the national framework for biodiversity conservation and sustainable use. Relevant to activities affecting forests, protected areas, habitats, wildlife and ecosystem services.	3.1-3.7	Policy alignment required. Biodiversity risks will be screened and avoidance, minimization and restoration measures incorporated where relevant.
Law on Water Resources Management (2007)	MOWRAM	Establishes requirements for sustainable water-resource management and waterworks, including irrigation and water storage. Relevant to project irrigation and water infrastructure.	3.1, 3.3, 3.4, 3.6	Mandatory compliance where applicable. MOWRAM requirements and any necessary approvals will be confirmed before design finalization and construction; works will be technically reviewed and inspected.
Fire Safety Standards	Mol	Address fire prevention, emergency preparedness, fire protection and firefighting requirements for buildings and facilities. Relevant to project-supported buildings, tourism and community facilities.	3.5	Compliance required where applicable; exact instrument to be confirmed. Fire risks will be assessed during design and appropriate prevention, escape, detection and firefighting measures incorporated, with required inspection/approval obtained.
National Drinking Water Quality Standards (NDWQS)	MISTI	Establish requirements for physical, chemical and microbiological drinking-water quality. Relevant to project-supported water-supply systems and facilities providing water for human consumption.	3.7	Mandatory compliance. Water sources and treatment will be assessed; water quality tested against applicable parameters before commissioning and during operation; and corrective action taken where standards are not met.
Gender & Inclusion Resolutions	MoWA	Provide a framework for gender equality, women's participation and social inclusion. Relevant to beneficiary selection, participation, training, employment, decision-making, benefit sharing and grievance mechanisms.	1.1-1.3, 2.1-2.3, 4.1-4.2	Policy/institutional alignment required; instrument to be confirmed. Gender and inclusion measures will be integrated into project planning and implementation, with participation and benefits monitored using sex-disaggregated and relevant inclusion data.

161.2. The project will establish a **Grievance Redress Mechanism (GRM)** at the local level, integrated with CPA and Commune structures, and accessible to all social groups, including women, youth, and Indigenous persons. The safeguard monitoring process will enhance the capacity of local actors to implement mitigation measures and uphold accountability, aligning with the Adaptation Fund's results-based management system.

162. In summary, the project meets the technical and regulatory requirements set by the Royal Government of Cambodia and is fully aligned with the ESP of the Adaptation Fund. By mainstreaming safeguards into all project phases, it ensures that adaptation benefits are delivered equitably, sustainably, and without environmental or social harm.

163. Consolidated list of applicable national instruments. In addition to the output-specific standards itemised above, this project has confirmed the following national and local instruments as applicable, with no further national-level standard identified as relevant: the Law on Environmental Protection and Natural Resource Management (1996); the Sub-Decree on Environmental Impact Assessment (1999); the Protected Area Law (2008); the Law on Water Resources Management (2007); the Law on Local Governance; the Disaster Risk Management Law (2015); the Occupational Training Law (2013); the National Renewable Energy Policy; the National RWSSH (rural water supply, sanitation and hygiene) Strategy; and the Cambodian Labour Law together with applicable ILO core labour standards. Local-level standards are also applicable: Sub-Decree 219 (Commune Development Plan/Commune Investment Plan guidelines) and commune-level technical standards for pond and water infrastructure (Output 3.3).

F. Duplication with other funding sources

164. A review of ongoing programs and consultations with national and provincial stakeholders confirmed that no other initiative is currently implementing similar activities in the targeted areas (Aoral and Phnum Sruoch Districts, Kampong Speu Province), particularly focusing on integrated eco-tourism-based adaptation, ecosystem restoration, and community-based water and infrastructure resilience.

165. IFAD's Climate Adaptive Irrigation and Sustainable Agriculture for Resilience (CAISAR) project exhibits a potential overlap in climate-smart agricultural activities. As CAISAR was approved in July 2025 and its exact target farmers remain unconfirmed, a detailed assessment will be conducted during our project's inception stage to eliminate duplicate investments for the same households. The proposed project specifically targets the most climate-vulnerable demographics, including female, youth, and elderly farmers.

166. Except for the CAISAR project, the proposed Project does not duplicate any ongoing or planned initiatives financed by other bilateral or multilateral sources in the target areas of Aoral and Phnum Sruoch Districts, including their adjacent protected zones. A thorough assessment, conducted through desk reviews, project registry screening, and multi-tier stakeholder consultations, confirmed that no existing adaptation programme is currently supporting climate-resilient livelihood strategies, ecosystem-based adaptation, or governance strengthening in these upland landscapes. With the information provided by the Ministry of Environment, the proposed project has considered overlap and potential synergies with 14 other ongoing and completed projects.

167. While Cambodia has received substantial adaptation financing through mechanisms such as the Green Climate Fund (GCF), the Global Environment Facility (GEF), IFAD, and bilateral development agencies, these efforts have primarily focused on lowland rice-growing areas, coastal settlements, and the Tonle Sap ecosystems. For example, the Cambodia Climate Change Alliance (CCCA) and the UNDP-supported National Adaptation Plan (NAP) processes have prioritised national planning, early warning systems, and policy mainstreaming, with minimal on-the-ground implementation in remote upland protected areas. Notably, the GCF-funded project "FP084: Climate-Friendly Agribusiness Value Chains in the Greater Mekong Subregion" and IFAD's ASPIRE programme are focused on agricultural resilience in provincial farmland and floodplain zones. These interventions do not extend to forested mountain ecosystems or communities within protected areas, such as Kirirom National Park.

168. Similarly, previous Adaptation Fund-financed projects—such as "Climate Change Adaptation through Small-Scale and Protective Infrastructure Interventions" (2021–2025) in coastal provinces (Kep and Preah Sihanouk), and the ongoing AF-UN-Habitat project (2024–2028) in Kampot and Koh Kong—have informed this project's design through demonstrated practices in community-based infrastructure and ecosystem restoration. However, these initiatives did not cover Aoral or Phnum Sruoch Districts, nor did they address the biophysical challenges specific to upland forested ecosystems and eco-tourism corridors. This proposed project, therefore, builds on prior successes while addressing a critical geographic and thematic gap in climate adaptation. It adopts and adapts proven "soft-plus-hard" intervention approaches to new contexts—mountainous terrain, forest-dependent communities, and indigenous populations—delivering tailored solutions that reflect the region's unique vulnerabilities.

169. Moreover, a 2023 mapping by the National Council for Sustainable Development (NCSd) and UN-Habitat confirmed that no major donor-funded climate resilience programme (including those under the ADB, GEF, GCF, or World Bank) is operational in Kirirom National Park or its surrounding CPAs. Existing investments in Kampong Speu Province remain focused on rural road and utility infrastructure, and do not target ecosystem-based adaptation or strengthening of CPA governance. This project was developed in collaboration with the Ministry of Environment (MoE), General Directorate of Administration for Nature Conservation and Protection (GDANCP), and provincial and commune stakeholders. During these consultations, representatives validated that no overlapping activities exist and affirmed the need for dedicated adaptation investments in these upland districts.

170. In summary, the proposed intervention demonstrates clear additionality, avoids duplication, and brings catalytic value by initiating community-led climate governance, climate-smart livelihoods, and ecosystem rehabilitation in

highly vulnerable, underfunded upland protected areas.

Table 16 Summary of ongoing/pipeline projects

Project Name	Description	Key Lessons Learned	Potential Synergy
Central and Provincial Government Initiatives			
Development of a Buddhist Cultural Center in Kirirom	- Target population: Buddhist visitors, local communities, domestic/international visitors - Implementing entity: MoE/ relevant Kirirom protected-area administration - Timeline: 2024–End date to be confirmed - Specific location: Buddhist Cultural Centre, Kirirom National Park, Phnom Sruoch District, Kampong Speu	Demonstrates increasing integration of culture, recreation and environmental conservation within Kirirom. The project should distinguish adaptation investments from general tourism/cultural infrastructure and ensure protected-area safeguards.	Output 3.1 and 3.4 The establishment of a Buddhist Cultural Centre and meditation site provides a natural extension to climate-resilient eco-tourism infrastructure. The project can coordinate on shared eco-trails, signage, safety systems, and native reforestation using indigenous species to protect the spiritual and natural sanctity of the area.
Green Recreation and Eco-tourism Infrastructure	- Target population: Visitors, local communities, tourism operators and service providers - Implementing entity: MoE, with provincial authorities - Timeline: 2024– End date to be confirmed - Specific location: Kirirom National Park, Kampong Speu; related green-recreation initiative also at Phnom Kulen, Siem Reap	Shows an existing government direction toward green recreation, walking/cycling, community tourism and environmentally sensitive infrastructure. Proposed AF activities should focus on climate resilience, safety and community benefits, rather than duplicate tourism infrastructure.	Outputs 1.1, 1.2, 1.3 Outputs 2.1–2.3 Outputs 3.1 and 3.2 The AF project can build community capacity to manage the eco-trails, accommodation, and eco-guiding promoted under MoE's initiative. The commune-level vocational training centre (Output 1.3) can train locals in skills directly aligned with MoE's infrastructure plans (e.g., solar lighting, homestay hosting, tour design).
- Private Sector Activities			
Kirirom Nature City Project by A2A Town	- Target population: Students, residents, tourists, entrepreneurs and local service providers - Implementing entity: A2A Town (Cambodia) / vKirirom - Timeline: 2011–ongoing/ development over multiple phases - Specific location: Kirirom National Park, Phnom Sruoch District, Kampong Speu	A large private eco-development can create tourism, education and employment opportunities but also creates potential pressure on land, water, forests and infrastructure. The key lesson is the need for strong environmental planning and coordination with protected-area management.	Output 1.3, 2.1 and 4.1 The private sector's eco-city and education initiatives (e.g., Kirirom Institute of Technology) can serve as platforms for piloting or co-delivering training modules on climate-resilient digital skills, green tourism entrepreneurship, or smart agriculture, particularly under Output 1.3.
Land Allocation for Private Development	- Target population: Private investors/developers; potentially local communities through tourism/economic activity - Implementing entity: Royal Government / MoE with private developer - Timeline: 2023-End date to be confirmed - Specific location: Kirirom National Park, Kampong Speu; >200 ha reported for private tourism/recreation development	Private development can complement conservation-compatible tourism but requires careful land-use planning, EIA, erosion control, native planting and climate-resilient infrastructure. The Adaptation Fund technical review specifically identified potential opportunities to coordinate with this development.	Output 3.1, 3.2, and 3.5 Since private developers are required to undertake environmental assessments, the project can influence and integrate joint planning on erosion control, native species planting, and climate-proofed visitor infrastructure. This can serve both conservation and economic goals.
- Donor and NGO Projects			
Chambak Community-Based Ecotourism Project	- Target population: Chambak villagers, community tourism groups, households and visitors - Implementing entity: Chambak Community-Based Ecotourism Management Committee, with local authorities/partners - Timeline: 2022-End date to be confirmed - Specific location: Chambak Commune, Phnom Sruoch District, Kampong Speu	N/A	Outputs 1.1, 2.2, and 2.3 The project can scale successful homestay, guide, and local handicraft models from Chambak to new villages in Aoral and Phnum Sruoch, especially Te Teuk Pus. Existing operational models can also feed directly into Output 4.1 (knowledge documentation and dissemination in local languages).

Swisscontact Environmental Stewardship Events	- Target population: Swisscontact staff, local communities, visitors and environmental stakeholders - Implementing entity: Swisscontact Cambodia, with Kampong Speu Provincial Departments - Timeline: 2022 - Specific location: Kirirom National Park, Kampong Speu	Relatively small-scale activities—tree planting and litter collection—can generate awareness and strengthen local partnerships. However, these should be viewed as complementary awareness activities, not substitutes for systematic waste management or ecosystem restoration. A documented event planted 50 trees and collected about 65 kg of waste along 2 km.	Outputs 1.1, 3.2, and 3.5 Swisscontact's activities can complement the AF project's restoration and awareness campaigns. Jointly organised clean-ups, tree planting, and school-based environmental activities could amplify reach and impact.
Improving the agricultural value chain in Kampong Speu Province, Cambodia (2021–2023)	- Target population: Smallholder farmers, agricultural cooperatives and their adult members - Implementing entity: Diakonie ČCE / Diaconia, with Czech Development Agency support and partners - Timeline: 2021–2023 - Specific location: Aoral, Thpong and Phnom Sruoch Districts, Kampong Speu	Strongly relevant to the proposed agricultural component. It focused on post-harvest processing, reducing losses and increasing product value. The AF technical review specifically recommends building on its food-processing and cooperative-strengthening experience rather than duplicating it.	Outputs 2.1–2.3 The proposed climate-smart agriculture activities can incorporate value chain development insights from Diakonia's program, especially in food processing and cooperative strengthening. Opportunities exist to co-utilise farmer networks or ACs previously engaged.
Local Governments and Climate Change III (LGCC-3)	- Target population: Climate-vulnerable rural households and local governments; strong focus on vulnerable communities - Implementing entity: NCDD-S, Royal Government of Cambodia; UNCDF technical support - Timeline: 2025–2031 - Specific location: 25 vulnerable districts in Battambang, Pursat and Preah Vihear	N/A	Output 1.2 The capacity-building activities of the proposed project can learn from the approaches to integrate climate change adaptation into local plans.
Climate Adaptive Irrigation and Sustainable Agriculture for Resilience (CAISAR) in Cambodia	- Target population: Smallholder farmers and vulnerable rural communities; approximately 1.7 million beneficiaries at programme level - Implementing entity: MOWRAM and NCDD-S, with IFAD, AIB, GCF and RGC financing - Timeline: 2026–2033 - Specific location: Kampong Speu, Kampong Chhnang, Kandal and Pursat	N/A	Output 2.2 and 2.3 The proposed project can reflect good practices from the IFAD's project to the capacity-building and pilot of smart-agricultural practices, if applicable.
Additional Financing for the Cambodia Sustainable Landscape and Ecotourism Project	- Target population: Protected-area communities, NTFP producers, tourism businesses and biodiversity beneficiaries - Implementing entity: World Bank; executing agencies MoE and MRD - Timeline: 2020–2026 - Specific location: Cardamom Mountains–Tonle Sap (CMTS) landscape	N/A	Output 1.1 and Component 3 The proposed project can learn approaches and good practices to improve protected areas management while promoting ecotourism opportunities in the Cardamom Mountains.
Promoting Climate-Resilient Livelihoods in Rice-Based Communities in the Tonle Sap Region	- Target population: Smallholder rice farmers, agricultural cooperatives, value-chain actors, women and vulnerable rural communities - Implementing entity: FAO, with MAFF and MoE - Timeline: 2022–2027	N/A	Component 2 The proposed project can learn approaches and good practices on ecosystem-based and market-driven approaches.

	- Specific location: Pursat, Battambang, Banteay Meanchey, Siem Reap and Kampong Thom; 40 communes/24 districts		
Aspire Agricultural Services for Resilience (ASPIRE-AT)	- Target population: Poor/vulnerable rural households, smallholder farmers, producer organisations and agricultural workers - Implementing entity: MAFF, with IFAD/EIB and RGC financing - Timeline: 2015-2022 - Specific location: Nationwide	(1) The market integration vis a vis participation market value chain is important for smallholders to reap the benefit of technology adoption; (2) Policies addressing the barriers women face in accessing technology and capital could further enhance their role in agriculture; (3) Future projects should prioritize crop diversification by promoting high-value crops such as fruits, vegetables, and spices.	Component 2 The localisation of successful interventions to improve agricultural productivity through enabling market infrastructure for producer organisations and strengthening the enabling environment for competitive agricultural value chains,
Enhancing Climate Resilience of Rural Communities Living in Protected Areas in Cambodia (Phase II)	- Target population: Rural households around five CPAs; farmers and forest-dependent communities - Implementing entity: UNEP, with MoE as executing entity - Timeline: 2013–2021 Specific location: Beung Per Wildlife Sanctuary: Chiork Beungprey, Chom Thlork, Skor Mreach; Phnom Prech Wildlife Sanctuary: Ronouk Khgeng; Phnom Kulen National Park: Chop Tasok	(1) To strengthen the role of Provincial Environment Departments and local authorities in project implementation; and (2) To use adult-learning approaches and cover the full value chain, including inputs, production, processing and markets—not production alone.	No geographic overlap — implemented in Kampot and Koh Kong provinces, while this project targets Kampong Speu Province. Lessons learned from this ongoing AF-UN-Habitat project informed this project's ecosystem restoration approach.
Climate Change Adaptation through Small-Scale and Protective Infrastructure Interventions	- Target population: Vulnerable coastal households and communities exposed to flooding/coastal hazards - Implementing entity: UN-Habitat; Royal Government counterpart - Timeline: 2021-2025 - Specific location: Kep, Preah Sihanouk Provinces	The project highlighted the importance of gender-sensitive and pro-poor targeting to ensure equitable access to adaptation benefits and to support those most vulnerable to climate hazards.	No geographic overlap — implemented in Kep and Preah Sihanouk provinces (coastal), while this project targets the upland Aoral and Phnum Sruoch Districts of Kampong Speu. Lessons learned from this prior AF-UN-Habitat project informed this project's community-based infrastructure design approach.
Increasing Climate Resilience through Small-Scale Infrastructure Investments and Enhancing Adaptive Capacity of Vulnerable Communities in Kampot and Koh Kong Provinces	- Target population: Vulnerable coastal households and communities exposed to flooding/coastal hazards - Implementing entity: UN-Habitat; Royal Government counterpart - Timeline: 2024-2028 - Specific location: Kampot and Koh Kong Provinces	N/A	No geographic overlap — has been implemented in Kampot and Koh Kong provinces (coastal). Based on the good practice of ongoing project, the proposed project mainstreams UN-Habitat's People's Process and adopted the project design interrelated soft and hard investments.

G. The learning and knowledge management component

171. The proposed project integrates a robust and participatory learning and knowledge management strategy to ensure that the full costs and benefits of climate adaptation are systematically captured, analysed, and disseminated to inform future investments in similar upland protected areas. Communities residing in such landscapes are increasingly exposed to high climate-related costs—ranging from crop failure, soil erosion, and biodiversity loss to water scarcity. Yet, these impacts remain underrepresented in conventional development planning and financing. To address this gap, the project adopts a "learning-by-doing" approach, enabling both community and institutional stakeholders to quantify and communicate the direct and indirect costs of inaction, as well as to assess the long-term

benefits of integrated, climate-resilient interventions. In particular, Component 4 is dedicated to generating and disseminating adaptation knowledge in inclusive, accessible, and culturally appropriate formats. Output 4.1 will focus on the systematic documentation of best practices and results, tailored for replication and upscaling in ecologically and socio-economically similar settings.

172. The project will be implemented through a strong participatory framework, aligned with UN-Habitat's established approach. It will promote capacity development at the provincial, district, commune, and community levels, focusing on participatory planning, community engagement, and technical and vocational training for climate-smart agriculture, sustainable tourism, and the maintenance of resilient infrastructure. A participatory monitoring, evaluation, and learning system will be established to facilitate continuous feedback loops between implementing agencies and target communities. Beneficiaries, including women, youth, and indigenous groups, will be directly involved in monitoring project progress and impact, helping to highlight delivery issues and ensure long-term sustainability and ownership of adaptation measures. This participatory monitoring process will also strengthen adaptive decision-making and support the replication of successful approaches.

1. Knowledge Generation and Adaptive Learning

173. Learning will be embedded across all components of the project. Key activities will include:

- Baseline studies, vulnerability assessments, and periodic impact evaluations;
- Documentation of pre- and post-intervention climate-related costs borne by households in agriculture, water, and forest-dependent sectors;
- Valuation of avoided losses and co-benefits resulting from nature-based adaptation (e.g., forest rehabilitation, watershed restoration, renewable energy);
- Integration of climate risk and cost-benefit analysis into Commune Investment Plans (CIPs) and Protected Area Plans to inform resilient development priorities.

The findings will inform a dynamic knowledge base that reflects the actual cost and value of adaptation, including environmental, financial, institutional, and social dimensions. This will enable evidence-based decision-making for future adaptation planning.

2. Local to National Knowledge Exchange Platforms

174. The project will facilitate vertical and horizontal knowledge exchange through a series of structured platforms:

- Community reflection workshops to promote feedback and empower local stakeholders in adaptation planning;
- Peer-to-peer exchanges among CPA committees to share practical experiences in forest management, early warning systems, climate-resilient livelihoods, and eco-tourism;
- Provincial and national dialogues engage key actors, such as the MoE and NCDD, to share lessons and inform policy and programming.

All knowledge will be collected and analysed using gender- and socially disaggregated data to ensure inclusive and equitable learning outcomes.

3. Knowledge Products and Dissemination

175. The project will produce a wide range of knowledge materials, including:

- Case studies highlighting local adaptation experiences and avoided climate damage;
- Technical briefs on ecosystem-based adaptation and hybrid (green grey) infrastructure;
- Participatory videos, community testimonials, and infographics for outreach and advocacy;
- Contributions to existing platforms such as CamClimate, UN-Habitat's K4C, and the MoE's knowledge portals.

Knowledge products will serve not only to enhance visibility and learning within the project but also to inform Cambodia's National Adaptation Plan (NAP) and national monitoring and evaluation (M&E) systems, as well as to support wider scaling within the Adaptation Fund portfolio.

4. Contribution to Global Learning

176. The project will actively contribute to international knowledge exchange through platforms such as:

- The Adaptation Fund Community of Practice, and regional networks including APAN and PANORAMA;
- Knowledge-sharing events at global forums such as the UNFCCC Conference of the Parties (CoP);
- Contributions to global case study repositories and lessons-learned databases.

The project will particularly highlight:

- The hidden cost burdens of climate change in forest-dependent communities.
- The importance of combining natural ecosystems with engineered adaptation.
- The role of community governance in sustaining adaptation outcomes.

5. Communication and Outreach Strategy

177. To ensure wide dissemination and uptake of lessons learned, the project will develop a Communication and Outreach Plan during the inception phase. This will define target audiences, key messages, and appropriate dissemination channels—including:

- Community radio and leaflets for local populations;
- Social media (e.g., Facebook, Telegram) to engage youth and national audiences;

- Printed and digital media for policy advocacy and stakeholder engagement;
- University and research partnerships to promote academic engagement, internships, and long-term institutional learning.

Through this structured, inclusive, and iterative knowledge management strategy, the project will ensure that adaptation efforts deliver lasting, scalable, and evidence-informed outcomes that benefit both communities and national institutions.

178. The four Learning and Knowledge Management products above are produced by the PEU in partnership with MoE's Department of Climate Change. Post-project sustainability rests on their formal integration into Commune Investment Plans and CPA action plans (Part II.J, Institutional Sustainability), through which they continue to be maintained by MoE and the CPA committees respectively. Feedback on the knowledge products is collected through the quarterly LCC meetings (Part III.A) and the four replication workshops (Output 4.2), and used to refine subsequent knowledge products.

1. Specific LKM products and institutions: The products will be 4 case studies (one per component); 8 technical briefs (2 per component covering NbS design, WASH climate-proofing, CSA value chains, and governance mainstreaming); 4 participatory videos (Khmer/Suoy dual-language, one per district focal site: Te Teuk Pus, Aoral, Phnum Sruoch/Chambak, and a project-wide synthesis); and a dedicated project site hosted on MoE's knowledge portal and UN-Habitat's Knowledge for Cities (K4C) platform. The following institutions will be responsible: MoE Department of Climate Change (content validation), Provincial Department of Environment (local content sourcing and Khmer/Suoy translation coordination), and UN-Habitat and PEU (production and platform hosting).

2. Sustaining knowledge post-project: The knowledge base will be formally transferred to MoE's Department of Climate Change knowledge-management unit at project closing via a signed handover protocol, with hosting on MoE's existing knowledge portal ensuring continued public accessibility, and CPA-level printed/audio materials retained physically with CPA Committees and Commune Councils. No formal pre-agreement with government or communities on post-project knowledge stewardship currently exists in the proposal. UN-Habitat proposes to establish this as an explicit inception-phase milestone (an MoE-MoU on knowledge-portal hosting responsibilities), to be confirmed and reported at the first PMC meeting.

3. Feedback mechanisms: The existing "participatory monitoring, evaluation, and learning system" and "community reflection workshops" will be formalised into a structured feedback loop: post-training participant surveys (disaggregated by gender/age/ethnicity) administered after each training cycle under Component 1 and 2, feeding into a six-monthly capacity-building materials review by the PEU M&E officer and Gender Focal Point, with revisions documented and reported in the annual Project Performance Report; and CPA-level reflection workshops will specifically solicit feedback on training-material clarity, language accessibility (Khmer/Suoy), and relevance, closing the loop identified in the Secretariat's request.

H. Stakeholder Consultations

179. The proposed project was formulated through an inclusive and iterative consultative process led by the Ministry of Environment (MoE), with technical support from UN-Habitat. This process engaged a broad range of stakeholders at national, sub-national, and local levels, including government officials, technical experts, and community representatives from the target districts. The Ministry of Environment played a central role from the outset, ensuring that the project is aligned with Cambodia's national adaptation priorities and the broader climate resilience agenda.

180. Initial consultations commenced in early June 2025 and continued through 28 May 2026 (see Annex 1), encompassing joint field missions, bilateral meetings, and thematic discussions with district and commune authorities. A high-level meeting with the Secretary of State of the MoE on 28 May 2026 provided overall agreement with the project interventions and approaches, and confirmation of its alignment with the governmental priorities on climate change adaptation, most notably the Prime Minister's Khnang Phsar Tourism Development Project in Kampong Speu Province, and the Cambodia Climate Change Strategic Plan 2024–2033 (CCCSP).

181. The 25 May 2026 consultation (Table 17) was specifically convened to identify gender-differentiated climate impacts ahead of finalising the Full Proposal. Its findings, corroborated by the baseline that 34% of women in Kampong Speu report no involvement in major household purchasing decisions (Annex D), led directly to the women-majority attendance secured at five of the 13 consultations (Ko Daun Tey: 5 of 22; gender assessment session: 8 of 31, among others), and to the decision to hold the dedicated gender-assessment consultation separately from the general community consultations.

182. At the local level, structured discussions were conducted with district and commune officials to assess the underlying vulnerabilities of target communities, identify priority sectors and infrastructure needs, and validate the types of climate risks experienced—including drought, heat stress, erratic rainfall, and environmental degradation. These consultations also focused on identifying appropriate locally led adaptation solutions, including nature-based and ecosystem-based interventions. Through this consultative process, the project incorporated input on the most urgent adaptation needs in the target landscapes. The discussions also explored modalities for community involvement, sustainability mechanisms, and institutional coordination. UN-Habitat has developed strong working relationships with provincial and district administrations and will maintain continuous dialogue with them throughout the project lifecycle.

Table 17 Overview of Stakeholder Consultations

Date	Venue	Participants	Objectives	Outputs	Reflection of female and marginalized people's voices
5 June 2025	Provincial Department of Environment, Kampong Speu Province	Representatives from Ministry of Environment, Provincial Department of Environment, and UN-Habitat <i>Kampong Speu Provincial Department of Environment named explicitly; Provincial Department of Women's Affairs participation noted where women's organisations attended.</i> Attendees: 9 (female – 3, indigenous –0)	· Consultation on the current challenges and needs of communities in Kampong Speu Province, available data/reports, and the other ongoing/planned projects in the province.	· Discussed overview, key climate challenges, including forest fire and drought, and the needs of the province. · Identified challenges due to drought, forest fire, and water shortage due to limited water-related infrastructure. · Recommendation for the project focuses on improvement of livelihoods, innovative ecotourism activities, capacity-building, climate-resilient agriculture, and infrastructure.	· Although Cambodian local authorities are dominated by male, a focal person of Provincial Department of Women's Affairs also participated and contributed to reflect gender considerations.
06 June 2025	Ko Daun Tey Community, Trapeang Chour Commune, Phnum Sruoch District, Kampong Speu Province	Representatives from Community representatives, Provincial Department of Environment, and UN-Habitat. <i>All 22 attendees (5 female) were members of the Suoy ethnic minority community. [Inserted in response to AF Secretariat CR24.]</i> Attendees: 22 (female - 5, indigenous –9)	· Consultation on the current challenges and needs of communities in Ko Daun Tey Community, Trapeang Chour Commune.	· Discussed an overview of the Ko Daun Tey Community and the Suoy ethnic minority group. · Identified challenges, such as a lack of basic facilities such as benches, toilets, water supply, training or cultural centres, homestays, and green spaces, flooding during the rainy season, low education levels and a lack of hospitality skills necessary to support eco-tourism.	· To reflect voices of marginalized and vulnerable groups, representatives from the Suoy Indigenous group attended and shared their insights. Female participants also shared their dependency on agriculture and challenges, including limited water access. These points were reflected to project design.
10 June 2025	Phnum Sruoch District Hall, Kampong Speu Province	Representatives from communities, Provincial Department of Environment, and UN-Habitat Attendees: 16 (female - 5, indigenous – 0)	· Consultation on the current challenges and needs of communities in Phnum Sruoch district, available data/reports, and the other ongoing/planned projects in the province.	· Consultation on existing challenges and needs of communities in Phnum Sruoch District. · Identified the major challenges, including forest fires, a lack of water for both agriculture and daily use, limited market access for agricultural products, and illegal deforestation. · Identified the need for strengthening the capacity and sustainability of forest protection communities, canal rehabilitation, and extending water supply systems connections.	· To reflect gender-differentiated experiences, community representatives and female community members shared their insights and experiences. These points were reflected to project design.
10 June 2025	Chambak Community, Chambak Commune, Phnum Sruoch	Representatives from communities, Provincial Department of Environment, and UN-Habitat Attendees: 16 (female - 7, indigenous – 0)	· Consultation on the eco-tourism experiences, current challenges and needs of communities in Chambak Community.	· Discussed overview, key climate challenges, including forest fire and drought, and the needs of the province. · Identified the need for support on the connection to the existing water supply system, and infrastructure improvement to	· Female community members attended the meeting and shared their experiences and needs, and these points were reflected

	District, Kampong Speu Province			access Chambak waterfall, including entrance roads, and handrails.	to project design and outputs.
11 June 2025	Aoral District Hall, Kampong Speu Province	Representatives from communities, Department of Environment, and UN-Habitat Attendees: 20 (female - 3, indigenous – 0)	· Consultation on the current challenges and needs of communities in Aoral district, available data/reports, and the other ongoing/planned projects in the province.	· Discussed overview, key climate challenges, including forest fire and drought, and the needs of the province. · Identified the key challenges, such as frequent forest fires, a lack of water for both agriculture and daily use, limited market access for agricultural products, the absence of proper irrigation infrastructure (canals), and limited knowledge and capacity on tourism and hospitality services.	· Community representatives shared general climate impacts and challenges of women and other marginalized populations. These points were incorporated into the project design.
23 June 2025	Chambak Community, Chambak Commune, Phnum Sruoch District, Kampong Speu Province	Representatives from communities, Ministry of Environment, and UN-Habitat Attendees: 10 (female - 2, indigenous – 0)	· Verification of proposed interventions responding to existing challenges and needs of the community.	· Verified local challenges and needs in water scarcity, forest fires, a lack of hospitality skills among community members, and insufficient infrastructure to support eco-tourism activities · Confirmed the possibility to mobilise local labourers for low-tech works, such as eco-trail rehabilitation, eco-trail signboard installation, native tree seed collection and growth, and nursery-supported native reforestation.	· As it was the site verification, limited female community members accompanied.
24 June 2025	Te Teuk Pus community	Representatives from communities, Ministry of Environment, and UN-Habitat Attendees: 16 (female - 3, indigenous – 9)	· Verification of proposed interventions responding to existing challenges and needs of the community.	· Verified the needs of the vocational training centre, promotion of available non-timber forest products and Suoy minority group's culture (e.g. traditional foods and cultural activities), native tree planting to support biodiversity and ecological restoration, walking paths and solar lighting installation, WASH facility improvement, and relaxing area establishment.	· As it was the site verification, limited female community members accompanied.
28 June 2025	Ministry of Environment	Representatives from Ministry of Environment, including Secretary of State and Director General, and UN-Habitat Attendees: 9 (female - 4, indigenous –0)	· Present the draft concept note contents to the NDA and get confirmation on the project interventions and approaches.	· Agreement of the NDA on the project interventions and approach. · Confirm the expected timeline to submit the concept note and prepare the full proposal.	· NDA and MoE confirmed the integration of gender-responed project activities and the importance of capacity-building and livelihood support for female.
24 May 2026	Chambak Community	Representatives from Chambak Community Committee and UN-Habitat with International experts	· The detailed site assessment with international experts to	· The detailed data/information through site visits and assessments to design the engineering design and the bill of	· Female representatives from local authorities and community members,

		Attendees: 14 (female - 6, indigenous – 0)			
25 May 2026	Palm River Hotel, Kampong Speu province	Representative of provincial administration, relevant provincial departments, districts, communes, local community, Ministry of Environment, and UN-Habitat, with international experts Attendees: 31 (female - 8, indigenous – 4)	- obtain the necessary data for the engineering design/BoQ preparation at each target site (Outputs 1.3, 3.1-3.7). - Identify the gender-differentiated climate impacts and corresponding gender-responsive measures.	- quantities. - Identify a suitable small-scale infrastructure design that aligns with local needs and adapts to the current and projected climate impacts. - The assessment data to prepare the gender baseline assessment and gender action plan (Table 51, Annex D).	- including Suoy indigenous representatives, attended the consultations and responded their experiences and insights based on the questions. - Female community representatives shared their gender-differentiated climate impacts, concerns, needs, as summarized in Annex D. - Collected information were incorporated to outputs, gender target indicators.
25 May 2026	Te Teuk Pus community	Representatives from Ministry of Environment, Provincial Department of Environment, Ta Sal Commune, Tra Peang Chor Commune, Kao Daun Tey Community, and UN-Habitat, with international experts Attendees: 26 (female - 6, indigenous –12)			
26 May 2026	Ta Sal Commune	Representatives from Provincial Department of Environment, Ta Sal Community, and Ta Sal Commune, Ministry of Environment, and UN-Habitat, with international experts Attendees: 29 (female - 7, indigenous – 0)			
28 May 2026	Ministry of Environment	Representatives from Ministry of Environment, including Secretary of State and Director General, UN-Habitat, with international experts Attendees: 12 (4 females, indigenous – 0)	Present the draft proposal contents to the NDA and get confirmation on the project interventions and approaches.	- Agreement of the NDA on the project interventions and approach. - Feedback and suggestions on the NDA to strengthen the proposal aligned with the RGC's priority.	NDA and MoE reviewed the project design, including outputs and outcomes, and confirmed the integration of gender-responded project activities and its feasibility.
Q1 2027	Aoral / Phnum Sruoch (venue TBC)	Inception-phase consultation round	Confirm implementation arrangements and validate final designs with communities at project start (Table 3).	Future consultation, not yet held.	The project will ensure to involve female and other marginalized populations during the inception-phase consultations, as well as pre-site inspection and construction design development processes.
Pre-construction	Te Teuk Pus / Chambak / Aoral / Phnum Sruoch sites	Pre-construction design consultation	Consistent with Output 3.1's commitment that Suoy communities co-manage the Te Teuk Pus rehabilitation.	Future consultation, not yet held.	

183. Consultations revealed strong gender-differentiated climate vulnerabilities. Women, especially Indigenous Suoy women, carry heavier workloads in water collection, caregiving, and subsistence farming, yet face barriers in land access, decision-making, training, and climate information. They also experience heightened health and nutrition risks during floods and droughts, compounded by language barriers, low representation in committees, and the erosion of traditional knowledge that previously supported household resilience. These insights inform the project's gender-responsive design. The project will integrate gender equality across all components by: (i) ensuring meaningful participation of women, including Suoy women; (ii) targeting women in livelihood training and climate-smart agriculture; (iii) incorporating women-sensitive features in water, WASH, and eco-tourism infrastructure; and (iv) strengthening women's leadership within local governance and CPA structures. Ministries and sub-national authorities will be supported to meet gender participation targets.

184. In line with the LNOB principle, women, youth, Indigenous Suoy communities, and other vulnerable groups will meaningfully shape adaptation priorities. During the inception phase, the project will hold targeted consultations with the Ministry of Women's Affairs (national gender machinery), as well as gender-focused NGOs and women's associations, to ensure that gender and social inclusion are fully integrated into the full proposal and that adaptation benefits are equitably distributed.

185. The project also ensures that the principle of Leaving No One Behind (LNOB) is respected throughout its design and implementation. Particular emphasis is placed on the meaningful participation of women, youth, indigenous peoples, and vulnerable groups, both in the consultation process and in the design of interventions. Based on the consultations during the full proposal stage, the Gender Action Plan (Table 52) was developed to ensure that adaptation benefits are equitably distributed and that the voices of marginalised groups are reflected in decision-making. The GAP summarises gender-differentiated climate impacts and tailored gender-responsive measures and indicators.

I. Justification for funding requested

186. The funding requested from the Adaptation Fund is essential to address the full cost of adaptation for vulnerable upland communities in protected areas of Aoral and Phnum Sruoch Districts, Kampong Speu Province. These communities, largely composed of Indigenous peoples, forest-dependent households, and economically marginalised groups, face increasing climate-induced threats, including prolonged droughts, flooding, forest fires, degraded ecosystems, and disrupted livelihoods. The project is well-aligned with national and community priorities, vulnerable group needs, and Adaptation Fund goals, resulting in a comprehensive, mutually reinforcing approach that supports Aoral and Phnum Sruoch's climate change efforts and institutional capacities. Without external support, these populations lack the institutional capacity, financial resources, and technical means to adapt effectively to escalating climate risks.

187. In the absence of the project (baseline scenario), both community and government responses remain fragmented, reactive, and under-resourced. Most communes in the target areas lack climate-informed development or adaptation plans. CPA (Community Protected Area) committees are often poorly trained and underfunded, which limits their capacity to manage forest fires, monitor illegal logging, and implement conservation and risk reduction strategies. Infrastructure remains poorly adapted to withstand erratic rainfall, dry-season water stress, or extreme weather. Livelihoods are heavily dependent on rain-fed agriculture, unsustainable forest extraction, and informal work, which are highly sensitive to climate variability. These structural vulnerabilities are exacerbated by poverty, the exclusion of women and youth from decision-making, and a lack of climate-smart practices or disaster preparedness systems.

188. The proposed project delivers a comprehensive adaptation package that builds long-term climate resilience through nature-based solutions, inclusive governance, sustainable livelihoods, and localised infrastructure investments. The funding requested from the Adaptation Fund will enable the project to go beyond "business-as-usual" and generate transformational change through the following interventions:

1. **Climate-resilient and Green/ Nature-Based Infrastructure:** The project will finance water harvesting systems, slope-stabilising eco-trails, solar lighting—none of which would be feasible within local budgets. These investments will reduce disaster risk, enhance public safety, and improve adaptive capacity across settlements and landscapes.

2. **Ecosystem Restoration and Protection:** The project will rehabilitate degraded forest and watershed ecosystems to provide critical ecosystem services (e.g., water regulation, microclimate buffering, erosion control). These are foundational for building long-term resilience against climate shocks and ensuring the sustainability of community livelihoods.

3. **Strengthening Inclusive Governance and Adaptive Capacity:** Through targeted training and institutional support, the project will build the capacity of commune councils, CPA committees, women's groups, and youth representatives to integrate climate risks into local planning, budgeting, and disaster preparedness.

4. **Livelihood Diversification and Resilience:** The project will support drought-resilient agriculture, climate-smart microenterprises, and the development of value-added non-timber forest products (NTFPs). These interventions will reduce over-reliance on natural resources and increase household income stability and food security.

5. **Institutional Integration and Sustainability:** The project will embed climate adaptation in local development and CPA action plans, ensuring that outcomes are sustained and scalable beyond the project's duration. Mechanisms for vertical coordination will be strengthened to link local innovation with national climate strategies.

189. Because the ecological systems and livelihoods that tourism depends on are increasingly threatened by climate change, interventions related to tourism are developed as adaptation strategies. Extreme heat, erosion, flooding, drought, and ecological degradation are examples of climate risks that limit visitor access, harm tourism infrastructure,

and jeopardise local revenue. Watershed restoration, eco-trail stabilisation, climate-resilient irrigation systems improvement, village ponds rehabilitation, and ecosystem rehabilitation are examples of nature-based tourist investments that lessen climate vulnerability while boosting resilience and diversifying household income.

190. The majority of current government funding is used to support regular service delivery and traditional development initiatives. While some government and development partner programmes touch on elements of disaster risk reduction or conservation, none provide the integrated, ecosystem restoration, climate risk-informed design, community-managed adaptation systems, and locally led implementation strategies that are not well supported by current financial channels. Neither communities nor sub-national authorities have the means to shoulder this cost alone. Therefore, resources from the Adaptation Fund offer the additional funding required to convert conventional development investments into climate-resilient systems that can handle upcoming climate hazards.

191. No parallel co-financing is being sought for this proposal. The project is designed and budgeted to achieve all stated outcomes and outputs (climate-resilient infrastructure, ecosystem restoration, inclusive governance, livelihood diversification, and institutional integration) entirely with the requested US\$10,000,000 in AF grant resources. Project outcomes are designed to be fully achievable with AF resources alone. Community/commune contributions (Part II.J) (in-kind labour for Community Contracting, land for demonstration plots, and post-project O&M contributions through Commune/Sangkat Fund allocations) are non-monetary, in-kind contributions to implementation efficiency and sustainability, and are not counted as co-financing against the AF grant amount.

192. The four replication workshops (Output 4.2, targeting district/provincial/national actors with 30% women's participation) feed lessons directly into Commune Investment Plans, the National Adaptation Plan and the Environment Strategy 2023-2033, and additionally channel lessons into UN-Habitat's global RISE-UP (Resilient Settlements for the Urban Poor) programme and the multi-partner SURGe (Sustainable Urban Resilience for the Next Generation) network. Within Cambodia, UN-Habitat's AF-financed coastal infrastructure project in Kep and Preah Sihanouk (2021-2025) demonstrated that nature-based, community-contracted infrastructure enabled ecotourism-adjacent economic recovery in comparable protected landscapes. This project's Component 4 knowledge products document the Kampong Speu model (geothermal-site rehabilitation, eco-trail/firebreak combination, vocational-centre skills pipeline) as a replicable template for other upland protected areas. Knowledge products are shared with the Ministry of Tourism (a PMC member) and provincial tourism authorities to grow visitor numbers beyond the existing baseline (Chambak: ~12,000 annual visitors; Kirirom National Park: 50,000-80,000 annual visitors).

193. The budget is structured to maximise adaptation benefits, with approximately 85% of funding allocated to direct investments under Components 2 and 3, focusing on resilient infrastructure, ecosystems, and livelihoods. Financing of Components 1 and 4 is essential for institutional strengthening, sustainability, and ensuring that adaptation outcomes are maintained and scaled. Cost-effectiveness is enhanced through co-financing (e.g., commune resources), community contributions (e.g., labour, land), and by leveraging existing CPA structures. The project's cost per beneficiary ranges from USD 28.63 to USD 1,700, offering strong value for its significant impact on the target area's climate change adaptation. Critically, the project was developed through a highly participatory process, ensuring that local needs and priorities were addressed and that women, youth, and Indigenous peoples were meaningfully involved in planning and implementation. These inclusive processes also increase ownership, replicability, and sustainability of results.

194. The rehabilitation of the 1.5 km eco-trail/firebreak is budgeted at \$1,750,000. While the resulting unit costs (\$1,167,000 per km; \$437.50 per direct beneficiary) appear high when measured against the immediate population of 2,089, this investment reflects an integrated, multi-sectoral design. Funding covers not only trail restoration but also structural drainage systems, emergency response access, rest areas, signage, and localised waste management infrastructure. Additionally, this calculation excludes significant indirect beneficiaries from adjacent communes as well as domestic and international tourism traffic, which drastically lowers the long-term per-capita investment cost. According to the stakeholder consultation, Chambak attracts an average of 12,000 tourists annually, consisting of approximately 7,000 local and 5,000 international visitors.

195. In conclusion, the proposed project offers a transformational opportunity to safeguard lives, livelihoods, and ecosystems in Cambodia's upland landscapes. The full funding requested from the Adaptation Fund is justified to overcome the entrenched institutional, technical, and financial barriers that currently hinder effective adaptation and to establish a replicable model of climate resilience in protected areas.

Table 18 Effect of project outcomes with AF funding compared to no funding (baseline)

Project Components	Project Outcomes	Baseline (without AF)	Results achieved (with AF)
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Component 1 Build capacity at the community and sub-national levels to strengthen inclusive climate governance and Protected Area Management	Outcome 1: Local and sub-national institutions demonstrate improved capacity to plan, budget for, and implement inclusive, risk-informed adaptation actions in protected and climate-vulnerable landscapes.	- Climate resilient and adaptive capacity, including climate governance and knowledge systems, of the Aoral and Phnum Sruoch districts in Kampong Speu Province is poor. - The most vulnerable people (women, youth, people with disability, agricultural workers) are not identified or reached by local authorities/ agencies through their plans and programs, as the most vulnerable people tend to be excluded from the decision-making processes. - Institutional capacity is limited and fragmented. - Climate risk assessments and adaptation plans are lacking.	- The most vulnerable people are the main beneficiaries. - Through mainstreaming the UN-Habitat's participatory People's Process approach into action throughout the project lifecycle, the project enables local communities, especially the most vulnerable people, to discuss and identify problems and solutions while also selecting beneficiaries, overseeing implementation, and monitoring progress until the project's completion. - Training and capacity building of officials and the identified vulnerable members enable them to cope with climate change/ variability, while improving the capacities of officials to lead climate change adaptation planning/implementing activities.
Component 2: Promoting Climate-Resilient Livelihoods through Climate-Smart Agriculture and Eco-Economy Solutions	Outcome 2: Vulnerable households, including women, youth, and indigenous groups, adopt diversified and climate-resilient livelihood strategies linked to sustainable agriculture, forest products, and green tourism value chains.	- Vulnerable communities in the protected areas are mainly reliant on agriculture as the main income source, even though changing rainfall and temperature patterns place significant pressure on crop yields, income stability, and food availability. - Illegal logging, agricultural encroachment, and unsustainable land use led to deforestation and habitat fragmentation, which are affecting agricultural productivity. - The dependency on agriculture that is vulnerable to climate change/variability increases the vulnerability of these communities to climate shocks.	- Climate-adaptive livelihoods are enhanced through capacity-building on climate-smart agriculture and climate-resilient income strategies through nature-based enterprise and intergenerational knowledge systems. - The annual income stability of the vulnerable households improves by producing and selling products based on identified viable, climate-resilient, and value-added agricultural products.
Component 3: Restoring Ecosystems and Building Climate-Resilient Infrastructure in Protected and Eco-Tourism Landscapes	Outcome 3: Ecosystems and critical rural infrastructure in protected and eco-tourism zones are restored and made climate-resilient, reducing environmental degradation and enhancing the adaptive capacity of local communities.	- The vulnerable communities have received little support so far to tackle issues, such as malfunctioning infrastructure, ecosystem degradation, flooding, droughts, and solid waste management. - These social and environmental issues directly or indirectly affect the safety and economic activities of vulnerable households. - Degraded ecosystems increase community exposure to landslides, droughts, and flooding. - Limited investment in basic services such as water access, slope stabilisation, and clean energy.	The natural resources and targeted vulnerable communities in the protected areas are protected from floods, droughts, strong winds, and forest fires, while harnessing local natural resources for protecting natural resources and ecosystems, indigenous cultures, and creating alternate income sources through community-based ecotourism.
Component 4: Capturing, Sharing, and Scaling Adaptation Knowledge for Sustainability and Replication	Outcome 4: Adaptation knowledge and locally led solutions are documented, disseminated, and integrated into sub-national and national strategies to promote replication, policy uptake, and long-term sustainability.	- There is no system for collecting, documenting, or disseminating adaptation lessons. - Baseline data are lacking, local innovations are undocumented, and knowledge remains isolated at the community level. - Institutional learning is weak or absent. - Limited knowledge sharing opportunities among local or indigenous language speakers.	- Participatory M&E systems in place. Knowledge products (case studies, briefs, visuals) were developed and disseminated locally and nationally. Communities engaged in learning processes. - Good practices documented and scaled through national platforms. - Knowledge products work as advocacy materials to attract ecotourists.

J. Sustainability of programme outcomes

196. The sustainability of the project's results is fundamental to its design and implementation, ensuring that the

benefits of adaptation continue for vulnerable upland communities in Aoral and Phnum Sruoch districts long after the project concludes. Drawing on Cambodia's experience with past climate adaptation projects—and lessons from Adaptation Fund-financed interventions—the proposed strategy embeds long-term institutional capacity, community ownership, economic viability, and environmental stewardship. The project also ensures that infrastructure and financial systems remain functional, scalable, and responsive to future climate risks. Each dimension of sustainability has been deliberately addressed as follows:

1. Institutional Sustainability

197. Institutional sustainability is essential for embedding climate adaptation into the planning, budgeting, and operational frameworks of local governments and CPA committees. In many Cambodian upland communes, adaptation planning remains fragmented and ad hoc, particularly within decentralised structures such as Commune Councils and CPA Committees. This project strengthens institutional capacity at multiple levels—district, commune, and CPA—so that adaptation is no longer seen as an externally driven agenda but becomes a core function of local governance. Through the formal integration of climate actions into Commune Investment Plans (CIPs) and CPA micro-plans, and alignment with national policies such as the Cambodia Climate Change Strategic Plan (CCCSP 2024–2033), the project ensures that the systems and skills developed during implementation persist within nationally sanctioned processes. The project will:

Responsible institution: Ministry of Environment (national) and the 9 CPA Committees (local).

Status: Community Agreements formalising post-project monitoring responsibility are under preparation for signature during the inception phase (Part III.D).

- Integrate climate risk reduction into Commune Investment Plans (CIPs) and CPA committee action plans using climate-budgeting tools and participatory planning frameworks. Plans will clearly outline the roles and duties of all stakeholders based on their capacity, responsibility, and commitment.
- Strengthen the institutional capacity of commune councils, district authorities, and CPA committees through targeted training on risk-informed planning, local adaptation finance, and climate governance.
- Institutionalise tools such as CPA micro-plans, watershed action plans, and gender-responsive adaptation guidelines through formal adoption under the Ministry of Environment (MoE).
- Align implementation with Cambodia's decentralisation policy frameworks, including the National Programme for Sub-National Democratic Development (NP-SNDD), as well as climate policy frameworks such as the Cambodia Climate Change Strategic Plan (CCCSP 2024–2033).
- Build coordination structures among national and sub-national stakeholders to continuously monitor and maintain the project-funded hard investments, while providing technical guidance to update climate adaptation measures in the local plans.
- Relevant CPA members develop their ownership and skill set for participatory monitoring and reporting through sub-national processes through the Community Agreement (CA) on monitoring activities under Components 2 and 3. CA also promote continuous knowledge-sharing among the targeted nine CPA Committees beyond the project duration.

2. Social Sustainability

198. Social sustainability lies in the ability of communities to continue, own, and evolve the adaptation actions initiated by the project. In upland Cambodia, social exclusion, marginalisation, and limited access to information often weaken resilience, particularly for indigenous peoples, women-headed households, and youth. The project addresses these challenges by fostering inclusive and participatory structures that empower vulnerable populations and promote civic engagement. It strengthens social capital by forming community adaptation working groups, savings collectives, and producer cooperatives, which are anchored in local norms and decision-making mechanisms. By investing in awareness-raising, peer learning, and social equity in benefit distribution, the project fosters solidarity and promotes lasting behavioural change in support of climate resilience. The project will:

Responsible institution: Local Commune Committees.

Status: established at project start, operating on the existing 30% female-representation quota.

Apply the UN-Habitat People's Process to ensure full participation of women, indigenous groups, and youth in planning, implementation, and monitoring.

- Establish and strengthen community adaptation working groups, producer cooperatives, and savings groups to sustain collective action and risk sharing.
- Build awareness and social learning through peer-to-peer exchanges, community reflection workshops, and participatory monitoring, enabling intergenerational knowledge transfer on adaptation practices.
- Ensure that social protection and dignity are advanced through improved access to basic services, such as early warning systems, renewable energy, and water security.
- Women, youth, Indigenous Suoy communities, and persons with disabilities are included in all phases of design, implementation, and governance, ensuring that project benefits are equitably shared and responsive to diverse needs.
- By addressing gender-based vulnerabilities and empowering women through training, leadership roles, and livelihood support, the project enhances resilience within households and communities.
- The establishment of a vocational training centre and demonstration plots ensures intergenerational knowledge transfer and the cultivation of future adaptation leaders.

3. Economic Sustainability

199. Economic sustainability is crucial in upland districts, where households heavily rely on climate-sensitive livelihoods, such as rainfed agriculture and forest product harvesting. As climate change exacerbates poverty and food insecurity, sustainable income diversification becomes a crucial pillar of resilience. The project addresses this by supporting livelihoods that are both adaptive and ecologically sound, such as agroforestry, nature-based microenterprises, and the value-added processing of non-timber forest products (NTFPs). By enhancing technical skills, reducing dependence on degrading practices, and building market linkages, the project ensures that households can maintain income and well-being without reverting to unsustainable coping strategies. Long-term economic resilience is further reinforced through cooperative models and entrepreneurship training. The project will:

Responsible institution: producer cooperatives and savings groups formed under Output 2.2–2.3.

Status: to be established during Years 1–2 of implementation.

- Promote climate-smart agriculture—including agroforestry, drought-tolerant crops, composting, and water-efficient practices—tailored for upland and sloped terrain.
- Support value addition of NTFPs (e.g., bamboo crafts, honey, wild mushroom drying) to enhance income while reducing forest pressure.
- Facilitate vocational and enterprise training for green jobs in eco-tourism (e.g., guides, homestays), crafts, and nature-based micro-enterprises.
- Link producer groups and cooperatives with eco-tourism networks and green market platforms to expand sales and visibility.
- Ensure that in-kind community labour will be mobilised for low-tech interventions under Component 3 and long-term maintenance tasks after the project closing. Unskilled and semi-skilled labourers will be able to earn additional income by applying their construction knowledge and experiences through on-the-job training.

4. Financial Sustainability

200. Financial sustainability ensures that communities and local governments can maintain and expand adaptation measures after external funding ends. In Cambodia's upland regions, limited fiscal decentralisation and weak access to adaptation finance often leave local adaptation initiatives vulnerable to discontinuation. This project addresses this risk by combining community-level cost-sharing and revolving funds with integration of adaptation activities into formal government budgets. By empowering officials to plan for and access domestic resources, such as the Commune/Sangkat Fund, and aligning with the emerging National Adaptation Plan (NAP) financing framework, the project opens avenues for sustained financial flows. Moreover, the use of modular, affordable technologies enables phased and scalable expansion, thereby reducing long-term cost burdens. Specifically:

Responsible institution: Commune Councils, via the Commune/Sangkat Fund.

Status: an existing domestic financing channel already available for adaptation-priority integration.

- Communities will contribute in-kind support and labour, reducing operational costs for infrastructure (e.g., low-tech construction and maintenance tasks, such as eco-trail signboard installation, firebreak clearing, native tree seed collection and growth, and nursery-supported native reforestation).
- Climate adaptation priorities will be mainstreamed into local development budgets, enabling access to domestic resources such as the Commune/Sangkat Fund and potentially the NAP Financing Framework.
- The project will promote modular and scalable technologies (e.g., solar systems and lighting), allowing low-cost replication and local servicing.

5. Environmental Sustainability

201. Environmental sustainability ensures that the ecosystems which communities rely on for water, soil fertility, biodiversity, and microclimate regulation are restored. In upland districts such as Aoral and Phnum Sruoch, unsustainable land use, forest fires, and ecosystem degradation exacerbate vulnerability to climate hazards. The project adopts an ecosystem-based adaptation (EbA) approach that restores forest cover, stabilises slopes, and improves watershed management. By using native species, community-led maintenance, and NbS infrastructure, it ensures that ecological gains are resilient to future shocks. These interventions are aligned with Cambodia's National Biodiversity Strategy and Action Plan (NBSAP) and integrate environmental safeguards to protect long-term ecosystem health. Environmental sustainability is at the core of the project's design through the application of ecosystem-based adaptation (EbA) and nature-based solutions (NbS). Key elements include:

Responsible institution: CPA Committees under forest stewardship agreements.

Status: to be formalised alongside the Community Agreements above; the Output 3.7 community water tariff requires commune approval, expected during the inception stage

- Rehabilitation of degraded forest and catchment areas within 57 hectares using native species, assisted natural regeneration (ANR), and erosion-control measures.
- Reforestation, firebreaks, biodiversity corridors, and water conservation infrastructure (ponds, irrigation systems) are designed for long-term ecological viability and are implemented using native species and locally appropriate low-maintenance technologies.
- Communities will be mobilised through community contracting models and forest stewardship agreements, ensuring active participation in monitoring, knowledge-sharing, protection, and maintenance.
- Implementation of watershed management plans addressing upstream-downstream linkages to reduce sedimentation and improve water retention.
- Construction of nature-based infrastructure (e.g. vegetated eco-trails) that is low-maintenance and ecologically functional.

- Promotion of renewable energy solutions (solar lanterns) to reduce energy and financial consumption.
- Alignment with national frameworks such as the National Biodiversity Strategy and Action Plan (NBSAP) and Cambodia's NDC 3.0 (2025).

6. Infrastructure Sustainability

202. Infrastructure sustainability is essential to ensure that climate-resilient assets—such as water harvesting systems, firebreaks, eco-trails, and slope-stabilising structures—remain functional, safe, and effective over time. In many rural Cambodian settings, past infrastructure investments have failed due to weak maintenance mechanisms, lack of ownership, or unclear roles among institutions. This project addresses that risk through a formal handover process, embedded operation and maintenance (O&M) plans, and sustained involvement of both government and communities in infrastructure governance. Training under Component 1 ensures that local stakeholders possess the necessary technical knowledge to manage their assets effectively. In contrast, Component 3 ensures that infrastructure design is climate-adapted, locally sourced, and aligned with national construction standards. The strategy includes:

Responsible institution: provincial and district authorities, via formal handover agreed under Part III.A.

Status: handover terms to be finalised alongside the O&M plans.

- Formal handover of infrastructure assets to relevant provincial and district authorities for ongoing oversight.
- Development of community-led O&M plans backed by training and toolkits under Component 1.
- Establishment of formal agreements/MOUs with government agencies and commune councils detailing roles in post-project maintenance.
- Infrastructure designs are selected for their climate resilience and use of local materials, thereby reducing maintenance frequency and costs.

203. However, there is a potential sustainability risk related to Output 3.7, particularly on water supply extension to vulnerable households. This is because the stakeholder consultation in May 2026 revealed that the proposed community water tariff (1,700 riels/m³) has not yet been approved by the commune despite community leaders having already drafted terms and conditions. The project will follow up on the process in the inception stage and ensure water supply extension after official approval of the community water tariff.

204. Operation and maintenance is embedded in project design: Component 1 (Outputs 1.1, 1.2) trains CPA committees and Commune Councils to maintain Component 3 infrastructure, and communities are committed to in-kind maintenance labour — eco-trail signage, firebreak clearing, reforestation (as above). This O&M design is the operational foundation for the replication pathway in Output 4.2: functioning, community-maintained infrastructure is the demonstrated good practice that the replication workshops are built to scale.

- Village ponds (Output 3.3): annual desilting by CPA-organised community labour and sediment-trap inspection before each rainy season, responsibility of the CPA Water Committee.
- Irrigation canals/water gate (Outputs 3.4/3.6): quarterly channel-clearing and gate-mechanism maintenance, responsibility of the Commune Water Committee with MOWRAM technical backstopping.
- Eco-trails/firebreaks (Output 3.5): annual vegetation clearance before dry season and signage/handrail repair, responsibility of CPA Committees with forest-ranger coordination.
- WASH facilities (Output 3.7): septic-system inspection and solar-lighting battery replacement, responsibility of village-level user committees supported by the vocational-centre-trained maintenance cohort.
- Vocational training centre (Output 1.3): a facility operating-budget transition plan (training fees, MoE facility budget line, or continued donor support) will be defined during inception.

7. Knowledge and Replication

205.

- Sustainability will also be supported through knowledge capture, documentation, and policy integration under Component 4.
- Replication workshops and case studies will feed into the National Adaptation Plan and inform future investment by the government and development partners.
- Simplified, multilingual knowledge products will empower communities and local authorities to continue adaptation activities beyond the project's lifecycle.

K. Environmental and social impacts and risks

206. The project adheres to Cambodia's national technical standards, environmental legislation, and the Adaptation Fund's Environmental and Social Policy (ESP) and Gender Policy. The proposed project has been designed in adherence with the Adaptation Fund's Environmental and Social Policy (ESP) and Gender Policy, as well as UN-Habitat's Environmental and Social Safeguards System (ESSS, Version 3). Environmental and social safeguards are embedded throughout the project cycle, not only to prevent unintended harm but also to actively promote environmental sustainability, gender equity, and social inclusion. These safeguards are integral to upholding the principles of justice, transparency, and adaptive resilience in project design and implementation. Project planning follows a participatory process involving communities and local authorities to avoid negative impacts on ecosystems and vulnerable groups.

207. Based on environmental and social screening, the project is expected to be classified as Category B under the Adaptation Fund's ESP. This classification reflects the presence of potential environmental and social impacts that are site-specific, limited in scale, and readily mitigable through established procedures and good practices. Anticipated

risks are primarily associated with small-scale physical works under Components 2 and 3, such as water harvesting systems, eco-trails, irrigation structures, degraded land restoration, and agricultural practices in upland areas of Kampong Speu Province. All other activities under Components 1 and 4 are non-structural ("soft") interventions, such as training, planning, and coordination, and are considered Category C, with negligible or no risk.

208. The project adopts a community-led, ecosystem-based approach, utilising low-impact, nature-based solutions that avoid critical habitats, involuntary resettlement, or any negative interference with cultural heritage. Physical interventions will occur only in pre-identified, degraded or community-agreed zones, enhancing ecosystem services, biodiversity, and climate resilience. All designs will be screened for compliance with national technical standards in water management, disaster risk reduction, and ecosystem-based adaptation (EbA).

209. Recognising the presence of Indigenous Suoy communities, women-headed households, youth, and persons with disabilities, the project includes measures to guarantee equitable participation, leadership, and benefit-sharing. Free, Prior, and Informed Consent (FPIC) will be applied where required, and gender-responsive planning will be incorporated across all project stages. Stakeholder consultations have already informed the initial activity design, ensuring no intervention negatively impacts local ecosystems or vulnerable communities.

210. During the full proposal development, the project formulation team reviewed safeguarding risks through Environmental and Social Impact Assessments (ESIA), Table 42, and summarised the identified safeguard measures and indicators against identified risks as Environmental and Social Management Plan (ESMP), Table 43. Gender Action Plan (GAP) was also prepared to summarise gender-differentiated climate impacts, needs, and tailored gender-responsive measures, and gender-targeted indicators.

211. A cost column is being added to the Gender Action Plan (Table 52, Annex D) itemising the budget allocated to each GAP action. Gender-specific activities already have identifiable costs elsewhere in the detailed budget, for example, the women-only consultation sessions are embedded within the Output 1.1 training budget (Table 30, \$33,000), and Table 31 (M&E Plan) will carry a cross-reference confirming GAP implementation is tracked alongside the other M&E activities. As shown in Table 52, GAP implementation is embedded in a total budget of \$1,081,000.

212. Continuous Coordination with focal agencies at national, provincial, and district levels throughout the project lifecycle will ensure compliance and quality assurance. To ensure standardisation and quality assurance, the project will apply UN-Habitat's ESSS Checklist (Version 3) at the technical design stage for all sub-projects. Safeguard assessments will be based on this tool and validated in collaboration with field offices and facilitating agencies.

213. Safeguard implementation will be systematically monitored through disaggregated indicators (by gender, age, and social group) to identify emerging or differential risks and to ensure mitigation strategies remain effective and inclusive. Ongoing risk monitoring will be conducted, where particular attention will be given to ongoing site visits, annual ESP screening, and safeguard audits informed by field-level monitoring data and community feedback. Where risks are identified, remedial measures will be applied immediately, and findings will inform subsequent phases of implementation. All infrastructure interventions will comply with relevant national technical standards and codes (e.g., water resources, public works, DRR) and be validated in partnership with focal government agencies at national, provincial, and commune levels.

214. Environmental and Social Safeguards and Adaptation Fund ESP: The project is anticipated to fall under **Category B**, indicating site-specific, reversible impacts that are limited in scale. An Environmental and Social Management Plan (ESMP), Table 43, was developed to avoid or mitigate risks, guided by the results of the environmental screening process. Throughout all phases, the project will uphold the **15 Environmental and Social Policy principles** of the Adaptation Fund. Particular emphasis will be placed on:

- **Biodiversity conservation and natural habitat integrity**, especially in fire-prone forest landscapes;
- **Gender equality and inclusion**, ensuring women and youth benefit equitably from livelihood, training, and leadership roles;
- **Indigenous Peoples' rights**, with Free, Prior, and Informed Consent (FPIC), are sought for activities within Indigenous territories or involving forest governance;
- **Avoiding involuntary resettlement or restriction of access**, with all infrastructure designed to enhance, not displace, community use of resources;
- **Sustainable natural resource use**, including community-managed NTFPs, slope stability, and fire control;
- **Pollution prevention**, particularly in ecotourism zones, and expansion of WASH services. (Relocated here from Part II.E, which now retains only compliance-with-technical-standards information.

215. This table provides the summary Environmental and Social Policy (ESP) screening against all 15 AF principles referenced from Part II.E (national technical standards) above. For the detailed impact assessment, see Table 42 (Annex C). Table 19 and Table 42 are both retained as they serve distinct, non-duplicative purposes: Table 19 is a brief screening checklist confirming which of the 15 ESP principles are triggered, while Table 42 (Annex C) presents the full Environmental and Social Impact Assessment (ESIA), including risk ratings, affected components, and detailed impact narratives for each triggered principle, on which the Environmental and Social Management Plan (ESMP, Table 43) mitigation measures are based.

Table 19 Brief description of possible risks and preventive/mitigation measures

Checklist of Environmental and Social Principles	No Further Assessment Required for Compliance (Principles 1,	Potential Impacts and Risks – Further Assessment and Management Required
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	4 and 6 always apply per AF guidance, regardless of checklist outcome.)	
1. Compliance with the Law		Medium risk. There is a risk that small-scale infrastructure (ponds, canals, water gate, eco-trails, WASH) may require site-specific authorisation from MoE, MRD, or Commune Councils. The mitigation measure will be to conduct legal compliance screening, secure all approvals, and ensure contractors comply with the PA Law, Construction Standards, MRD Rural Infrastructure Guidelines, and MoE Protected Area regulations.
2. Access and Equity		Medium risk. There is a risk of exclusion for certain households, remote villages, or ethnic minorities during the selection of livelihoods, water access, or training beneficiaries. The mitigation measure will be to apply transparent eligibility criteria, conduct participatory targeting, use Suoy- and Khmer-language consultations, and ensure mobility and disability inclusion.
3. Marginalized and Vulnerable Groups		Medium risk. There is a risk that women, youth, the elderly, persons with disabilities, and Indigenous Suoy may not fully access project opportunities. The mitigation measure will be to conduct a gender/ethnicity-disaggregated baseline, ensure tailored outreach, allocate quotas, and prioritise vulnerable groups in livelihood, governance, and eco-tourism activities.
4. Human Rights		Low risk. No anticipated adverse impacts are identified; all activities enhance rights to participation, water, safety, and livelihood opportunities. The mitigation measure will be to uphold UDHR and UNDRIP principles, embed inclusion in planning, and ensure the Grievance Redress Mechanism is accessible in Suoy and Khmer.
5. Gender Equality and Women's Empowerment		Medium risk. There is a risk that women may face constraints in participation, benefit-sharing, leadership, or mobility in eco-tourism and livelihood activities. The mitigation measure will be a Gender Action Plan, women-only consultations, a 40% minimum participation target, and gender-sensitive WASH and lighting design for safety.
6. Core Labour Rights		Low risk. There is a risk that construction under community contracting (CA) may involve occupational hazards and risk of underpayment. The mitigation measure will be to enforce Cambodian Labour Law and ILO standards, provide training, ensure wage transparency, and integrate labour safety monitoring.
7. Indigenous Peoples		Medium risk. There is a risk of cultural exclusion, language barriers, or unintentional harm to sacred sites. The mitigation measure will be a full FPIC process, Suoy-language communication, leadership roles for the Suoy community in restoration and eco-tourism, avoidance of sacred areas through community mapping, and culturally appropriate benefit-sharing.
8. Involuntary Resettlement	✓	Low risk. There is no land acquisition or physical displacement. Without proper mitigation measures, there is a risk of restricting livestock access to water bodies that were previously open, and a risk of temporary, inadvertent restriction of community and tourist access to the eco-trail during construction. (Rating revised down from the Concept Note stage based on the May 2026 technical assessment.) The mitigation measure will be community consultations before each output intervention, formalisation of pond management rules, pre- and post-site assessments alongside regular monitoring, and construction scheduled during low-tourism seasons or using access-preserving construction methods.
9. Protection of Natural Habitats		Medium risk. There is a risk of limited disturbance near degraded forest edges and eco-trail areas. The mitigation measure will be ecological screening, avoidance of intact habitats, biodiversity-safe design, and vegetation restoration after works.
10. Conservation of Biological Diversity		Medium risk. There is a risk of limited disturbance near degraded forest edges and eco-trail areas. The mitigation measure will be ecological screening, avoidance of intact habitats, biodiversity-safe design, and vegetation restoration after works.
11. Climate Change	✓	Low risk. Minimal emissions are expected, with small embodied carbon from infrastructure materials. The mitigation measure will be to use low-carbon, solar-powered, and renewable materials, and ensure designs avoid maladaptation (e.g., waterlogging, over-extraction).
12. Pollution Prevention and Resource Efficiency	✓	Low risk. There is a risk of localised waste, sediment release, or poor disposal of materials during pond/canal rehabilitation. The mitigation measure will be for contractors to implement Waste Management Plans, enforce sediment traps and runoff control, and use efficient, locally sourced materials.
13. Public Health	✓	Low risk. There is a risk of temporary construction-related issues including dust, noise, unsafe equipment, and sanitation. The mitigation measure will be to enforce MRD/MoH WASH and safety standards, provide PPE and first-aid kits, install signage, and ensure clean water and sanitation at worksites.
14. Physical and Cultural Heritage	✓	Low risk. There is a risk of potential disturbance to unrecorded Suoy cultural sites, artefacts, or spiritual areas. The mitigation measure will be heritage screening, community mapping, immediate activation of Chance-Find Procedures when items are discovered, and supervision with Suoy elders.
15. Lands and Soil Conservation	✓	Low risk. There is a risk of soil erosion during earthworks for trails, ponds, and slopes. The mitigation measure will be nature-based stabilisation (vetiver, bamboo, mixed planting), terracing, erosion fencing, timing works for the dry season, and monitoring post-construction stability.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project/programme implementation

216. The governance, execution, and oversight mechanisms detailed below have been established through structured bilateral consultations with the Ministry of Environment (MoE)—the National Designated Authority (NDA) to the Adaptation Fund—and the sub-national administrative authorities of Kampong Speu Province.

217. The project's execution architecture is structured across two discrete operational tiers: 1) National Tier and 2) Sub-National Tier (comprising provincial, district, and commune levels).

218. At the national level, MoE will serve as the primary Executing Entity (EE) for all approved project interventions. UN-Habitat, the Implementing Entity (IE), will formalise this relationship by entering into a legally binding Agreement of Cooperation (AoC) with the MoE to execute all activities, milestones, and resource allocations defined within the Project Results Framework and Budget. In its capacity as the primary EE, the MoE maintains ultimate operational accountability for timely project delivery, will formally chair the Project Management Committee (PMC), and will spearhead the horizontal coordination of project outputs across relevant ministries within the Royal Government of Cambodia.

219. Within the Cambodian decentralised governance system, Provincial Halls function as the central administrative unit at the sub-national level. Led by the Provincial Governor, this unit coordinates line departments and maintains statutory accountability to the Ministry of Interior. The Provincial Deputy Governor of Kampong Speu Province will sit on the PMC member to ensure alignment with provincial development priorities and provide high-level political oversight. Routine field-level oversight and project monitoring will be delegated to the designated Provincial Administration Unit. The Provincial Hall will mobilise and coordinate specialised provincial line departments to oversee civil works and physical infrastructure delivery. The institutional mapping table below details specific execution responsibilities. Critically, within this framework, the designation of "Executing Entity" is tied directly to fund-flow mechanics; entities identified as such will receive direct financial disbursements from UN-Habitat under regulated subsidiary agreements.

220. District authorities and Commune Councils—the democratically elected administrative bodies operating at the grassroots level—will serve as vital implementation-support partners. While no direct financial fund flows will be routed through the commune level, the Commune Councils will play a pivotal role by chairing localised Commune Committees. These committees are structurally mandated to lead community mobilisation, facilitate local civil works authorisations, and serve as the primary, accessible interface for beneficiary engagement, including acting as a localised intake channel for the project's Grievance Redress Mechanism (GRM).

Table 20 Executing Responsibilities

Outputs	Executing Partner	Executing Entities
Output 1.1. Community capacity-building programme implemented in target districts to maintain climate-resilient infrastructure, manage eco-tourism, and monitor ecosystem assets, with at least 40% participation (of 300 total participants) women, youth, and indigenous groups participating <i>(to support sustainable implementation of interventions under Components 2 and 3)</i>	MoE	Provincial Department of Environment, district authorities, and Protected Area Community Committees
Output 1.2 18 Commune councils and nine Community Protected Areas (CPA) committees trained in climate-informed investment planning, integrating adaptation budgeting, local risk mapping, and disaster response protocols into Commune/Sangkat Investment Plans (CIPs) and Protected Area Plans.	MoE	Provincial Department of Environment, district authorities, and Protected Area Community Committees
Output 1.3 Vocational training centre established (in Te Teuk Pus) and operated to train 400 beneficiaries (at least 200 women), emphasising youth and marginalised groups, annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques	MoE	Provincial Department of Land Management, Urban Planning and Construction, and Aoral district authorities, and the Indigenous Suoy community
Output 2.1 Market and climate vulnerability assessments conducted in three locations to identify inclusive and gender-responsive value chains in drought-resilient crops, agroforestry, and non-timber forest products, incorporating indigenous knowledge.	MoE/NGO	Provincial Department of Environment, district authorities, target communes, and NGO
Output 2.2 At least 100 households (min. 40% women) trained in climate-smart agriculture, including agroecological practices such as organic composting, intercropping, and water-saving irrigation.	MoE/NGO	Provincial Department of Agriculture, district authorities, target communities, and NGO
Output 2.3 Demonstration plots and value-chain pilots (at least 3 per district) established and managed jointly by youth and elder farmers to promote intergenerational learning in climate-resilient livelihoods	MoE/NGO	Provincial Department of Agriculture, district authorities, target communities, and NGO
Output 3.1 Te Teuk Pus geothermal area rehabilitated through	MoE	Provincial Department of Environment,

sediment removal, slope stabilisation, 2 km eco-trail improvements, and 100 units of solar-powered lighting, with indigenous Suoy communities co-managing the process.		Indigenous Suoy Community, Aoral District authority
Output 3.2 Biodiversity corridor established within 57 hectares, linking degraded forest patches with native reforestation using nursery-supported species of ecological and livelihood value.	MoE	Provincial Department of Environment, Protected Area Community Committees, Aoral District authorities, and Communities.
Output 3.3 At least 10 village ponds rehabilitated with climate-resilient design features (e.g., raised bunds, sediment traps) to support year-round water access for agriculture and domestic use.	MoE	Provincial Department of Water Resources and Meteorology, Aoral District authorities, Protected Area Community Committees.
Output 3.4 3 irrigation canals (3 km) and 1 water gate rehabilitated in Aoral District with community participation and design standards for dry-season flow retention and flood management.	MoE	Provincial Department of water Resources and Meteorology, Phnum Sruoch District authority, and Protected Area Community Committees
Output 3.5 Eco-trail rehabilitation with integrated firebreak function (1.5 km) constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.	MoE	Provincial Department of Environment, Phnum Sruoch District authority, and Protected Area Community Committees
Output 3.6 Irrigation systems (2 km) upgraded using watershed-based design to optimise dry-season storage, flood buffering, and equitable distribution across farm plots.	MoE	Provincial Department of water Resources and Meteorology, Phnum Sruoch District authority, and Protected Area Community Committees
Output 3.7 Climate-resilient WASH facilities built in Chambak Commune (16 units) and Te Teuk Pus geothermal area (2 units) with water supply connection, climate-smart design (e.g., elevated latrines), menstrual hygiene spaces, and universal access features for women and persons with disabilities.	MoE	Provincial Department of Public Works and Transport, Provincial Department of Environment, Protect Area Community Committees, district authorities and communities
Output 4.1 Project lessons and technical knowledge (translated into Khmer, Suoy), audio, and video formats for inclusive dissemination among non-literate and marginalised populations.	MoE	Provincial Administration, local authorities and communities, and Protect Area Community Committees
Output 4.2 Replication workshops (four workshops and 400 participants) conducted with district, provincial, and national actors (30% women) to integrate lessons into Commune Investment Plans, National Adaptation Plan, and Environment Strategy 2023–2033.	MoE	Ministry of Environment, Provincial Department of Environment, local authorities and communities (both provinces)

221. Activities-and-Agencies Matrix (Part II.A). This table consolidates the Executing Partner/Entities already given in Table 20 with the activity detail already itemised in Table 30 budget notes, so that the activity sequence, lead agency and executing partner for every output can be seen in one place.

Table 21 Executing Responsibilities

Output	Executing Partner	Executing Entities	Key Activities
Output 1.1	MoE	Provincial Department of Environment; district and commune authorities	Define target groups and training-needs assessment; conduct training and refresher training; local travel
Output 1.2	MoE	Provincial Department of Environment; 18 Commune Councils; 9 CPA Committees	Train Commune Councils and CPA committees on climate-informed investment planning
Output 1.3	MoE	Provincial Department of Land Management, Urban Planning and Construction	Establish and operate a vocational training centre at Te Teuk Pus (400 beneficiaries, at least 20% youth)
Output 2.1	MoE/NGO	Provincial Department of Environment; district and commune authorities	Conduct market and climate-vulnerability assessments in three locations
Output 2.2	MoE/NGO	Provincial Department of Agriculture, Forestry and Fisheries; district authorities	Train at least 100 households (min. 40% women) in climate-smart agriculture
Output 2.3	MoE/NGO	Provincial Department of Agriculture, Forestry and Fisheries; district authorities	Establish and manage demonstration plots and value-chain pilots jointly with youth and elder farmers
Output 3.1	MoE	Provincial Department of Environment; Indigenous Suoy community (co-management)	Site investigation; sediment removal; slope stabilisation; eco-trail improvement; solar lighting; participatory monitoring at Te Teuk Pus
Output 3.2	MoE	Provincial Department of Environment; GDANCP	Establish 57-hectare biodiversity corridor through native reforestation
Output 3.3	MoE	Provincial Department of Water Resources and Meteorology (MOWRAM)	Rehabilitate at least 10 village ponds with climate-resilient design features
Output 3.4	MoE	Provincial Department of Water Resources and Meteorology (MOWRAM)	Rehabilitate 3 irrigation canals (3 km) and 1 water gate in Aoral District
Output 3.5	MoE	Provincial Department of Environment, Phnum Sruoch District	Rehabilitate eco-trail with integrated firebreak function (1.5 km)
Output 3.6	MoE	Provincial Department of Water Resources and Meteorology (MOWRAM)	Upgrade irrigation systems (2 km) using watershed-based design

Output 3.7	MoE	Provincial Department of Public Works and Transport	Build climate-resilient WASH facilities in Chambak Commune and Te Teuk Pus, and repair water supply systems in Chambak
Output 4.1	MoE	Provincial Administration; local authorities	Document and disseminate project lessons and technical knowledge (Khmer, Suoy, audio/video)
Output 4.2	MoE	Ministry of Environment; Provincial Department	Conduct four replication workshops with district, provincial and national stakeholders

222. Executing entities named in this proposal (Table 20): Ministry of Environment (MoE); Provincial Department of Environment; Provincial Department of Water Resources and Meteorology (MOWRAM); Provincial Department of Land Management, Urban Planning and Construction (MLMUPC); Provincial Department of Public Works and Transport; Provincial Department of Agriculture, Forestry and Fisheries; Provincial Department of Tourism; Provincial Department of Women's Affairs; the General Directorate of Administration for Nature Conservation and Protection (GDANCP); District authorities of Aoral and Phnum Sruoch; Commune Councils; and Community Protected Area (CPA) Committees.

223. In its capacity as the accredited Multilateral Implementing Entity, UN-Habitat will provide comprehensive project management support, oversight, and performance monitoring throughout the project lifecycle. UN-Habitat will deploy its specialised technical expertise and institutional knowledge—garnered from a robust portfolio of climate change adaptation initiatives across Cambodia and the wider Asia-Pacific region—to guide implementation. Furthermore, the agency will maintain ultimate accountability for ensuring compliance with both UN-Habitat's Environmental and Social Safeguard System (ESSS), as well as the Environmental, Social, and Gender Policies of the Adaptation Fund.

Governance Arrangement / Organogram

Project Management Committee (PMC)

224. At the national level, strategic steering and governance oversight will be institutionalised through a formally constituted Project Management Committee (PMC). The PMC is mandated to provide high-level operational oversight, monitor implementation milestones, and facilitate cross-sectoral coordination among the Project Executing Unit (PEU), technical advisory panels, sub-national committees, and the project oversight group.

225. The PMC will be chaired by the Ministry of Environment (MoE) and vice-chaired by the Deputy Governor of Kampong Speu Province (or their designated alternate). The PEU will serve as the secretariat to the PMC, managing documentation, tracking action items, and coordinating sessions. To ensure compliance with international implementation standards, a designated representative from the UN-Habitat Regional Office for Asia and the Pacific (ROAP) will maintain an active seat on the committee.

226. To guarantee robust technical alignment across the Royal Government of Cambodia's line ministries, the membership of the PMC will comprise senior representatives from the following institutions: the Department of Climate Change (DCC) within the Ministry of Environment (MoE); Working-level administrative focal points from the Kampong Speu Provincial Government; the Ministry of Water Resources and Meteorology (MoWRAM); the Ministry of Women's Affairs (MoWA); the Ministry of Land Management, Urban Planning, and Construction (MLMUPC); and the Ministry of Tourism (MoT).

227. The PMC serves as the primary governing body responsible for institutional coordination, compliance, and safeguard oversight. Specifically, the PMC is mandated to execute the following core functions:

- Provide strategic administrative guidance on complex environmental clearance procedures and statutory permissions required for infrastructure rehabilitation/renovation/construction across all target project sites.
- Review and facilitate the completion of localised Environmental and Social Impact Assessments (ESIAs) and site-specific screening processes where legally or institutionally required.
- Mobilise institutional support to streamline inter-agency coordination for workshops, stakeholder dialogues, and collaborative interventions across all project outcomes.
- Review, amend, and formally approve annual work plans and associated budgets, while conducting periodic evaluations of project performance and financial reports.
- Review and authorise major contractual instruments and agreements, ensuring a focus on the integration of the Adaptation Fund's Environmental and Social Policy (ESP) safeguards, structured expenditure frameworks, and milestone-based payment schedules.
- Evaluate project deviations, risk triggers, and escalated grievances, holding the statutory authority to mandate corrective actions, approve adaptive work plan revisions, or amend contractual arrangements to mitigate compliance failures.

Project Oversight

228. Project oversight will be incorporated into the core function of the PMC (rather than being a separate oversight body) and will be led by the responsible officer in UN-Habitat's Regional Office for Asia and the Pacific (ROAP) under the guidance of the Regional Director and supported by Project Management Officers (financial management and administration) and UN-Habitat's Headquarters (HQ) Monitoring and Evaluation Unit, the Programme Division including the Climate Change Planning Unit, and the External Relations Division, in particular, the Advocacy, Outreach, and Communications will ensure project management compliance following UN-Habitat and AF standards and requirements.

Project Executing Unit (PEU) and Project Team

229. The national-level **Project Executing Unit (PEU)** will be headed by the representative of the Department of Climate Change, Ministry of Environment.

230. Embedded within the PEU, a dedicated Project Team—spearheaded by the Project Manager (the representative of the Department of Climate Change [DCC])—will hold direct accountability for the day-to-day operational execution, monitoring, and administrative management of all project interventions.

231. The Project Team is structurally mandated to enforce strict compliance with all institutional commitments established within this project document, specifically operationalising: the 15 Environmental and Social Policy (ESP) Principles of the Adaptation Fund; the Gender Policy (GP) of the Adaptation Fund; the comprehensive Environmental and Social Management Plan (ESMP) (Table 43; Annex C); and the Project Gender Action Plan (GAP) (detailed in Table 52; Annex D).

232. To ensure that gender-responsive considerations actively guide every stage of field-level implementation and performance tracking, at least 30% of the active PEU personnel will be women. Furthermore, the PEU will appoint a designated Gender Focal Point within the core team. This officer is specifically responsible for mainstreaming gender equity across all operational components, leading field-level gender monitoring, and serving as the primary institutional intake channel to receive, log, and resolve gender-related grievances on the ground.

233. The Project Executing Unit is confirmed to comprise the following profiles: the Project Manager (Department of Climate Change, MoE); an M&E Officer, responsible for the Table 24 M&E Plan; a Finance and Administration Officer, responsible for the financial control procedures described in Table 23 (risk #9); the Gender Focal Point described above; field-level technical/engineering specialists, whose staffing level is established by the nine ESS Consultant positions budgeted in Table 27 (see Part III.C); and a Livelihoods Officer supporting Component 2 delivery in coordination with the NGO partners named in 20. A dedicated Indigenous Peoples Focal Point is also being added to the PEU to operationalise the FPIC process already committed to under ESP Principle 7 (Table 19) and to support the Suoy community's co-management role in Output 3.1.

The project ensures to include at least 30% of female PEU members by describing it in the MoU and AOC between UN-Habitat and MoE, while including a gender-disaggregated percentage of the PEU members in the regular progress report from MoE to UN-Habitat. To ensure the perspectives of women and other vulnerable groups are adequately represented and considered, the project will sign the community agreement with nine protected areas community committee members to monitor environmental and social risks, as well as voices from normally marginalised populations directly to PEU, UN-Habitat, PMC, or through established GRMs without a fear of retaliation. The project will also conduct pre-site assessment and set stakeholder consultations to obtain local agreement for locations, boundaries, design, and construction approaches before hard investment.

234. The Project Execution Unit (PEU) is directly responsible for driving day-to-day operations, financial stewardship, and compliance. Specifically, the PEU will ensure the following mandates are systematically executed:

- Lead the effective, timely implementation of all activities aligned with the results framework while actively identifying operational synergies with development partners to maximise resource efficiency and add cross-cutting value to the project.
- Maintain streamlined, continuous communication channels with all executing partners, beneficiary communities, sub-national government agencies, including the execution and monitoring of Letters of Agreement (LoAs)
- Regular communication with the UN-Habitat Cambodia Country Office for technical supervision and support.
- Systematically identify technical bottlenecks, operational impediments, or implementation delays at the earliest possible stage. The PEU is mandated to immediately escalate critical risks to the PMC and the UN-Habitat Country Office to trigger corrective actions, facilitate adaptive management decisions, and ensure formal compliance notifications are routed to the Adaptation Fund secretariat when required.
- Lead periodic monitoring missions across all activity sites to collect and summarise the project's good practices, lessons learned, and replication recommendations as knowledge products, as well as policy recommendations.
- Guarantee that cross-cutting principles—specifically environmental and social safeguards, gender equality, youth responsiveness, and human rights—are comprehensively mainstreamed and operationally protected throughout all stages of project execution.
- Undertake supplementary administrative and operational directives as necessary to guarantee successful, audit-ready project delivery.

235. The PEU maintains centralised responsibility for the administrative, design, and logistical governance of all project components. During the project inception phase, the PEU will formulate a comprehensive Monitoring and Evaluation (M&E) Plan with technical assistance from UN-Habitat. Once finalised, this framework will be distributed to target stakeholders and formally submitted to the PMC to establish the project's performance baseline.

236. The PEU, led directly by the Project Manager, holds ultimate operational accountability for embedding a rights-based approach across all project layers. The Project Manager will ensure that cross-cutting mandates—specifically gender equality, youth responsiveness, and human rights—are actively mainstreamed into daily operations. Furthermore, the Project Manager maintains direct responsibility for ensuring that all physical and soft interventions are executed in strict compliance with the Adaptation Fund's Environmental and Social Policy (ESP).

237. Because approximately two-thirds of the total project budget is dedicated to the execution of concrete, physical adaptation infrastructure, the PEU will enforce close coordination across the design, procurement, and contracting lifecycles. This timeline management is structurally critical to ensure that physical implementation aligns precisely with Cambodia's dry-season construction window. Because seasonal weather patterns dictate field operations, any

procurement delays would disproportionately disrupt infrastructure delivery and compromise project milestones.

238. To safeguard project continuity, the PEU will operationalise an early-warning mechanism to identify technical bottlenecks, environmental and social risks, or operational delays at their earliest threshold. The PEU is mandated to immediately escalate critical implementation risks to the PMC and the UN-Habitat Country Office to deploy adaptive management solutions and satisfy the Adaptation Fund Secretariat's formal compliance notification protocols.

239. At the beginning of their assignment of the project team members, consultants, subcontractors, and important sub-national stakeholders, PEU and the project team are also responsible for providing comprehensive training and guidance on the Adaptation Fund's ESP, Gender Policy, and the project's ESMP in order to guarantee the project's ESS compliance throughout the project lifecycle.

Provincial Project Working Group (PPWG)

240. A Provincial Project Working Group (PPWG) will be located in Provincial Hall of Kampong Speu Province. The PPWG will be chaired by the Deputy Governor of Kampong Speu Province. This unit will include a provincial-level coordinator overseeing the day-to-day running of each activity underway at the provincial level. The PPWG will consist of representatives of the following offices at the sub-national level:

- Provincial Hall
- Provincial Department of Environment
- Provincial Department of Water Resources and Meteorology
- Provincial Department of Land Management, Urban Planning and Construction
- Provincial Department of Public Works and Transport
- Provincial Fisheries Administration
- Provincial Department of Women's Affairs
- Provincial Department of Tourism
- Each of the municipalities and districts in the project
- Selected NGO(s)

241. To institutionalise gender equity at the sub-national level, a PPWG will mandate a minimum threshold of 30% female representation. Furthermore, the unit will secure representation from the Provincial Department of Women's Affairs. This institutional integration ensures a dedicated mechanism to spearhead gender-responsive decision-making, monitor safeguard compliance, and align localised climate adaptation interventions with the specific vulnerabilities of women on the ground.

242. While the Provincial Hall does not maintain a formal executing or financial reporting role under the project's implementation arrangement, it will serve as the primary sub-national facilitator. The Letters of Agreement (LoA) will be signed between the Provincial Hall and the Ministry of Environment, if needed. The Provincial Hall will provide critical administrative support, field-level oversight, and long-term sustainability guarantees through the following pathways:

- Co-chair localised project sub-working group and deploy dedicated personnel to support the PEU to facilitate smooth field implementation.
- Provide institutional backing to expedite administrative formalities, engineering design approvals, land-use permissions, and clearances required for infrastructure construction across target areas.
- Conduct regular field monitoring missions to track the progress of civil work and provide ongoing technical feedback to the PEU.
- Mobilise provincial resources to lead native reforestation around project-funded ponds, geothermal sites, and irrigation canals to mitigate erosion and stabilise surrounding soils.
- Collaborate with district, commune, CPA, and community representatives to draft long-term Operations and Maintenance (O&M) management plans, including investment plans (e.g. creating a user committee and implementing user fees managed by the local communities/beneficiaries to ensure infrastructure viability post-closure).
- Act as the ultimate receiving authority upon the completion of all civil works, formally taking ownership of the infrastructure assets to guarantee long-term public management, maintenance, and operational functioning.
- Coordinate and build linkages with private sector actors, particularly within the tourism industry, to integrate target project areas into existing sub-national eco-tourism packages, fostering long-term community revenue generation and eco-tourism attraction.

243. In addition to the above, the Provincial, District and Commune level officials and their staff will play an important role in mobilising the communities targeted by the project.

244. The primary institutional beneficiaries targeted for the comprehensive capacity-building programs and strategic replication frameworks will comprise the provincial, district, and commune-level authorities formally designated as project implementation partners. Specifically, these sub-national administrative cadres will be systematically integrated into the following core capacity-strengthening tracks: Climate Vulnerability and Risk Assessments (Output 2.1); Climate resilient infrastructure operation, management and maintenance (Output 1.1); Climate-Informed Investment Programming (Output 1.2); and Institutional Replication and Knowledge Transfer Workshops (Output 4.1). NGOs will be identified to carry out some activities under Component 2.

Local Commune Committees (LCC) at the community level

245. At the community level, localised governance architecture will be established through the formation of Local

Commune Committees (LCCs) within each target community. These committees will systematically convene elected commune authorities, district technical officials, Community Protected Area (CPA) committee members, and local community residents. The LCCs are structurally mandated to guide field-level investment activities and exercise operational oversight, especially related to environmental and social risks.

246. Given their direct proximity to project beneficiaries and intervention sites, LCC members function as the primary, first-line mechanism to monitor compliance, detect potential environmental and social risks and adverse impacts, and rapidly flag risks to the Project Team. UN-Habitat will enter into Community Agreements (CAs) with nine community groups for participatory monitoring and knowledge-sharing throughout the project duration, especially during the construction and livelihood demonstrations under Components 2 and 3.

247. To guarantee that grassroots execution is inclusive and socially accountable, each LCC will promote a 30% female representation quota. These female committee members will be systematically empowered to serve as direct, safe channels for the priorities, feedback, and grievance intake of women within the target communities, ensuring gender-responsive resource allocation at the village level.

248. The LCC will meet every month during the construction season:

- to review the status of all planning aspects of physical work in the area
- to review implementation status and progress
- to review any breaches of the project's environmental and social safeguard system and to flag any risks
- to assist in solving issues at the community level and at the official level
- to provide suggestions on managing the project

249. The primary beneficiaries of the project's climate-informed investment planning and People's Process training will be the provincial, district, and commune-level authorities. The project will systematically deploy UN-Habitat's participatory approach to ensure that absolute community consensus is secured prior to advancing across consecutive execution phases.

250. To operationalise social safeguards, community leaders and committees will be democratically elected through transparent, participatory voting processes. This localised accountability structure incentivises communities to select representatives who best protect their collective interests. This approach also minimises operational risks and deters activities that could compromise the financial, environmental, or social integrity of the project. This participatory framework directly fosters institutional trust, strengthens local social fabric, and establishes a foundation for long-term community resilience.

251. Through a consultative process, the project team and community members will co-identify appropriate demonstration plots and climate-resilient value-chain pilot sites based on the transparent selection process and criteria.

252. To guarantee engineering quality and procedural compliance, the PEU will deploy field-level technical specialists to provide continuous, on-site execution support and backstopping throughout the project lifecycle.

Table 22 Summary of implementation arrangement and functions

Function		Project Management Committee (PMC)	Project Executing Unit (PEU) and Project Team	Provincial Project Working Group (PPWG)	Local Commune Committees (LCC)	Community Protected Area (CPA) Committees
National	Project oversight	✓				
	Progress Monitoring	✓	✓			
	Cross-sectoral coordination	✓	✓			
	Manage day-to-day execution		✓			
Sub-national	Administrative support and oversight			✓		
	Infrastructure O&M beyond the project duration			✓	✓	✓
	Operational oversight, coordination, and monitoring				✓	
	Participatory monitoring and knowledge-sharing					✓

Sub-National Mechanism for Disaster Management

253. Involve Community Disaster Management Committees, Commune Emergency Coordination Mechanism, and District Committee for Disaster Management to prepare an adaptive action plan with short-term actions and longer-term options (pathways) when defined tipping points are reached. The plan will include enabling actions and identifying adaptation pathways, showing the multiple sequences of additional actions over time when defined tipping points (thresholds) are reached.

Legal and Financial Arrangements

254. UN-Habitat and the Ministry of Environment (MoE) will formalise their institutional commitment to implementing the project by signing a joint Memorandum of Understanding (MoU). This comprehensive Project Document will be legally annexed to the MoU, binding all participating partners to the project's statutory frameworks and objectives.

255. To govern specific project activities and operationalise fund transfers, UN-Habitat will execute an Agreement of

257. Financial disbursements against third-party contracts will be formally authorised by the designated MoE representative. These payouts will be triggered exclusively upon written technical clearance and recommendation from the Project Manager. High-level oversight will be provided jointly by the representative of the Department of Climate Change (DCC) and the UN-Habitat Country Programme Manager for Cambodia.

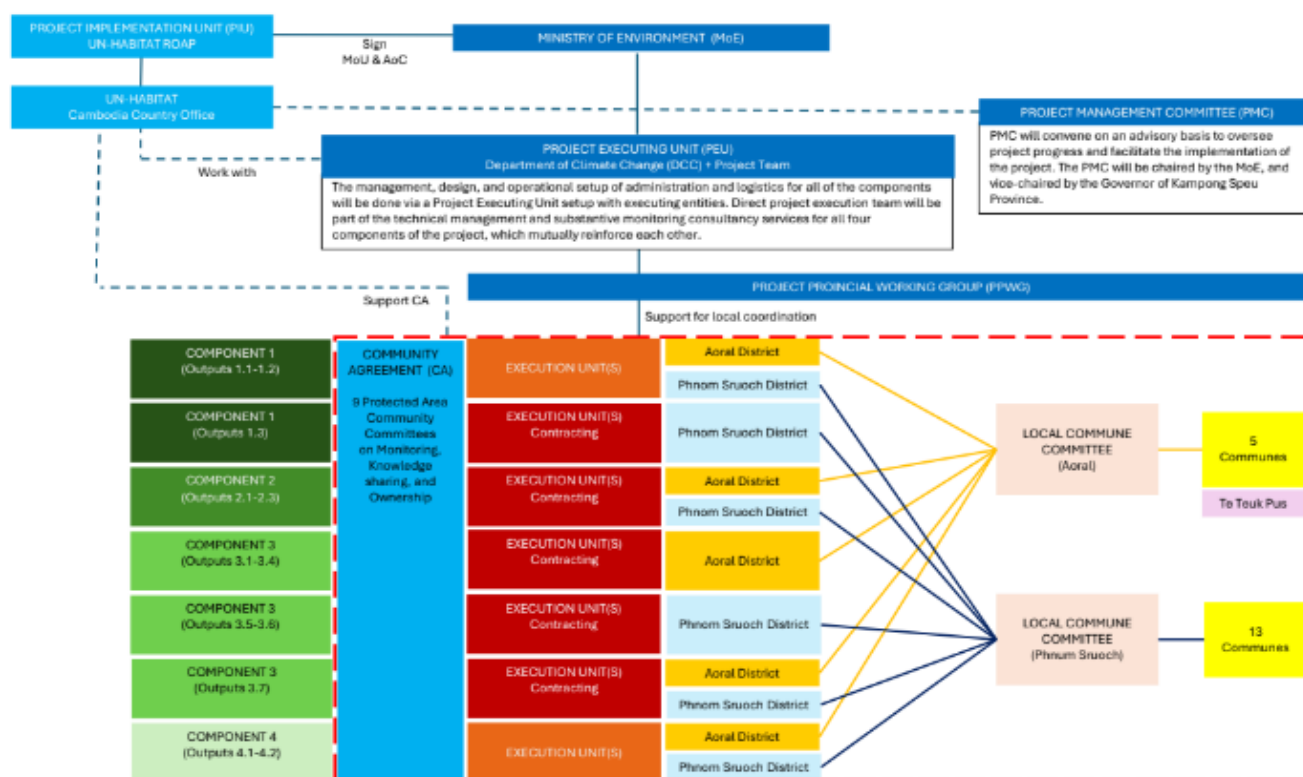
258. Within three months of formal project approval by the Adaptation Fund and internal clearance through UN-Habitat systems, UN-Habitat will convene a comprehensive Project Inception Workshop. This workshop will mobilise key institutional partners, academic institutions, civil society organisations, donors, and local community representatives. The objective is to present the project concept, strategy, and proposed outputs in a highly participatory manner, capturing broad-based stakeholder feedback to optimise and refine the final implementation work plan.

- assist all participants in fully understanding the project objectives and activities, and take ownership of the project
- discuss the organisational structure and implementation arrangement of the project
- discuss the roles and responsibilities of all agencies involved in the project, including decision-making, reporting, and lines of communication

- discuss grievance redress mechanisms and conflict resolution mechanisms
- review and agree on the indicators, targets, and their means of verification, and recheck assumptions and risks.
- prepare a framework for the annual work plan for year one.
- discuss project monitoring, evaluation, and reporting requirements
- discuss financial procedures.

260. A comprehensive Project Inception Workshop Report will be formally presented to the Project Management Committee (PMC) and submitted to the Adaptation Fund secretariat no later than one (1) month after the inception workshop has taken place.

261. The project organogram, which reflects the governance and management arrangements described above, is presented below in Figure III.1.



69

Table 23 Overview of financial and management risks and measures to mitigate these

#	Category and risk	Rating of likelihood and impact (1: Low - 5: High)	Management/ Mitigation Measure
1	Environmental/Social: There is a risk that current climate and seasonal variability or hazard events result in infrastructure construction delays or undermine local communities' confidence in adaptation measures.	Likelihood: 2 Impact: 3	The mitigation measure will be careful planning and design of Component 3 activities accounting for current climate variability — the detailed project sheets in Annex B specify that physical works must occur during the dry season — and the fact that all Component 3 investments have already been thoroughly consulted with communities, local authorities, and national/sub-national government stakeholders.
2	Institutional/Social: There is a risk that public health contingencies or disease outbreaks restrict field mobility, compounded by national and sub-national authorities being unable to dedicate sufficient time to project execution due to competing ministerial mandates.	Likelihood: 1 Impact: 3	The mitigation measure will be a flexible project-team approach that adapts implementation methods to prevailing circumstances, in close collaboration with the PMC and PEU, using UN-Habitat's established Community Contracting methodology (Component 3) and NGO partnerships (Component 2) to mobilise unskilled and semi-skilled labour from target communities.
3	Institutional: There is a risk that loss of government support at any level results in a lack of prioritisation of AF project activities and outputs.	Likelihood: 2 Impact: 2	The mitigation measure will be the Project Management Committee and an inclusive, participatory project design that promotes ownership at national, local and beneficiary levels; UN-Habitat will also enter into legally binding agreements (MoUs and AoCs) with MoE, and the project structure incorporates government personnel working on land use, disaster management, climate change and environment.
4	Institutional: There is a risk that capacity constraints of local institutions limit the effective implementation of interventions.	Likelihood: 4 Impact: 3	The mitigation measure will be the capacity-building and training component under Component 1, designed to strengthen effectiveness and sustainability at the community, district, and provincial government levels.
5	Institutional/Social: There is a risk that a lack of commitment or buy-in from local communities delays implementation at intervention sites.	Likelihood: 1 Impact: 2	The mitigation measure will be the extensive community consultations already conducted during project development (Table 16), a bottom-up approach integrating communities into implementation through community contracting, and the UN-Habitat People's Process to ensure ownership through participation in implementation and monitoring.
6	Institutional/Social: There is a risk of disagreement among stakeholders regarding adaptation measures (infrastructure) and site selection.	Likelihood: 2 Impact: 3	The mitigation measure will be the multiple rounds of in-depth consultations and site assessments already used to select adaptation measures and locations against precise criteria, and continued use of the People's Process (Annex E) to build Component 3 infrastructure participatorily.
7	Institutional: There is a risk that communities do not adopt or sustain project activities during or after implementation, including infrastructure maintenance.	Likelihood: 1 Impact: 3	The mitigation measure will be formal agreements institutionalising maintenance and O&M responsibilities within ministries, local government and communities; sub-national officials providing governance and maintenance support beyond the project lifecycle; capacity-building training (Output 1.1); and community — particularly women's and indigenous people's — involvement in decision-making, construction and O&M, including in-kind contributions to low-tech construction and maintenance tasks.
8	Institutional: There is a risk that a lack of institutional ownership and inadequate O&M budget allocations undermine the sustainability of project-funded infrastructure.	Likelihood: 3 Impact: 3	The mitigation measure will be capacity-building training on climate-informed investment planning (Output 1.2), strengthening the ability of CPA committees and sub-national stakeholders to reinforce local plans and secure O&M budget allocations beyond the project's lifetime.
9	Financial: There is a risk that the complexity of financial management and procurement, together with inflation and instability of the national currency, delays project execution, compromises financial integrity, or increases infrastructure delivery costs.	Likelihood: 2 Impact: 2	The mitigation measure will be UN-Habitat's established financial management and control mechanisms under UN Secretariat financial regulations, with MoE handling procurement under the Agreement of Cooperation and the Project Manager/Project Executing Team certifying purchases; all transactions in US dollars to eliminate exchange-rate risk; and subcontractor contracts prohibiting cost escalation after signing.
10	Institutional: There is a risk of delays in project implementation, particularly in the development of infrastructure interventions.	Likelihood: 2 Impact: 2	The mitigation measure will be the high level of sub-national government ownership already demonstrated through consultations and joint site inspections; early initiation of Component 1 planning and Component 3 infrastructure work through close partnership with government agencies; incorporation of lessons learned from MoE and other projects (Part II.F); and Project Management Committee meetings at least twice a year to assess progress and coordinate with line ministries.
11	Institutional: There is a risk of a lack of coordination between and within national government partners.	Likelihood: 1 Impact: 2	The mitigation measure will be the Project Management Committee, established to facilitate coordination among and within national and sub-national government partners, with UN-Habitat addressing any coordination issues directly with the PMC or other relevant parties.
12	Institutional: There is a risk that weak institutional linkages and limited coordination between project-supported communities and private-sector tour operators prevent successful integration of new resilient infrastructure and landscapes into established eco-tourism value chains.	Likelihood: 3 Impact: 2	The mitigation measure will be consultation with tour guides and the tourism industry as part of the Output 2.1 market assessment, and participation of the Provincial Department of Tourism in the Project Sub-Working Group to facilitate communication between the tourism industry, district authorities, protected area community committees, and the Indigenous Suoy community.

B. Describe the measures for financial and project/programme risk management

262. Under the guidance of the UN-Habitat Regional Office for Asia and the Pacific (ROAP) and the Cambodia Country Office, the Project Manager will monitor overall financial and operational risks, ensuring the application of necessary avoidance and mitigation measures throughout the project lifecycle. Table 23 below gives an overview of project management and financial risks, and an assessment of the significance of the pertaining risks in terms of likelihood and impact. It outlines measures embedded in the project design to manage and/or mitigate these risks.

263. These foundational risk assessments will be reviewed and reconfirmed by stakeholders during the project inception phase. In the event that adaptive management requires activity modifications or the introduction of supplementary interventions, the project will trigger a formal Safeguard Screening Procedure. If and when activity modifications or additional activities are required, a 'screening safeguarding procedure' will be used, including consultation with beneficiaries and vulnerable groups, including Indigenous Suoy populations.

264. The Project Manager holds direct operational accountability and final compliance enforcement authority over the Environmental and Social Management Plan (ESMP) [Table 43; Annex C]. Any formal modifications to project activities resulting from safeguard screenings must be officially reviewed and approved by the Project Management Committee (PMC). To ensure comprehensive technical alignment, relevant line ministries and technical departments will be formally requested to provide input and data to support risk assessments as required.

C. Describe the measures for environmental and social risk management, in line with the environmental and social policy and gender policy of the Adaptation Fund

265. The proposed project is designed to achieve full alignment with the Adaptation Fund's Environmental and Social Policy (ESP). In strict compliance with this framework, potential environmental and social risks must be identified, and mitigation measures should be incorporated across all proposed activities to uphold the core "do-no-harm" imperative—safeguarding ecosystems, public health, and vulnerable communities from inadvertent adverse impacts. As detailed in Part II, Sections E and K, a systematic risk screening and vulnerability assessment framework was deployed. This rigorous diagnostic process was anchored in participatory consultations with national line ministries, sub-national administrative authorities, and target communities. The project design has benefited from this process.

266. During the full proposal phase, the project formulation team carefully checked all project activities against the 15 environmental and social principles of the Adaptation Fund to ensure they do not cause any harm. The project's gender action plan (GAP) summarises a specific plan to support women, in line with the Fund's Gender Policy. The money needed to run these safety checks is already included in our regular project budget. None of the construction work will force residents to leave their homes or relocate. Finally, we will strengthen the existing local grievance redress mechanisms so that local people can easily report any risks or problems that come up.

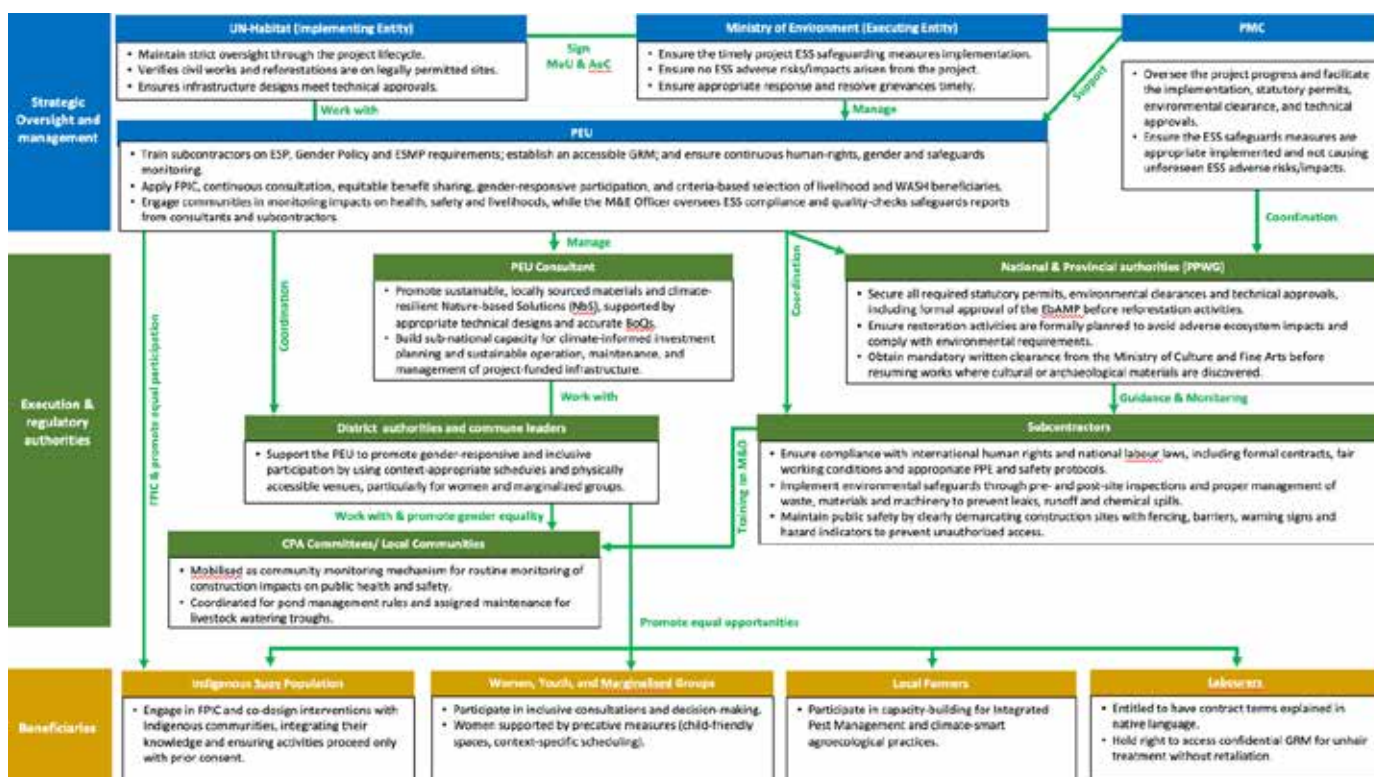


Figure III.2 Roles and responsibilities of stakeholders to implement ESMP

267. To ensure that any remaining risks are avoided or mitigated well, the project management, governance rules (Part III. Section A), and monitoring plans (Part III. Section D) completely take the management of environmental and social

risks into account. Based on our environmental and social impact assessment (ESIA), ESMP was prepared to make sure the project fully follows the Adaptation Fund's environmental, social, and gender policies (ESP and GP). Detailed descriptions of ESP and GP alignments can be found in Annex C and Annex D. The ESMP, shown in Table 43, lists the identified risks and the steps we will take to avoid or mitigate any adverse impacts to a safe level. If needed, the plan also includes ways to make up for any problems caused.

268. The nine ESS Consultants budgeted in Table 30 (Outputs 1.3, 2.3, and 3.1 through 3.7 are site-embedded, one per physical-works output, because the works span two districts and geographically dispersed sites (Te Teuk Pus, Chambak, Aoral, Phnum Sruoch), consistent with the field-level technical specialist deployment described in Part III.A. Reporting lines run from each output-embedded ESS Consultant to the PEU, which holds direct operational accountability and final compliance enforcement authority over the ESMP (Part III.B); the PEU escalates to the Project Management Committee, which holds statutory authority to mandate corrective actions; and the Local Commune Committees serve as the first-line detection channel for environmental and social risks at the community level, feeding into the Grievance Redress Mechanism below.

269. Specifically, the ESMP (Table 43) focuses on these main areas:

- Summarises all anticipated adverse environmental and social risks and impacts in line with the Adaptation Fund's ESP principles;
- Describes safeguard measures, both from the perspective of mitigating risks at each activity and from the perspective of upholding all ESP principles;
- Describes a process that supports the screening and assessment of all project activities and the conditions under which screening and mitigation action are required;
- Clearly assigns responsibilities for screening, assessment, mitigation actions, approval, and monitoring;
- Takes into account and is consistent with other technical standards required for the project, particularly those related to national law.

270. Please note that every activity and project under Component 3 is designed to bring real benefits to the environment and the community, in line with the Adaptation Fund's safety rules (ESP) and Gender Policy (GP). A summary of these benefits, and details on how we included these safety rules into the design of each project, can be found in the individual investment sheets in Annex B.

271. All project activities upheld the ESP to ensure protection of the environment and societies in the target areas. The project will make sure that:

- All partnership contracts (MoUs and AoCs) with our project partners will clearly include the detailed description of ESMP, the Adaptation Fund's 15 ESP principles, and GAP.
- The official duties (ToRs) for all committees, advisors, project staff, and consultants will clearly list their responsibilities to be aware of as well as comply with the project's ESMP, the Adaptation Fund's 15 ESP principles and GAP.
- The executing entity and relevant government stakeholders will attend the training on the AF's 15 ESP principles, the project's ESMP, GAP, and their responsibilities.
- PEU will build a monitoring and evaluation framework and present it to the Project Management Committee (PMC) for approval in the project inception stage.
- PEU will regularly monitor all activities against the 15 ESP principles to ensure the effectiveness of the project's safeguard measures. This keeps everyone involved accountable, builds local ownership, and helps UN-Habitat, MoE, and PMU catch any problems if project activities change or unassessed activity sites.
- An inclusive grievance redress mechanism (GRM) will be established that allows anyone affected by the project to safely and anonymously share their concerns with community leaders, local committees, the project team, or the PMC.

272. The project will strengthen the existing local GRM. For example, a confidential telephone number is the primary means for affected beneficiaries and/or community members to raise grievances.¹³² In addition to the GRM, local staff will be trained to have an 'open-door' policy with communities so that communities can discuss any aspect of the project at any time. This less formal mechanism will also enable project staff to listen to communities' concerns or ideas and promote them in implementing the project. More formal consultations and workshops held at local and national levels throughout the project implementation will also serve as a means for stakeholders to raise concerns or suggestions with the project's implementation.

D. Describe the monitoring and evaluation arrangements and provide a Budgeted M&E Plan, in compliance with the ESP and the Gender Policy of the Adaptation Fund

273. The Budgeted M&E Plan explicitly tracks ESMP mitigation-measure implementation status: the participatory community monitoring activity (Table 25, item 1 — USD 750,000, delivered through the Community Agreements with the 9 CPAs) monitors the environmental and social risks and mitigation measures identified in Table 19 and Table 42 (Annex C), alongside physical progress indicators, with any deviations escalated to the PEU and, where required, the Indigenous Peoples and Gender Focal Points for corrective action. As the project team and PPWG members are not permanently based at the project sites, 9 CPA members will be designated as community-based monitors to identify

¹³² Note that an address was considered. However, Cambodia does not have a reliably functional postal service and literacy rates are far from 100% across the beneficiary communities. Given that telephone penetration is significantly higher, and a far more frequently used and reliable means of communication, it was decided that this is the best confidential and private means to address grievances.

and monitor localised ESS risks and adverse impacts within their respective communities. Prior to the commencement of construction activities, the CPA monitors will receive appropriate capacity building on the project's ESS safeguarding measures, monitoring procedures, and reporting mechanisms. Any identified concerns, risks, or adverse impacts will be promptly reported to the PEU for timely assessment and appropriate corrective action.

274. The Monitoring and Evaluation (M&E) of the project's progress will be tracked by checking the targets and indicators summarised in the Project Results Framework (Table 26). Constant monitoring of environmental and social risks and safeguard measures, as well as financial and operational risks, will be monitored and evaluated periodically, ensuring the smooth project implementation. To complete this work correctly, all activities will follow the official rules, guides, and tools created by the Adaptation Fund, UN-Habitat, and the Royal Government of Cambodia.

Project Result Framework

275. Table 26 defines the detailed targets, baseline, indicators, means of verification, frequency, risks, measures, and responsibilities for each outcome and output. Besides that, ESMP (Table 43; Annex C) summarises the identified environmental and social risks as well as safeguard measures, and it will be monitored throughout the project (at the activity level and through annual project performance, mid-term and terminal evaluation reports). The same applies to financial and project management risks and mitigation measures.

276. UN-Habitat will ensure the timeliness and quality of project implementation. The PMC will provide oversight and general guidance for the project. UN-Habitat will ensure that the project team and the critical national executing partners are fully briefed on the M&E and ESMP requirements. Please see the detailed budget for M&E (Table 25) and a breakdown of how implementing entity fees will be utilised in supervising the M&E function (Part III Section G).

M&E Activities

277. Participatory monitoring mechanisms (involving different levels of government and communes) will be put in place to collect and record data to support the M&E of indicators. The project formulation has gathered demographic data (some in the public domain) and generated maps through Google Maps and Google Earth, which will be handed over to the Project Management Committee for use in the project, including monitoring. The M&E activities will be implemented as proposed in the table below. UN-Habitat will ensure the timeliness and quality of project implementation. The PMC will provide oversight and general guidance for the project.

278. The Project Manager will develop the detailed M&E Plan based on Table 25, which will be disseminated to all stakeholders during the inception workshop. The emphasis of the M&E plan will be on (participatory) outcome/result monitoring, project risks (financial and project management risks and environmental and social safeguard risks), and learning and sustainability of the project. Periodic monitoring will be conducted through visits to the intervention sites.

279. During the project implementation stage, Annual ESP screening and risk assessment will be carried out by the project team (external consultant), for which a template will be prepared based on the recent Adaptation Fund projects in Cambodia. The Annual Project Performance Review will also include environmental and social risks (i.e., the status of periodic safeguard measures implementation, residual impacts, and remedial actions to avoid, minimise, or mitigate environmental and social risks). The reports will also include grievances and resolutions, if any.

280. UN-Habitat will ensure that all executing partners are fully briefed on the M&E requirements to ensure that baseline and progress data are fully collected and that a connection between the Knowledge Management component and M&E is established. The Agreement of Cooperation will also reflect these.

281. It should be noted that UN-Habitat will sign Community Agreements (CA) with nine CPA Committees on participatory monitoring activities under Components 2 and 3, while promoting knowledge-sharing among them and strengthening the local cooperation mechanisms beyond the project duration.

Table 24 M&E Budget

Type of M&E Activity	Total	Year 1	Year 2	Year 3	Year 4
Participatory community monitoring to support core M&E frameworks while building local capacity and stewardship.					
Monitoring Progress of Outputs through Community Agreement with 9 CPAs	750,000	125,000	274,000	199,000	152,000
Core M&E activities by IE and EE					
ESS monitoring	90,000	10,000	31,500	26,500	22,000
Baseline data report & Mid-term & Final Evaluation (inc HQ) (corrected per CR36 — reconciled with Table 23's USD 15,000 + 10,000+ USD 40,000 = USD 65,000)	65,000	15,000	10,000	0	40,000
Project management committee meetings, Working Group Meetings, Community Consultations	37,100	9,000	15,000	4,000	9,100
Sub-total (Core M&E activities)	192,000	34,000	56,500	30,500	71,100
Total (Total corrected +USD 29,000 to reconcile with Table 23; Finance to re-verify against	942,100	159,000	330,500	229,500	223,100

Table 26/27 allocation before final submission)					
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282. In addition to the above, a budget (\$90,739) is allocated for UN-Habitat Regional Office to supervise project implementation, monitoring of implementation, AF and UN-Habitat policies compliance, and IE staff supervision and reporting. UN-Habitat Headquarters will provide overall project supervision, including compliance with UN-Habitat policies and standards (gender, human rights, climate change, etc.), for which 7% of the total project cost is allocated. UN-Habitat Evaluation Unit will provide support for evaluation during and after the project implementation (\$40,000).

Table 25 Monitoring and Evaluation (M&E) Plan

Type of M&E Activities	Responsible Parties	Time Frame	Reporting	Budget	Clarification Notes	Key milestones
Participatory community monitoring to support core M&E frameworks while building local capacity and stewardship.						
1. Participatory monitoring through Community Agreement with 9 CPAs [Table 30: 1.3e, 2.3h, 3.1j, 3.2h, 3.3e, 3.4f, 3.5h, 3.6h, and 3.7g]	Project Management Committee UN-Habitat	Annually	Field report	TOTAL: 750,000	\$750,000 has been budgeted for participatory monitoring and maintenance of the project-funded interventions under Components 2 and 3, through signing the Community Agreements with 9 CPAs. It should be noted that this participatory monitoring activities aims to build local capacities and stewardship through monitoring activities as well as knowledge-sharing among CPA committees to strengthen collaborative relationships.	Member list of 9 CPAs Field reports
Core M&E activities by IE and EE						
2. Baseline Data Report and Mid-Term and Final Evaluation [Table 30: 5d(6), 8]	National Project Manager UN-Habitat ROAP Project Management Committee External Consultants	Final: At least three months before the end of project implementation Report: before the end of the project	Final Evaluation Report	15,000 +10,000 + 40,000 TOTAL: 65,000	\$15,000 has been budgeted for baseline data report, \$10,000 for the mid-term evaluation, and final evaluation with support from UN-Habitat HQ, for which an additional \$40,000 is budgeted.	Baseline data collection/ report MTE report Final evaluation report
3. Periodic status/ progress reports [Table 30: 4.2c]	National Project Manager	Quarterly	Quarterly Report	36,000	Community Consultations, Project Board Meetings, and Project Team Meetings: The Project Board meetings and Project Team Meetings will be scheduled every six months and three months. \$9,000 per year is allocated for expenses related to these meetings.	Project Board/Team meetings Meeting report
4. Project supervision missions for monitoring of implementation, AF and UN-Habitat policies compliance, and IE staff supervision and reporting [Table 30: 6 and 7]	UN-Habitat ROAP	Periodic	Mission Report	102,493	Project support by the UN-Habitat Regional Office is budgeted at \$88,078 for guidance and assistance to the finalisation of a variety of reports, including periodic reports, annual reports, and project terminal reports. Project supervision mission from the UN-Habitat Regional Office is budgeted at \$ 14,415 for	Finalised project reports Project supervision mission Mission reports

					a bi-annual project supervision mission for monitoring of implementation, AF and UN-Habitat policies compliance, and IE staff supervision and reporting.	
5. Inception Workshop and Report [Table 30: 4.1a]	National Project Manager Project Management Committee UN-Habitat ROAP	Workshop: within first three months of start Report: within first quarter	Inception Report	20,000	Inception workshop: A lump sum of \$20,000 is budgeted for the inception workshop that will invite all involved stakeholders to the target province. This cost includes the Inception Report preparation and translation.	Inception workshop Inception report
6. Annual progress report	National Project Manager Project Management Committee UN-Habitat ROAP	Report: within first quarter of next quarter	Annual progress report	Operational budget	Annual Progress Report: preparation and translation, USD 8,000/year (four years, USD 32,000 total), consistent with the per-report cost implied by the USD 20,000 Inception Report figure (item 5). [Inserted in response to AF Secretariat CR42.]	4 Annual progress reports
7. Project Terminal Report	National Project Manager UN-Habitat ROAP Local consultant	At least three months before the end of the project	Terminal Report	Operational budget	Project Terminal Report: preparation, sUSD 15,000, comparable scope to the Inception Report but covering the full project record. [Inserted in response to AF Secretariat CR42.]	Terminal Report
8. Audit [Table 30: 5d(5)]	UN-Habitat ROAP National Project Manager	As per UN-Habitat regulations	Audit Reports	13,090	Final Audit will be conducted for which \$13,090 is allocated	Audit report

a. Project Management Committee (PMC)

283. The Project Management Committee will meet twice annually, and ad-hoc meetings will be held as needed. The meeting will review the delivery of inputs and outputs, project progress and provide guidance and coordination. The first PMC meeting will be held within the first six months of the start of the project.

b. Periodic Project Site Visits

284. Members of the PMC and representatives of UN-Habitat will visit project sites and hold meetings with the local stakeholders to review the implementation of project activities. It will be a good opportunity to assess environmental and social risks and impacts, as well as to learn from direct and indirect beneficiaries about their concerns or recommendations related to the project interventions.

c. Community Level Participatory Monitoring

285. The communes will be involved in further data collection and community consultations in data analysis. This will allow beneficiary communes to work directly with the project's M&E mechanism, highlight project delivery issues, and strengthen adaptation benefits, including replication and sustaining the project's gains. Data collected will consist of marginalised groups (i.e., women and indigenous people) aggregated (if possible). Project site visits for monitoring purposes will be jointly conducted based on an agreed schedule to assess project progress firsthand.

A Community Agreement (CA) on participatory monitoring activities under Components 2 and 3 will be signed by UN-Habitat with nine CPA Committees, encouraging information exchange and strengthening local cooperation mechanisms after the project's completion.

d. Mid-term Review and Final Evaluations

286. A mid-term and final evaluation will be conducted at the midpoint and three months before the end of the project, respectively, following UN-Habitat guidelines. An independent team of international and/or national experts will lead the evaluations based on the nine evaluation criteria established by the Adaptation Fund's Evaluation Framework. The scheduling of the evaluations and the terms of reference will be discussed at the Project Management Committee. The Terms of Reference will be prepared by UN-Habitat, focusing on the delivery of project activities as initially planned (or modified after the mid-term evaluation) and will also look at the impact and sustainability of the results. The

evaluation will provide recommendations for follow-up activities, including adjustment of the project approaches to minimise environmental and social risks, and necessary environmental and social mitigation measures. The evaluation process will include community feedback from women and men from diverse groups.

e. Financial Audits

287. A professional, certified organisation will review the financial management of the project and adherence to required standards and regulations.

f. Monitoring the potential intervention risks and mitigation measures

288. For risk identification – PART II Section E (Table 15 Compliance with national technical standards) shows which of the risk areas (i.e., principles) have been triggered per project output/activity and per concrete intervention. This is based on a risk screening and impacts assessment (see Annex C), which is based on community inputs and field visits. For the non-concrete activities, information is provided about how to minimise risks monitoring/reporting on these will be done annually.

289. The Environment and Social Management Plan (ESMP) in Annex C includes monitoring indicators and frequency, and monitoring responsibilities for monitoring identified potential risks and safeguard measures for the proposed project activities.

Risks monitoring arrangements:

- This monitoring program is commensurate with actions identified below and will report on the results to the Fund in annual, mid-term, and terminal performance reports. Monitoring will be done to ensure that planned actions are taken in a timely manner and to determine if actions are appropriately avoiding or mitigating the risk/impact, or if they need to be modified in order to achieve the intended outcome.
- As described above, annual reporting will include information about the implementation status of safeguard measures, residual impacts, and remedial actions to ensure ESP compliance. The reports also include a description of any corrective actions that are deemed necessary.
- Direct monitoring responsibilities will be under the project manager. The project manager will have oversight/ final compliance responsibility. When changes or additional activities are required, monitoring indicators will be changed or added as well, and the PMC approval will be required.
- CPA Committees will support the participatory monitoring of interventions under Components 2 and 3 through Community Agreement.
- Gender-specific indicators and targets have been developed as shown in the results framework and summarised in Annex D
- There are no specific budget requirements for risk monitoring other than those shown in PART III Section D and the budget.

290. The focal person in UN-Habitat ROAP will review the project reports and guide on the implementation design, environmental and social risks and adverse impacts, capacity building on the environmental and social safeguards, and necessary mitigation measures based on the experiences from other country offices.

Reporting

a. Inception Workshop and Report

291. A Project Inception Workshop will be held within the first three months of the start of the project to formally launch the project and make sure all partners and the public understand the project overview, including their roles and responsibilities. One of the workshop's outputs will be to review and agree on the annual work plan for year one. Within one month from the inception workshop, the start date of the project, an Inception Report will be submitted to the Project Management Committee and the donor. The inception report will include the following:

- Project background, objective, outcomes and outputs
- Objectives, key summaries, and results of the inception workshop
- Changes in the project document since the donor's approval
- Project management arrangements, including work planning, budgeting, M&E Framework, and reporting.

b. Quarterly Reports

292. The Project Manager under the Executing Entity will be responsible for preparing the Quarterly Reports to be submitted to UN-Habitat (Implementing Entity) and the PMC. The Project Manager will prepare the reports based on chronologically summarised information from the field staff and monthly monitoring reports from the field activities, including photos, maps, and documentation. A qualitative periodic status/ progress report will be prepared once a quarter. The report will be submitted by the end of the first month of the next quarter.

c. Project Performance Review (PPR)

293. Based on the Quarterly Reports, Project Performance Review (PPR) will be annually prepared to report the progress made since the project's start and, in particular, the specific reporting period. The PPR will be submitted

within two months after the end of the reporting year. The final PPR, which will be regarded as the project completion report, must be provided six (6) months following project completion.

The PPR includes, but is not limited to, reporting on the following:

- 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)
- Expenditure of the reporting period and planned expenditure of the next period (annual)
- Project financial and management risks and steps taken to mitigate them
- Environmental and social risks (i.e., identified risks and safeguard measures, monitoring indicators, baseline condition, the safeguard measures implementation during the reporting period, residual impacts, and remedial actions to avoid, minimise, or mitigate environmental and social risks (annual)
- Gender policy compliance (i.e., gender-responsive elements, indicators, baseline, target, and rated result for the reporting period, and implementation arrangements) (annual)
- Lessons learned/good practice on implementation and adaptive management
- Information about collected grievances and resolutions (if any).

d. Site Visit and Community Level Meeting /Workshop / Training Reports

294. The Project Team will prepare photo-documented reports on all community-level meetings, workshops, and training within one week of the event.

e. Mid-term and Final Evaluation Reports

295. Based on project reports, field visits, and discussions with relevant stakeholders and beneficiaries, the independent consultants will draft the mid-term and final evaluation reports that summarise the findings examining the project's design framework, context, and causality in relation to finished results. The report will elaborate on the impact and sustainability of the results and give specific explanations for differences between the intended and actual results based on the nine evaluation criteria set by the Adaptation Fund's Evaluation Framework. Along with local, logical, and useful conclusions and suggestions based on reliable analysis, these reports will also provide the results and conclusions.

f. Terminal Report and Completion Summary

296. As described earlier, the final PPR, which will be regarded as the project completion report, will be prepared within six months following project completion. UN-Habitat will also submit a project completion summary to summarize an entire project life in a reader-friendly format by compiling the submitted final PPR, resulting in sharing project lessons learned, good practices and recommendations.

E. Project Results Framework

Table 26 Project results framework with indicators, their baseline, targets, risks & assumptions and verification means.

Expected Result	Indicators	Baseline	Targets (direct)	Interim Targets	Means of Verification	Frequency	Risks and Mitigation measures	Responsibility
Project Objective: By 2030, Aoral and Phnum Sruoch districts in Cambodia achieve improved access to climate-resilient water, sanitation, and nature-based protective small-scale infrastructure, and local officials/CPA members demonstrate increased capacities in risk-informed planning and budgeting.	# of direct beneficiaries that are less vulnerable to climate variability/ change (AF Core Indicator)	0	32,360 (Women: 12,866)	16,000 (Women: 6,400)	- Inception Report - Sex disaggregated attendance sheet - Periodic progress reports - Project annual reports (PPRs) - Mid-term and terminal Evaluation reports	Annual basis	Key risks: - Emergencies of global concern, such as the COVID-19 pandemic. - Loss of government support (at national and sub-national levels) for the project activities may result in a lack of prioritisation of the project activities and their support. Mitigation measures: - The project team will develop alternative ways to reach the objective of the project and deliver the output depending on the situation. - Establishment of a PMC to incorporate guidance and cooperation of line ministries.	- Project manager - PEU - PMC - UN-Habitat
	# of people living in partner cities and human settlements that are less vulnerable to climate change impacts (UN-Habitat DOC3 Domain level indicator)							
	% of women who are less vulnerable to climate change-related issues	0	50%	50%				
Component 1: Build capacity at the community and sub-national levels to strengthen inclusive climate governance and Protected Area Management								
Outcome 1: Local and sub-national institutions demonstrate improved capacity to plan, budget for, and implement inclusive, risk-informed adaptation actions in protected and climate-vulnerable landscapes.	# of institutions (communes and protected area communities) within the targeted areas strengthened capacity to understand and better address climate risks and resilience, and actively enforcing updated Commune/Sangkat Investment Plans (CIPs) and Protected Area Plans. (Respond to AFB indicator 2)	0	27	14	- Updated CIPs/ Protected Area Plans - Field mission reports - Periodic progress reports	Quarterly basis	Key risks: - Loss of sub-national authorities and CPA members' willingness to strengthen local plans, mainstreaming climate change considerations.	- Project manager - PEU

	# of people with strengthened awareness of climate change risks and how to better address them through climate-resilient infrastructure maintenance, eco-tourism management, and ecosystem assets monitoring (Respond to AFB Indicator 3.1)	0	300	300			- Community investment plans integrating climate change adaptation planning and implementations will not be implemented at the sub-national level.	
	# of local plans adopted, implemented, and/or enforced that integrate climate risk and resilience considerations. (Respond to AFB Indicator 7)	0	27	14			- Capacity constraints of local institutions and communities to implement the agreed actions.	
	% of women who participated in capacity-building trainings.	0	40%	40%			- Unequal beneficiary selection	
Output 1.1. Community capacity-building programme implemented in target districts to maintain climate-resilient infrastructure, manage eco-tourism, and monitor ecosystem assets, with at least 40% participation (of 300 total participants) women, youth, and indigenous groups participating <i>(to support sustainable implementation of interventions under Components 2 and 3)</i>	# of trainees participating in the capacity-building programme implemented in target districts.	0	300	300	- Training reports - Sex disaggregated attendance sheet - Periodic reports	Quarterly basis	Mitigation measures: - Establishment of a PMC at the national level and the overall participatory and inclusive project design will improve national, sub-national beneficiary level ownership throughout and thus enhance government support for project implementation. - Select beneficiaries, including trainees, based on specific criteria and accountable procedures.	- Project manager - PEU
	% of women participating in capacity-building training on climate-resilient infrastructure management, operation, and maintenance.	0%	40%	40%				
	# of indigenous Suoy populations participating in the capacity-building programme implemented.	0	100	100				
Output 1.2 18 Commune councils and nine Community Protected Areas (CPA) committees trained in climate-informed investment planning, integrating adaptation budgeting, local risk mapping, and disaster response protocols into Commune/Sangkat Investment Plans (CIPs) and Protected Area Plans.	# of institutions (commune councils and CPA committees) supported to strengthen capacity to understand and address climate risks and resilience through in climate-informed investment Planning (Respond to AFB Indicator 2.1.1).	0	27	27	- Updated CIPs/ Protected Area Plans - Periodic progress reports - Sex disaggregated attendance sheet	Quarterly basis		- Project manager - PEU - UN-Habitat
	# of local institutions and/or communities responsible for decision-making over how adaptation solutions are defined, prioritized, designed, and/or implemented (Respond to AFB indicator 3.3.1)	0	27	27				
	# of local plans developed or adjusted to integrate climate risk considerations (Respond to AFB indicator 7.1.1)	0	27	10				

	# of local plans formulated through the participation of one or more vulnerable groups (Respond to AFB indicator 7.1.2)	0	27	10				
	Shifts in gender norms	No shift	Shifted gender norms to increase more female participation					
	% of women participating in capacity-building training and climate-informed investment plans improvement.	0	30%	30%				
	# of climate-informed investment plans improved.	0	27	27				
Output 1.3 Vocational training centre established (in Te Teuk Pus) and operated to train 400 beneficiaries (at least 200 women), emphasising youth and marginalised groups, annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques	# of vocational training centres established.	0	1	1	- Training reports - Sex disaggregated attendance sheet - Field reports - Periodic progress reports	Quarterly basis		- Project manager - PEU
	Women's reported sense of safety	Limited sense of safety	Improved sense of safety to participate in the training					
	# of people participating in activities at the vocational training centre to improve awareness of climate risks and how to address them (Respond to AFB indicator 3.1.1)	0	400	200				
	% of female trainees at the vocational training centre	0	50%	50%				
	% of Indigenous attendants	0	50%	50%				
Component 2: Promoting Climate-Resilient Livelihoods through Climate-Smart Agriculture and Eco-Economy Solutions								
Outcome 2: Vulnerable households, including women, youth, and indigenous groups, adopt diversified and climate-resilient livelihood strategies linked to sustainable agriculture, forest products, and green tourism value chains.	# of people using improved climate-related threat and hazard information from market and climate-vulnerability assessment (Respond to AFB Indicator 1)	0	100	100	- Survey reports - Periodic reports	Annual basis	Key risks: - Beneficiaries do not practice new climate-smart livelihood options. - CPA committees are not willing to share their experiences with other CPA committees. - Exclusive arrangement of demonstration plots and value-chain pilots.	- Project manager - PEU - PMC - Subcontract or (NGO) - UN-Habitat
	# of people adopting improved and/or new climate-resilient livelihood practices (Respond to AFB Indicator 6.1)	0	100	100				
	# of households with increased income, or avoided decrease in income (Respond to AFB Indicator 6.2)	0	60	0				
	% of targeted female beneficiaries reporting more secure, year-round access to markets.	0%	60%	0%				

Output 2.1 Market and climate vulnerability assessments conducted in three locations to identify inclusive and gender-responsive value chains in drought-resilient crops, agroforestry, and non-timber forest products, incorporating indigenous knowledge.	# of market and climate vulnerability assessments conducted or updated (Respond to AFB Indicator 1.1.1)	0	3	3	- Assessment reports - Sex disaggregated attendance sheet - Periodic reports	Quarterly basis	Mitigation measures: - Promote key farmers at demonstration plots as future trainers to guide other local farmers. - Strengthening relationship and knowledge-sharing mechanisms among CPA committees. - Ensure inclusive assessment and decision-making to identify climate-smart livelihood options.	- Project Manager - PEU		
	% of women participating in the market and climate vulnerability assessments	0	30%	30%						
	% of indigenous people participating in the market and climate vulnerability assessments	0	30%	30%						
Output 2.2 At least 100 households (min. 40% women) trained in climate-smart agriculture, including agroecological practices such as organic composting, intercropping, and water-saving irrigation.	# of people receiving targeted support for new and/or improved livelihoods to manage climate risks (Respond to AFB Indicator 6.1.1)	0	100	100	- Training reports - Sex disaggregated attendance sheet - Periodic reports	- Quarterly basis			- Project manager - PEU - Subcontract or (NGO)	
	% of women who participated in the awareness-raising sessions.	0	40%	40%						
Output 2.3 Demonstration plots and value-chain pilots (at least 3 per district) established and managed jointly by youth and elder farmers to promote intergenerational learning in climate-resilient livelihoods	# of demonstration plots and value-chain pilots established and managed.	0	9	4	- Sex-disaggregated list of farmers at the demonstration plots - Survey reports - Periodic progress reports	Quarterly basis				- Project manager - PEU - Subcontract or (NGO)
	% of target farmers' income increased through demonstrations at nine plots.	0	80%	80%						
	% of women and youth managing demonstration plots/value-chain pilots	0	40%	40%						
Component 3: Restoring Ecosystems and Building Climate-Resilient Infrastructure in Protected and Eco-Tourism Landscapes										
Outcome 3: Ecosystems and critical rural infrastructure in protected and eco-tourism zones are restored and made climate-resilient, reducing environmental degradation and enhancing the adaptive capacity of local communities.	# of physical infrastructure improved or constructed to withstand climate variability and change (Respond to AFB Core Indicator 4)	0	35	10	- Related technical reports - Inspection reports - Periodic progress reports - Mid-term and terminal evaluation reports	Annual basis	Key risks: - Capacity constraints of local institutions and communities to manage, operate, and maintain infrastructure. - Prolonged procurement process due to the bureaucratic process. - A lack of coordination between and within national and sub-national government partners for			- Project manager - PEU - PMC - UN-Habitat
	# of hectares of ecosystems and natural resources brought under protection, restoration, or improved management in response to climate variability and change (Respond to AFB Core Indicator 5)	0	57ha	20ha						
	# of people who benefit from climate-resilient small-scale infrastructure has access to rehabilitated natural assets to withstand extreme weather and climate variability/change.	0	40,976 (Women: 25,249)	20,000 (Women: 12,000)						
	% of women participating in the stakeholder consultation to	0	30%	30%						

	agree on the drafted engineering design.						sustainable management and operation. - Capacity constraints of local institutions and communities to implement the agreed actions. - Project-funded areas will not be strategically integrated into the existing tourism industry. Mitigation measures: - Establishment of a PMC at the national level and the overall participatory and inclusive project design will improve national, sub-national beneficiary level ownership throughout and thus enhance government support for project implementation. - Capacity building and training of sub-national authorities, CPA committees, and communities will be undertaken to adapt to climate change and management.	
Output 3.1 Te Teuk Pus geothermal area rehabilitated through sediment removal, slope stabilisation, 2 km eco-trail improvements, and 100 units of solar-powered lighting, with indigenous Suoy communities co-managing the process.	A. IN TE TEUK PUS							
	# of hectares of rehabilitated area through sediment removal and slope stabilisation	0	At least 3 ha	At least 3 ha	- Related technical reports - Inspection reports - Field mission reports - Sex disaggregated attendance sheet - Periodical progress reports	Quarterly basis		
	# of kilometres of improved eco-trails (Link to AFB Indicator 4.1.1)	0	2km	2km				
	# of installed solar-powered lighting.	0	100	50				
	% of women participating in the stakeholder consultation to agree on the drafted engineering design.	0	30%	30%				
Output 3.2 Biodiversity corridor established within 57 hectares, linking degraded forest patches with native reforestation using nursery-supported species of ecological and livelihood value.	# of hectares of ecosystems and natural resources targeted by activities to improve protection, restoration, and/or management, through the biodiversity corridor establishment with native reforestation. (Respond to AFB Indicator 5.1.1)	0	57ha	20ha	- Related technical reports - Inspection reports - Field mission reports - Periodic progress reports - Sex disaggregated attendance sheet	Quarterly basis		- Project manager - PEU
	% of women who participating in native reforestation.	0	50%	50%				
	Output 3.3 At least 10 village ponds rehabilitated with climate-resilient design features (e.g., raised bunds, sediment traps) to support year-round water access for agriculture and domestic use.	B. IN AORAL DISTRICT						
# of rehabilitated village ponds (Link to AFB Indicator 4.1.1)		0	10	5	- Related technical reports - Inspection reports - Survey reports - Periodic progress reports	Quarterly basis		- Project Manager - PEU
% of villages out of 72 villages benefited from year-round water access for their farms and domestic use.		0	10%	5%				
% of women who increase water accessibility through rehabilitated ponds.		0%	50%	50%				
Output 3.4 3 irrigation canals (3 km) and 1 water gate rehabilitated in Aoral District with community participation and design standards for dry-season flow retention and flood management.	# of kilometres of total rehabilitated irrigation canals (Link to AFB Indicator 4.1.1)	0	3 km	3 km	- Related technical reports - Inspection reports - Survey reports - Periodic progress reports	Quarterly basis	- Project Manager - PEU	
	# of water gates rehabilitated (Link to AFB Indicator 4.1.1)	0	1	1				
	# of farmers benefited from the improved irrigation canal and a water gate.	0	1,000	500				
	% of female farmers who benefited from the improved irrigation canal and a water gate.	0%	50%	50%				
Output 3.5 Eco-trail	C. IN PHNUM SRUOCH DISTRICT							

rehabilitation with integrated firebreak function (1.5 km) constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.	# of kilometres of improved eco-trails/firebreaks with erosion-control structures, handrails, and signage (Link to AFB Indicator 4.1.1)	0	1.5km	1.5km	- Maps - List of CAs - Inspection reports - Field mission reports - Periodic progress reports - Sex disaggregated attendance sheet	Quarterly basis		- Project manager - PEU	
	# of signages installed to show the entrance of the rule, distance indication, and warnings to minimise the risk of forest fire and sustainable forest management.	0	At least 10	5					
	% of female unskilled/semi-skilled labourers participating in signage installation.	0	30%	30%					
Output 3.6 Irrigation systems (2 km) upgraded using watershed-based design to optimise dry-season storage, flood buffering, and equitable distribution across farm plots.	# of kilometres of irrigation systems upgraded (Link to AFB Indicator 4.1.1)	0	2km	1km	- Maps - Inspection reports - Field mission reports - Periodic progress reports	Quarterly basis		- Project manager - PEU	
	# of hectares of farm plots benefited from dry-season storage and flood buffering.	0	700 ha	0 ha					
	% of female farmers who benefited from the improved irrigation canal and a water gate.	0%	50%	50%					
Output 3.7 Climate-resilient WASH facilities built in Chambak Commune (16 units) and Te Teuk Pus geothermal area (2 units) with water supply connection, climate-smart design (e.g., elevated latrines), menstrual hygiene spaces, and universal access features for women and persons with disabilities.	D. IN PHNUM SRUOCH DISTRICT & TE TEUK PUS					Quarterly basis			-
	# of climate-resilient WASH facilities built to withstand climate variability (Link to AFB Indicator 4.1.1)	0	18	9	- Related technical documents - Inspection reports - Periodic progress reports				- Project manager - PEU
	% of installed WASH facilities utilising functioning climate-smart designs (e.g., elevated structures above historical flood lines, secured water connections).	0	100%	100%					
	% of women who can use the constructed WASH facilities without health and safety risks.	0	100%	100%					
Component 4: Capturing, Sharing, and Scaling Adaptation Knowledge for Sustainability and Replication									
Outcome 4: Adaptation knowledge and locally led solutions are documented, disseminated, and integrated into sub-national and national strategies to promote replication, policy uptake, and long-term sustainability.	% of targeted sub-national government officers and protected area committee members reporting an "increased capacity" to replicate locally led climate adaptation solutions based on project knowledge products.	0	At least 70% of trained	0	- Platform web analytics and download logs - List of distributed knowledge products - Sex disaggregated attendance sheet - Periodic progress	Annual basis	Key risks: - Local stakeholders will not refer to knowledge products due to language barriers, technical	- Project manager - PEU - PMC - UN-Habitat	

	# of district and provincial technical committees that have formally integrated project lessons into annual work plans	0	2	0	reports		content, and literacy levels. - Capacity constraints and insufficient cooperation mechanisms of local institutions and communities to replicate the project's good practices.	
	# of policy recommendations adopted that integrate climate risk and resilience considerations (Respond to AFB Indicator 7)	0	3	0				
	# of recipients of knowledge products during the workshop, meetings, and training.	0	1,000	300				
	% of female recipients of knowledge products during the workshop, meetings, and training.	0%	30%	30%				
Output 4.1 Project lessons and technical knowledge (translated into Khmer, Suoy), audio, and video formats for inclusive dissemination among non-literate and marginalised populations.	# of climate resilient knowledge products and/or tools (stories, information, cases, observations) developed and shared with stakeholders, through posted in media, including project webpages and social media (Respond to AFB Indicator 3.2.1)	0	10	5	- Document review (qualitative content analysis) - Knowledge products - Policy recommendations - Sex disaggregated attendance sheet	Annual basis	Mitigation measures: - Create different types of knowledge products targeting a variety of beneficiaries. - Interactive replication workshops to promote cooperation mechanisms among district, provincial, and national actors.	- Project manager - PEU - PMC - UN-Habitat
	# of policy recommendations developed to integrate climate risk considerations (Respond to AFB Core Indicator 7.1.1)	0	3	0				
	# of policy recommendations formulated through the participation of one or more vulnerable groups (Respond to AFB Indicator 7.1.2)							

297. AF Core Indicator Tables (Part III.E). The three tables below present the Adaptation Fund's core indicators in dedicated, numbered format, populated from the corresponding rows already reported in Table 26 above; no new monitoring data is introduced.

Table 27 Project results framework with indicators, their baseline, targets, risks & assumptions and verification means.

Type of Core Impact Indicators	Number of beneficiaries	Physical infrastructure Developed, Improved, or Strengthened	Ecosystem area restored/protected	Households with improved climate resilience livelihood opportunities
Baseline	0	0	0	0
Target	32,360 direct beneficiaries (12,866 women)	In total, 35 infrastructure assets: 1 vocational training center (Output 1.3) 2 eco-trails (Output 3.1 and 3.5)	At least 57 hectares (Output 3.2)	At least 100 households under climate-smart agriculture (Output 2.2)

		10 village ponds (Output 3.3) 1 canal (Output 3.4) 1 water gates (Output 3.4) 1 irrigation system (Output 3.6) 1 new rock dam (Output 3.6) 18 climate-resilient WASH facilities built (Output 3.7)		
Source	Table 8	Table 26	Table 26	Table 26
Reporting	Annual, via the PEU	Quarterly basis	Quarterly basis	Quarterly basis
Assumptions	As per Table 26	As per Table 26	As per Table 26	As per Table 26
Verification means	As per Table 26	As per Table 26	As per Table 26	As per Table 26

F. Demonstrate how the Project/Programme aligns with the Results Framework of the Adaptation Fund

Table 28 A. Demonstrate how the project/programme aligns with the Results Framework of the Adaptation Fund

Project Objective(s) ¹³³	Project Objective Indicator(s)	Adaptation Fund Outcome	Adaptation Fund Outcome Indicator	Grant Amount (USD)
Objective 1: Strengthen inclusive local governance and institutional capacities for climate risk management of Commune Councils and Community Protected Area (CPA) committees to plan, finance and implement climate risk management strategies.	- # of local plans adopted, implemented, and/or enforced that integrate climate risk and resilience considerations. (Respond to AFB Indicator 7) - # of institutions (communes and protected area communities) within the targeted areas strengthened capacity to understand and better address climate risks and resilience, and actively enforcing updated Commune/Sangkat Investment Plans (CIPs) and Protected Area Plans. (Respond to AFB indicator 2) - # of people with strengthened awareness of climate change risks and how to better address them through climate-resilient infrastructure maintenance, eco-tourism management, and ecosystem assets monitoring (Respond to AFB Indicator 3.1)	Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Policies, strategies, and/or plans adopted, implemented, and/or enforced that integrate climate risk and resilience considerations.	110,000
		Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2. Institutions with strengthened capacity to understand and better address climate risks and resilience.	801,100
		Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes.	3.1. People with strengthened awareness of climate change risks and how to better address them.	
Objective 2: Enhance climate-resilient livelihoods of vulnerable households through ecotourism, vocational skills, and climate-smart agriculture. ¹³⁴	- # of people using improved climate-related threat and hazard information from market and climate-vulnerability assessment (Respond to AFB Indicator 1) - # of people adopting improved and/or new climate-resilient livelihood practices (Respond to AFB Indicator 6.1) - # of households with increased income, or avoided decrease in income (Respond to AFB Indicator 6.2)	Outcome 1: Reduced exposure to climate-related hazards and threats	1. People using improved climate-related threat and hazard information.	860,000
		Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 People adopting improved and/or new climate-resilient livelihood practices. 6.2. Households with increased income, or avoided decrease in income.	

¹³³ The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology, but the overall principle should still apply

¹³⁴ Although the climate risk and vulnerability assessment is designed as Output 2.1, it is a foundational input to livelihoods programming and not to produce an early warning system or risk reduction product, as shown as AF Output 1.1.

Objective 3: Restore and protect degraded ecosystems using nature-based solutions to improve biodiversity and ecosystem services.	- # of physical infrastructure improved or constructed to withstand climate variability and change (Respond to AFB Core Indicator 4) - # of hectares of ecosystems and natural resources brought under protection, restoration, or improved management in response to climate variability and change (Respond to AFB Core Indicator 5)	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4. Physical assets improved or constructed to withstand climate variability and change.	5,400,000
		Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural resource brought under protection, restoration, or improved management in response to climate variability and change.	900,000
Objective 4: Improve equitable access to climate-resilient water, sanitation, access infrastructure and protective small-scale infrastructure that reduces the vulnerability of residents	- # of policy recommendations adopted that integrate climate risk and resilience considerations (Respond to AFB Indicator 7)	Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Policies, strategies, and/or plans adopted, implemented, and/or enforced that integrate climate risk and resilience considerations.	271,000
Total Objective Level Grant Amount				8,342,200

Project Outcome(s)	Project Outcome Indicator(s)	Adaptation Fund Output	Adaptation Fund Output Indicator	Grant Amount (USD)
Outcome 1: Local and sub-national institutions demonstrate improved capacity to plan, budget for, and implement inclusive, risk-informed adaptation actions in protected and climate-vulnerable landscapes.	- # of local plans developed or adjusted to integrate climate risk considerations (Respond to AFB indicator 7.1.1) - # of local plans formulated through the participation of one or more vulnerable groups (Respond to AFB indicator 7.1.2) - # of institutions (commune councils and CPA committees) supported to strengthen capacity to understand and address climate risks and resilience through in climate-informed investment Planning (Respond to AFB Indicator 2.1.1). - # of people participating in activities at the vocational training centre to improve awareness of climate risks and how to address them (Respond to AFB indicator 3.1.1) - # of local institutions and/or communities responsible for decision-making over how adaptation solutions are defined, prioritized, designed, and/or implemented (Respond to AFB indicator 3.3.1)	Output 7.1: Improved integration of climate-resilience strategies into country development plans	7.1.1. # of policies, strategies, and/or plans developed or adjusted to integrate climate risk considerations. 7.1.2. # of policies, strategies, and/or plans formulated through the participation of one or more vulnerable groups.	110,000
		Output 2.1: Strengthened capacity of institutions to understand and better address climate risks	2.1.1. # of institutions supported to strengthen capacity to understand and address climate risks and resilience	801,100
		Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1 # of people participating in activities to improve awareness of climate risks and how to address them.	
		Output 3.3: Increased ownership of adaptation and climate risk reduction processes.	3.3.1 # of local institutions and/or communities responsible for decision-making over how adaptation solutions are defined, prioritized, designed, and/or implemented.	
Outcome 2: Vulnerable households, including women, youth, and indigenous groups,	- # of market and climate vulnerability assessments conducted or updated (Respond to AFB Indicator 1.1.1)	Output 1.1: Risk and vulnerability assessments conducted and updated	1.1.1. # of risk and vulnerability assessments conducted or updated	860,000

adopt diversified and climate-resilient livelihood strategies linked to sustainable agriculture, forest products, and green tourism value chains	- # of people receiving targeted support for new and/or improved livelihoods to manage climate risks (Respond to AFB Indicator 6.1.1)	Output 6.1: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1. # of people receiving targeted support for new and/or improved livelihoods to manage climate risks.		
Outcome 3: Ecosystems and critical rural infrastructure in protected and eco-tourism zones are restored and made climate-resilient, reducing environmental degradation and enhancing the adaptive capacity of local communities. ¹³⁵	- # of kilometres of improved eco-trails (Link to AFB Indicator 4.1.1) - # of rehabilitated village ponds (Link to AFB Indicator 4.1.1) - # of kilometres of total rehabilitated irrigation canals (Link to AFB Indicator 4.1.1) - # of water gates rehabilitated (Link to AFB Indicator 4.1.1) - # of kilometres of improved eco-trails/firebreaks with erosion-control structures, handrails, and signage (Link to AFB Indicator 4.1.1) - # of kilometres of irrigation systems upgraded (Link to AFB Indicator 4.1.1) - # of climate-resilient WASH facilities built to withstand climate variability (Link to AFB Indicator 4.1.1) - # of hectares of ecosystems and natural resources targeted by activities to improve protection, restoration, and/or management, through the biodiversity corridor establishment with native reforestation. (Respond to AFB Indicator 5.1.1)	Output 4.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.1. # of development sector services strengthened to respond to climate variability and change.	5,400,000	
		Output 5.1: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1.1. # of ecosystems and natural resources targeted by activities to improve protection, restoration, and/or management	900,000	
Outcome 4: Adaptation knowledge and locally led solutions are documented, disseminated, and integrated into sub-national and national strategies to promote replication, policy uptake, and long-term sustainability.	- # of climate resilient knowledge products and/or tools (stories, information, cases, observations) developed and shared with stakeholders, through posted in media, including project webpages and social media (Respond to AFB Indicator 3.2.1) - # of policy recommendations developed to integrate climate risk considerations (Respond to AFB Core Indicator 7.1.1) - # of policy recommendations formulated through the participation of one or more vulnerable groups (Respond to AFB Indicator 7.1.2)	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning.	3.2.1. # of climate resilience knowledge products and/or tools developed and shared with stakeholders.	271,000	
		Output 7.1: Improved integration of climate-resilience strategies into country development plans	7.1.1. # of policies, strategies, and/or plans developed or adjusted to integrate climate risk considerations. 7.1.2. # of policies, strategies, and/or plans formulated through the participation of one or more vulnerable groups.		
Total output level grant amount					8,342,200

¹³⁵ Among \$6,300,000 of Component 3 budget, AF Outcome 5 (\$900,000) covers the nursery establishment and biodiversity corridor reforestation cost of Output 3.2; AF Outcome 4 (\$5,400,000) covers all remaining infrastructure under Outputs 3.1, 3.3–3.7. Alternatively, recalculate based on the actual ecosystem vs infrastructure cost split and correct the figures.

G. Budget Summary, Detailed Budget, Budget Notes

Table 29 Budget Summary

Components	Outputs	TOTAL	Year			
			1	2	3	4
Component 1 Build capacity at the community and sub-national levels to strengthen inclusive climate governance and Protected Area Management	Output 1.1. Community capacity-building programme implemented in target districts to maintain climate-resilient infrastructure, manage eco-tourism, and monitor ecosystem assets, with at least 40% participation (of 300 total participants) women, youth, and indigenous groups participating <i>(to support sustainable implementation of interventions under Components 2 and 3)</i>	\$120,000	\$48,000	\$36,000	\$36,000	\$0
	Output 1.2 18 Commune councils and nine Community Protected Areas (CPA) committees trained in climate-informed investment planning, integrating adaptation budgeting, local risk mapping, and disaster response protocols into Commune/Sangkat Investment Plans (CIPs) and Protected Area Plans.	\$110,000	\$50,500	\$26,500	\$31,500	\$1,500
	Output 1.3 Vocational training centre established (in Te Teuk Pus) and operated to train 400 beneficiaries (at least 200 women), emphasising youth and marginalised groups, annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques	\$681,100	\$290,000	\$390,000	\$0	\$1,100
	Sub-total (Output 1) <i>(+\$1,100 from Output 1.1 correction; downstream Sub-total/Programme Cost/Disbursement figures should be re-verified by Finance before submission)</i>	\$911,100	\$388,500	\$452,500	\$67,500	\$2,600
Component 2: Promoting Climate-Resilient Livelihoods through Climate-Smart Agriculture and Eco-Economy Solutions	Output 2.1 Market and climate vulnerability assessments conducted in three locations to identify inclusive and gender-responsive value chains in drought-resilient crops, agroforestry, and non-timber forest products, incorporating indigenous knowledge.	\$110,000	\$67,500	\$42,500	\$0	\$0
	Output 2.2 At least 100 households (min. 40% women) trained in climate-smart agriculture, including agroecological practices such as organic composting, intercropping, and water-saving irrigation.	\$250,000	\$93,000	\$87,000	\$67,000	\$3,000
	Output 2.3 Demonstration plots and value-chain pilots (at least 3 per district) established and managed jointly by youth and elder farmers to promote intergenerational learning in climate-resilient livelihoods	\$500,000	\$0	\$185,300	\$164,300	\$150,400
	Sub-total (Output 2)	\$860,000	\$160,500	\$314,800	\$231,300	\$153,400
Component 3: Restoring Ecosystems and Building Climate-Resilient Infrastructure in Protected and Eco-Tourism Landscapes	A. IN TE TEUK PUS					
	Output 3.1 Te Teuk Pus geothermal area rehabilitated through sediment removal, slope stabilisation, 2 km eco-trail improvements, and 100 units of solar-powered lighting, with indigenous Suoy communities co-managing the process.	\$1,800,000	\$830,000	\$970,000	\$0	\$0
	Output 3.2 Biodiversity corridor established within 57 hectares, linking degraded forest patches with native reforestation using nursery-supported species of ecological and livelihood value.	\$650,000	\$175,000	\$218,300	\$158,300	\$98,400
	B. IN AORAL DISTRICT					
	Output 3.3 At least 10 village ponds rehabilitated with climate-resilient design features (e.g., raised bunds, sediment traps) to support year-round water access for agriculture and domestic use.	\$250,000	\$0	\$150,000	\$100,000	\$0
	Output 3.4 3 irrigation canals (3 km) and 1 water gate rehabilitated in Aoral District with community participation and design standards for dry-season flow retention and flood management.	\$750,000	\$20,000	\$246,300	\$421,300	\$62,400
	C. IN PHNUM SRUOCH DISTRICT					

	Output 3.5 Eco-trail rehabilitation with integrated firebreak function (1.5 km) constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.	\$1,750,000	\$50,000	\$606,300	\$916,300	\$177,400
	Output 3.6 Irrigation systems (2 km) upgraded using watershed-based design to optimise dry-season storage, flood buffering, and equitable distribution across farm plots.	\$250,000	\$12,000	\$37,000	\$156,000	\$45,000
	D. IN PHNUM SRUOCH DISTRICT & TE TEUK PUS					
	Output 3.7 Climate-resilient WASH facilities built in Chambak Commune (16 units) and Te Teuk Pus geothermal area (2 units) with water supply connection, climate-smart design (e.g., elevated latrines), menstrual hygiene spaces, and universal access features for women and persons with disabilities.	\$850,000	\$40,000	\$134,300	\$338,300	\$337,400
	Sub-total (Output 3)	\$6,300,000	\$1,127,000	\$2,362,200	\$2,090,200	\$720,600
Component 4: Capturing, Sharing, and Scaling Adaptation Knowledge for Sustainability and Replication	Output 4.1 Project lessons and technical knowledge (translated into Khmer, Suoy), audio, and video formats for inclusive dissemination among non-literate and marginalised populations.	\$120,000	\$27,500	\$32,500	\$30,000	\$30,000
	Output 4.2 Replication workshops (four workshops and 400 participants) conducted with district, provincial, and national actors (30% women) to integrate lessons into Commune Investment Plans, National Adaptation Plan, and Environment Strategy 2023–2033.	\$151,100	\$27,000	\$63,000	\$13,000	\$48,100
	Sub-total (Output 4)	\$271,100	\$54,500	\$95,500	\$43,000	\$78,100
	Sub-total (Project activities)	\$8,342,200	\$1,730,500	\$3,225,000	\$2,432,000	\$954,700
	Project/Programme Execution cost (9.5%)	\$874,762	\$135,000	\$239,500	\$229,500	\$270,762
	Sub-total (Programme Cost)	\$9,216,962	\$1,865,500	\$3,464,500	\$2,661,500	\$1,225,462
	Project Support Cost (UN-Habitat Cambodia)	\$80,739	\$21,887	\$25,020	\$12,141	\$21,691
	Project Supervision Mission	\$7,415	\$2,500	\$0	\$2,415	\$2,500
	Project Evaluation Cost (HQ)	\$40,000	\$0	\$0	\$0	\$40,000
	Project Cycle Management (on total operational budget) (7%)	\$644,844	\$130,760	\$242,057	\$186,311	\$85,756
	Sub-total (Project Cycle Management)	\$783,038	\$155,147	\$267,077	\$210,867	\$149,947
	AMOUNT OF FINANCIAL REQUESTED	10,000,000	\$2,020,647	\$3,731,577	\$2,872,367	\$1,375,409

Detailed Budget

Table 30 Detailed Budget

Budget Note	Outputs	TOTAL	Year			
			1	2	3	4
Output 1.1. Community capacity-building programme implemented in target districts to maintain climate-resilient infrastructure, manage eco-tourism, and monitor ecosystem assets, with at least 40% participation (of 300 total participants) women, youth, and indigenous groups participating (to support sustainable implementation of interventions under Components 2 and 3)						
1.1a(1)	Define target groups	\$5,000	\$5,000	\$0	\$0	\$0
1.1a(2)	Training needs assessment	\$7,000	\$7,000	\$0	\$0	\$0
1.1a(3)	Prepare training materials	\$21,000	\$7,000	\$7,000	\$7,000	\$0
1.1b	Conduct training and a refresher training	\$75,000	\$25,000	\$25,000	\$25,000	\$0
1.1c	Travel and other expenses	\$12,000	\$4,000	\$4,000	\$4,000	\$0
	Sub-total	\$120,000	\$48,000	\$36,000	\$36,000	\$0
Output 1.2 18 Commune councils and nine Community Protected Areas (CPA) committees trained in climate-informed investment planning, integrating adaptation budgeting, local risk mapping, and disaster response protocols into Commune Investment Plans (CIPs) and Protected Area Plans.						

1.2a(1)	Define target groups	\$5,000	\$5,000	\$0	\$0	\$0
1.2a(2)	Mobilisation of commune councils and CPAs	\$2,500	\$2,500	\$0	\$0	\$0
1.2a(3)	Training needs assessment	\$20,000	\$20,000	\$0	\$0	\$0
1.2a(4)	Prepare training materials	\$5,000	\$5,000	\$0	\$0	\$0
1.2b	Conduct training and a refresher training	\$30,000	\$15,000	\$15,000	\$0	\$0
1.2c	Mainstream climate change adaptation into CIPs and CPA Plans	\$40,000	\$0	\$10,000	\$30,000	\$0
1.2d	Travel and other expenses	\$7,500	\$3,000	\$1,500	\$1,500	\$1,500
	Sub-total	\$110,000	\$50,500	\$26,500	\$31,500	\$1,500
Output 1.3 Vocational training centre established (in Te Teuk Pus) and operated to train 400 beneficiaries (at least 200 women), emphasising youth and marginalised groups, annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques						
1.3b	Pre-construction studies and site investigations (topographic survey, environmental and flood assessment, site verification, etc.)	\$20,000	\$20,000	\$0	\$0	\$0
1.3c	Design consultancy services and experts (ex. architectural, civil/structural, other building services design, construction supervision and project management services), including ESS assessment and report.	\$30,000	\$15,000	\$15,000	\$0	\$0
1.3d(1)	Construction of the main training centre building (including site preparation, earthworks, foundations, structure, roofing, and basic finishes)	\$260,000	\$130,000	\$130,000	\$0	\$0
1.3d(2)	Internal fit-out, fixtures, furniture, signage, and other equipment (training rooms, multi-purpose hall, office, storage)	\$40,000	\$0	\$40,000	\$0	\$0
1.3d(3)	Solar power system (including solar panels, inverter, battery storage, electrical works, and training)	\$50,000	\$0	\$50,000	\$0	\$0
1.3d(4)	Rainwater harvesting system (including roof catchment, gutters, filtration, storage tanks, and distribution system)	\$35,000	\$0	\$35,000	\$0	\$0
1.3d(5)	External works and landscaping (including pathways, covered structures, workshop structures, demonstration garden, seating areas, and planting)	\$40,000	\$20,000	\$20,000	\$0	\$0
1.3e	Capacity-building sessions for local communities, emphasising women and youth.	\$35,000	\$20,000	\$15,000	\$0	\$0
1.3f	Participatory Monitoring and maintenance through Community Agreement with CPA	\$100,000	\$50,000	\$50,000	\$0	\$0
1.3g	Community Development Advisor (Coordinator)	\$60,000	\$30,000	\$30,000	\$0	\$0
1.3h	ESS Consultant for ESS monitoring and documentation	\$11,100	\$5,000	\$5,000	\$0	\$1,100
	Sub-total	\$681,100	\$290,000	\$390,000	\$0	\$1,100
	TOTAL OUTPUT 1	\$911,100	\$388,500	\$452,500	\$67,500	\$2,600
Output 2.1 Market and climate vulnerability assessments conducted in three locations to identify inclusive and gender-responsive value chains in drought-resilient crops, agroforestry, and non-timber forest products, incorporating indigenous knowledge.						
2.1b	Mobilisation of commune councils and CPAs	\$10,000	\$5,000	\$5,000	\$0	\$0
2.1c(1)	Consultancy services (NGO)	\$30,000	\$25,000	\$5,000	\$0	\$0
2.1c(2)	Capacity building of commune councils and CPAs	\$15,000	\$7,500	\$7,500	\$0	\$0
2.1c(3)	Market and climate vulnerability assessments	\$45,000	\$30,000	\$15,000	\$0	\$0
2.1d	Workshops to share the assessment results	\$10,000	\$0	\$10,000	\$0	\$0
	Sub-total	\$110,000	\$67,500	\$42,500	\$0	\$0
Output 2.2 At least 100 households (min. 40% women) trained in climate-smart agriculture, including agroecological practices such as organic composting, intercropping, and water-saving irrigation.						
2.2b(1)	Consultancy services (NGO)	\$48,000	\$0	\$24,000	\$24,000	\$0
2.2b(2)	Define target groups	\$10,000	\$10,000	\$0	\$0	\$0
2.2b(3)	Training needs assessment	\$20,000	\$20,000	\$0	\$0	\$0
2.2b(4)	Prepare training materials	\$40,000	\$20,000	\$20,000	\$0	\$0
2.2c	Conduct training and a refresher training	\$120,000	\$40,000	\$40,000	\$40,000	\$0
2.2d	Travel and other expenses	\$12,000	\$3,000	\$3,000	\$3,000	\$3,000

		Sub-total	\$250,000	\$93,000	\$87,000	\$67,000	\$3,000
Output 2.3 Demonstration plots and value-chain pilots (at least 3 per district) established and managed jointly by youth and elder farmers to promote intergenerational learning in climate-resilient livelihoods							
2.3b	Consultancy services (NGO)	\$45,000	\$0	\$10,000	\$15,000	\$20,000	
2.3c	Research and assessment to identify plots	\$25,000	\$0	\$25,000	\$0	\$0	
2.3d	Infrastructure Development	\$41,000	\$0	\$21,000	\$20,000	\$0	
2.3e	Climate-smart livelihood and value-chain pilots	\$216,000	\$0	\$72,000	\$72,000	\$72,000	
2.3f	Marketing and Promotion	\$39,000	\$0	\$13,000	\$13,000	\$13,000	
2.3g	Knowledge-sharing sessions at demonstration plots	\$24,000	\$0	\$8,000	\$8,000	\$8,000	
2.3h	Participatory monitoring and maintenance through Community Agreement with CPA	\$100,000	\$0	\$33,000	\$33,000	\$34,000	
2.3i	ESS Consultant for ESS monitoring and documentation	\$10,000	\$0	\$3,300	\$3,300	\$3,400	
	Sub-total	\$500,000	\$0	\$185,300	\$164,300	\$150,400	
	TOTAL OUTPUT 2	\$860,000	\$160,500	\$314,800	\$231,300	\$153,400	
A. IN TE TEUK PUS							
Output 3.1 Te Teuk Pus geothermal area rehabilitated through sediment removal, slope stabilisation, 2 km eco-trail improvements, and 100 units of solar-powered lighting, with indigenous Suoy communities co-managing the process.							
3.1b(1)	Site investigation – surveys, assessments, and documentation	\$60,000	\$60,000	\$0	\$0	\$0	
3.1b(2)	Consultancy services and detailed design to prepare design and technical documentation, including the ESS assessment and report	\$70,000	\$70,000	\$0	\$0	\$0	
3.1c(1)	Sediment removal & site preparation – removal of sediment and selective clearing at geothermal source areas (At least 6,000 m ³ (3 ha with a depth of 20 cm) of sediment removal, and requiring excavators, dumpers, operators and gas). <i>NOTE: However, volume may be increased after the detailed assessment during the project implementation stage.</i>	\$600,000	\$400,000	\$200,000	\$0	\$0	
3.1c(2)	Slope stabilisation & drainage – terrain reshaping, erosion control, and drainage improvements around geothermal zones	\$100,000	\$50,000	\$50,000	\$0	\$0	
3.1d(1)	Eco-trail / boardwalk development (~2 km) – development of raised pathways connecting geothermal features	\$320,000	\$0	\$320,000	\$0	\$0	
3.1d(2)	3 Viewing platforms – small platforms and simple shelters to facilitate safe and controlled interaction with geothermal sources	\$90,000	\$0	\$90,000	\$0	\$0	
3.1e	Solar-powered lighting – provision and installation of solar lighting systems along pathways	\$100,000	\$0	\$100,000	\$0	\$0	
3.1f	Selective vegetation management – controlled clearing to define pathways, improve visibility, and limit disturbance	\$100,000	\$50,000	\$50,000	\$0	\$0	
3.1g	Removal and selective demolition of non-functional concrete structures	\$100,000	\$70,000	\$30,000	\$0	\$0	
3.1h	Entrance area improvements – basic orientation features and integration with access to the eco-trail	\$80,000	\$40,000	\$40,000	\$0	\$0	
3.1i	Sustainable Planning (Environment) Specialist	\$70,000	\$35,000	\$35,000	\$0	\$0	
3.1j	Participatory Monitoring and maintenance through Community Agreement with CPA	\$100,000	\$50,000	\$50,000	\$0	\$0	
3.1k	ESS Consultant for ESS monitoring and documentation	\$10,000	\$5,000	\$5,000	\$0	\$0	
	Sub-total	\$1,800,000	\$830,000	\$970,000	\$0	\$0	
Output 3.2 Biodiversity corridor established within 57 hectares, linking degraded forest patches with native reforestation using nursery-supported species of ecological and livelihood value.							
3.2b(1)	Site investigation and restoration planning, including identification of the priority restoration zones and hydrogeological investigation	\$30,000	\$30,000	\$0	\$0	\$0	
3.2b(2)	Consultancy services and detailed design, including ESS assessment and report	\$50,000	\$50,000	\$0	\$0	\$0	
3.2c	Ecosystem-based Adaptation Management Plan (EbAMP) preparation	\$20,000	\$10,000	\$10,000	\$0	\$0	
3.2d	Establishment of nursery facilities and seedling production systems, including water supply	\$60,000	\$60,000	\$0	\$0	\$0	

	systems					
3.2e(1)	Collection and propagation of native species	\$20,000	\$0	\$20,000	\$0	\$0
3.2e(2)	Soil preparation and planting works	\$30,000	\$0	\$30,000	\$0	\$0
3.2f	Native reforestation and enrichment planting	\$270,000	\$0	\$100,000	\$100,000	\$70,000
3.2g	Landscape development (nursery and training surroundings, including a garden, public space, and playground)	\$60,000	\$0	\$30,000	\$30,000	\$0
3.2h	Participatory monitoring, maintenance, and protection of planted areas through the Community Agreement with CPA	\$100,000	\$25,000	\$25,000	\$25,000	\$25,000
3.2i	ESS Consultant for ESS monitoring and documentation	\$10,000	\$0	\$3,300	\$3,300	\$3,400
	Sub-total	\$650,000	\$175,000	\$218,300	\$158,300	\$98,400
B. IN AORAL DISTRICT						
Output 3.3 At least 10 village ponds rehabilitated with climate-resilient design features (e.g., raised bunds, sediment traps) to support year-round water access for agriculture and domestic use.						
3.3b(1)	Site investigation to assess/confirm the target sites	\$20,000	\$0	\$20,000	\$0	\$0
3.3b(2)	Consultancy services and detailed design, ESS reports	\$30,000	\$0	\$30,000	\$0	\$0
3.3c	Excavation and deepening of the pond basin through clearing and removal of excess vegetation and biomass	\$50,000	\$0	\$25,000	\$25,000	\$0
3.3d	Village pond improvement, including slope reshaping and stabilisation, establishment of a vegetative buffer zone, construction of fencing around the pond perimeter and buffer zone, as well as external livelihood watering troughs, Installation of a controlled access gate, and manual water pumping system, and implementation of a water treatment zone.	\$40,000	\$0	\$20,000	\$20,000	\$0
3.3e	Participatory monitoring and maintenance through Community Agreement with CPA	\$100,000	\$0	\$50,000	\$50,000	\$0
3.3f	ESS Consultant for ESS monitoring and documentation	\$10,000	\$0	\$5,000	\$5,000	\$0
	Sub-total	\$250,000	\$0	\$150,000	\$100,000	\$0
Output 3.4 3 irrigation canals (3 km) and 1 water gate rehabilitated in Aoral District with community participation and design standards for dry-season flow retention and flood management.						
3.4b(1)	Site verification, surveys and investigations, including hydraulic and hydrological assessments	\$40,000	\$20,000	\$20,000	\$0	\$0
3.4b(2)	Consultancy services for detailed design and engineering services, including ESS assessment and report	\$40,000	\$0	\$20,000	\$20,000	\$0
3.4c	Canal clearing, regrading, profile restoration, and realignment/rerouting works	\$300,000	\$0	\$100,000	\$200,000	\$0
3.4d	Water gate repair or replacement	\$150,000	\$0	\$50,000	\$100,000	\$0
3.4e(1)	Minor hydraulic structures (inlets/outlets)	\$35,000	\$0	\$20,000	\$15,000	\$0
3.4e(2)	Local erosion protection measures	\$75,000	\$0	\$0	\$50,000	\$25,000
3.4f	Participatory Monitoring through Community Agreement with CPA	\$100,000	\$0	\$33,000	\$33,000	\$34,000
3.4g	ESS Consultant for ESS monitoring and documentation	\$10,000	\$0	\$3,300	\$3,300	\$3,400
	Sub-total	\$750,000	\$20,000	\$246,300	\$421,300	\$62,400
C. IN PHNUM SRUOCH DISTRICT						
Output 3.5 Eco-trail rehabilitation with integrated firebreak function (1.5 km) constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.						
3.5b(1)	Detailed site survey, technical assessment, and trail setting-out	\$30,000	\$30,000	\$0	\$0	\$0
3.5b(2)	Consultancy services and detailed design, including ESS assessment and report	\$50,000	\$20,000	\$30,000	\$0	\$0
3.5c	Eco-trail rehabilitation works (1.5 km), including tread improvement and localised regrading, surface stabilisation, smoothing of uneven or rocky trail sections, selective vegetation clearance, emergency motorbike access improvements (where feasible), drainage improvements, including side ditches and transverse water bars.	\$1,020,000	\$0	\$510,000	\$510,000	\$0
3.5d(1)	Construction of stone, timber, or bamboo steps (300m) in steep and unstable sections	\$300,000	\$0	\$0	\$300,000	\$0

3.5d(2)	Installation of additional handrails (500m) in high-risk trail sections, relocation from the river crossing to a safer left-bank alignment and upgrading/repainting of retained handrail sections to improve visual integration.	\$80,000	\$0	\$0	\$0	\$80,000
3.5e	Water pipe relocation, concealment, and integration into the trail surface	\$30,000	\$0	\$0	\$30,000	\$0
3.5f(1)	Development of designated rest areas and small visitor stopping points	\$10,000	\$0	\$0	\$0	\$10,000
3.5f(2)	Waste management containers at two designated disposal points	\$10,000	\$0	\$0	\$0	\$10,000
3.5f(3)	Signage installation, including (1) entrance information board and primary orientation signage, (2) directional, warning, and distance signage along the trail and at decision points, and (3) educational and regulatory signage for fire prevention, waste management, and visitor behaviour.	\$20,000	\$0	\$0	\$10,000	\$10,000
3.5g	Ecological experts	\$90,000	\$0	\$30,000	\$30,000	\$30,000
3.5h	Participatory monitoring, training, and maintenance through the Community Agreement with CPA	\$100,000	\$0	\$33,000	\$33,000	\$34,000
3.5i	ESS Consultant for ESS monitoring and documentation	\$10,000	\$0	\$3,300	\$3,300	\$3,400
	Sub-total	\$1,750,000	\$50,000	\$606,300	\$916,300	\$177,400
Output 3.6 Irrigation systems (2 km) upgraded using watershed-based design to optimise dry-season storage, flood buffering, and equitable distribution across farm plots.						
3.6b(1)	Site investigation – surveys, assessments, and documentation, including hydrological assessment, runoff analysis, topographic and point cloud survey	\$24,000	\$12,000	\$12,000	\$0	\$0
3.6b(2)	Consultancy services and detailed design, including a new rock dam, hydraulic design of the storage and outflow system, embankment and crest design, controlled outlet and irrigation release, including ESS assessment and report	\$25,000	\$0	\$25,000	\$0	\$0
3.6c	Geotechnical investigation and material testing	\$15,000	\$0	\$0	\$15,000	\$0
3.6d	Environmental and operational review	\$10,000	\$0	\$0	\$10,000	\$0
3.6e	Overflow section protection and erosion control	\$20,000	\$0	\$0	\$20,000	\$0
3.6f	Construction of a new rock dam	\$66,000	\$0	\$0	\$66,000	\$0
3.6g	Rehabilitation and upgrading of irrigation channels, including solid waste barrier installation	\$30,000	\$0	\$0	\$15,000	\$15,000
3.6h	Participatory monitoring and maintenance through Community Agreement with CPA	\$50,000	\$0	\$0	\$25,000	\$25,000
3.6i	ESS Consultant for ESS monitoring and documentation	\$10,000	\$0	\$0	\$5,000	\$5,000
	Sub-total	\$250,000	\$12,000	\$37,000	\$156,000	\$45,000
D. PHNUM SRUOCH & TE TEUK PUS						
Output 3.7 Climate-resilient WASH facilities built in Chambak Commune (16 units) and Te Teuk Pus geothermal area (2 units) with water supply connection, climate-smart design (e.g., elevated latrines), menstrual hygiene spaces, and universal access features for women and persons with disabilities.						
3.7b(1)	Pre-construction studies and site investigations (topographic survey, soil testing, groundwater assessment, environmental and flood assessment, site verification)	\$25,000	\$25,000	\$0	\$0	\$0
3.7b(2)	Design consultancy services (architectural, civil/structural, accessibility design, construction supervision, and project management), including ESS assessment and report	\$35,000	\$15,000	\$20,000	\$0	\$0
3.7c(1)	Construction of WASH facility structure (including site clearing, earthworks, foundations, structure, roofing, partitions, basic finishes and lighting fixtures, inclusive and hygiene facilities (PWD-accessible unit, ramps, handrails, internal fittings, waste bins), and plumbing and water system (handwashing station fixtures, taps, and piping))	\$180,000	\$0	\$20,000	\$80,000	\$80,000
3.7c(2)	Sanitation system (pour-flush latrine with twin pit system, including pits, lining, junction chamber, piping, and toilet fixtures)	\$99,000	\$0	\$11,000	\$44,000	\$44,000
3.7d(1)	Rainwater harvesting system (roof catchment, gutters, downpipes, filtration, storage tanks, and distribution system)	\$63,000	\$0	\$7,000	\$28,000	\$28,000
3.7d(2)	Simple solar power system (solar panels, mounting, battery storage, electrical works, and training)	\$90,000	\$0	\$10,000	\$40,000	\$40,000
3.7e	Water Treatment Plant and main water pipe repair, and water supply system extension to	\$159,000	\$0	\$0	\$80,000	\$79,000

	vulnerable households (Chambak)					
3.7f	WASH Specialist	\$89,000	\$0	\$30,000	\$30,000	\$29,000
3.7g	Participatory monitoring and maintenance through the Community Agreement with CPA	\$100,000	\$0	\$33,000	\$33,000	\$34,000
3.7h	ESS Consultant for ESS monitoring and documentation	\$10,000	\$0	\$3,300	\$3,300	\$3,400
	Sub-total	\$850,000	\$40,000	\$134,300	\$338,300	\$337,400
	TOTAL OUTPUT 3	\$6,300,000	\$1,127,000	\$2,362,200	\$2,090,200	\$720,600
Output 4.1 Project lessons and technical knowledge (translated into Khmer, Suoy), audio, and video formats for inclusive dissemination among non-literate and marginalised populations.						
4.1a	Inception Workshop	\$17,500	\$17,500	\$0	\$0	\$0
4.1b	Case Studies, Video production, Reports	\$62,500	\$0	\$22,500	\$20,000	\$20,000
4.1c	Visibility, Advocacy	\$40,000	\$10,000	\$10,000	\$10,000	\$10,000
	Sub-total	\$120,000	\$27,500	\$32,500	\$30,000	\$30,000
Output 4.2 Replication workshops (four workshops and 400 participants) conducted with district, provincial, and national actors (30% women) to integrate lessons into Commune Investment Plans, National Adaptation Plan, and Environment Strategy 2023–2033.						
4.2a	Reflection Workshops	\$40,000	\$0	\$20,000	\$0	\$20,000
4.2b	International Conference, Seminar participation	\$55,000	\$15,000	\$20,000	\$5,000	\$15,000
4.2c	Project Board Meeting/Working Group Meeting	\$37,100	\$9,000	\$15,000	\$4,000	\$9,100
4.2d	Travel and other expenses	\$19,000	\$3,000	\$8,000	\$4,000	\$4,000
	Sub-total	\$151,100	\$27,000	\$63,000	\$13,000	\$48,100
	TOTAL OUTPUT 4	\$271,100	\$54,500	\$95,500	\$43,000	\$78,100
	TOTAL PROGRAM COST	\$8,342,200	\$1,730,500	\$3,225,000	\$2,432,000	\$954,700
	PROJECT EXECUTION COST					
5a	Project Team Leader (Part Time)	\$315,000	\$45,000	\$90,000	\$90,000	\$90,000
5b	National Project Manager	\$213,150	\$21,000	\$60,000	\$60,000	\$72,150
5c	Office Staff and Technical Support	\$153,000	\$27,000	\$42,000	\$42,000	\$42,000
5d(1)	Office Facilities (Rent)	\$53,079	\$9,000	\$18,000	\$8,079	\$18,000
5d(2)	Office Operation	\$21,000	\$3,000	\$6,000	\$6,000	\$6,000
5d(3)	Office Equipment	\$6,000	\$6,000	\$0	\$0	\$0
5d(4)	Travel and vehicle rent	\$75,443	\$9,000	\$13,500	\$23,421	\$29,522
5d(5)	Audit	\$13,090	\$0	\$0	\$0	\$13,090
5d(6)	Baseline Data Report & Mid-Term Evaluation	\$25,000	\$15,000	\$10,000	\$0	\$0
	TOTAL PROJECT EXECUTION COST	\$874,762	\$135,000	\$239,500	\$229,500	\$270,762
	TOTAL PROJECT COST	\$9,216,962	\$1,865,500	\$3,464,500	\$2,661,500	\$1,225,462
6	Project Support Costs (ROAP)	\$90,739	\$21,887	\$25,020	\$22,141	\$21,691
7	Project Supervision Mission	\$7,415	\$2,500	\$0	\$2,415	\$2,500
8	Project Final Evaluation Cost (HQ)	\$40,000	\$0	\$0	\$0	\$40,000
9	Project Cycle Management (on total operational budget) (7%)	\$644,844	\$130,760	\$242,057	\$186,311	\$85,756
	Sub-total (Project Cycle Management)	\$783,038	\$155,147	\$267,077	\$210,867	\$149,947
	AMOUNT OF FINANCE REQUESTED	\$10,000,000	\$2,020,647	\$3,731,577	\$2,872,367	\$1,375,409

Budget Notes. With reference to Table 30, the detailed budget

298. The Project/Programme Execution Cost (9.5%, USD 874,762, Table 29) is broken down by category using the M&E Budget (Table 25): M&E — USD 65,000 (participatory monitoring, Table 25); ESMP — USD 90,000 (ESS monitoring, Table 25, covering the nine ESS Consultant positions); GAAP — the GAP-linked training costs is embedded in a total budget of \$1,081,000 (Detailed budget line: 1.1b, 1.2b, 1.3e, 2.1c, 2.2c, 2.3e, 3.1b(2), 3.2f, 3.3d, 3.5f(3), 4.1a, 4.1c, 4.2a, 4.2b under Table 30). Budget notes for each output below follow the itemisation style already used for Output 1.1 (number of units, staff, or activities and their duration, rather than a lump sum alone).

- Design of capacity-design sessions/workshops: The project will design and conduct capacity-building sessions at least twice for each output: an initial session and a refresher session, with an approximate six-month interval between them. The workshop content and participant selection will be determined during the training preparation process, including the identification of target trainees and a training needs assessment. Training materials will be developed based on the identified needs, as well as the knowledge and literacy levels of the trainees. To ensure that the sessions are inclusive, participatory, and interactive, each session will be limited to a maximum of 30 participants. The total number of training sessions will vary depending on the number and characteristics of the identified target trainees.

- Consultant costs under outputs 1.1-4.2: both national and international recruitment, will be undertaken through a transparent and merit-based process, with selection based on demonstrated technical expertise, relevant academic qualifications, and/or proven experience in implementing similar assignments. In line with the Adaptation Fund's principles of inclusiveness and gender responsiveness, the project will promote equal opportunities and actively encourage the participation of women and persons from marginalised and vulnerable groups, including persons with disabilities, in the recruitment process.

- Staff-related costs under project execution cost: UN-Habitat plans to recruit four full-time project personnel, including the Project Manager and Team Leader, who have been engaged in ongoing Adaptation Fund-supported projects and the project development process in Cambodia. The project will also recruit additional technical and administrative support staff, as required, based on their relevant qualifications, demonstrated technical expertise—including climate change adaptation, environmental management, and community development—and proven experience in implementing projects of a similar nature, particularly Adaptation Fund-supported interventions. Recruitment will be undertaken through a transparent, merit-based, and inclusive process, in accordance with UN-Habitat's applicable recruitment procedures and the principles of the Adaptation Fund.

299. Output 1.1: Community capacity-building programme implemented in target districts to maintain climate-resilient infrastructure, manage eco-tourism, and monitor ecosystem assets, with at least 40% participation (of 300 total participants) women, youth, and indigenous groups participating (to support sustainable implementation of interventions under Components 2 and 3)

1.1a A Training Specialist will be recruited to define target trainee groups, conduct training needs assessment, and formulate training materials with a lump sum budget of \$33,000.

1.1b Upon arrival of the training materials, the training specialist, with the support of the project team, will conduct first and refresher training sessions at the target districts, CPAs, and communes. \$75,000 is allocated for the training and refresher training during the project implementation and updating of training materials.

1.1c \$12,000 is budgeted for local travel and other expenses under this output.

300. Output 1.2: 18 Commune councils and nine Community Protected Areas (CPA) committees trained in climate-informed investment planning, integrating adaptation budgeting, local risk mapping, and disaster response protocols into Commune Investment Plans (CIPs) and Protected Area Plans.

1.2a A Training Specialist will be recruited to define target trainee groups, mobilize community councils and CPAs, conduct training needs assessment, and formulate training materials with a lump sum budget of \$32,500.

1.2b Upon arrival of the training materials, the training specialist, with the support of the project team, will conduct first and refresher training sessions at the target districts, CPAs, and communes. \$30,000 is allocated for the training and refresher training during the project implementation and updating of training materials.

1.2c An amount of \$40,000 has been allocated for technical support, review, and guidance to mainstream climate change adaptation into local plans at commune and CPA levels. A Climate Change Specialist and Planning Specialist will support this activity.

1.2d \$7,500 is budgeted for local travel and other expenses under this output.

301. Output 1.3: Vocational training centre established (in Te Teuk Pus) and operated to train 400 beneficiaries (at least 200 women), emphasising youth and marginalised groups, annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques.

1.3a This activity will be part of the AOC with the principal executing partner [i] to establish a vocational training centre [ii] to provide a series of capacity-building training under other outputs.

1.3b \$20,000 is budgeted for site investigation and inspections, including ground investigation, topographical survey, environmental and flood assessment, and site verification.

1.3c Consultancy services include detailed design, Bill of Quantity, and support during construction is budgeted for \$30,000.

1.3d \$425,000 is budgeted for the vocational training centre establishment, including internal furniture equipment (\$40,000), solar power system (\$50,000), rainwater harvesting system (\$35,000), and external works and landscaping (\$40,000).

1.3e A budget allocation of \$35,000 is earmarked for organizing capacity-building sessions targeting 400 local residents, emphasising women and youth.

1.3f \$100,000 has been included to conduct participatory monitoring with CPA in the area through the Community Agreement to enhance their ownership and the sustainability of the project-invested centre.

1.3g \$60,000 has been budgeted for community mobilisation to involve the beneficiaries, particularly during the planning and their continued involvement after the construction and miscellaneous expenses.

1.3h \$11,100 is budgeted for the ESS monitoring and documentation to ensure the project's compliance with the Adaptation Fund's ESP and Gender Policy.

302. Output 1.1 to 1.3 Project Staff

The following staff will be recruited by the principal executing partner, drawing from the budget allocation for Outputs 1.1 to 1.3.

National: The costs following the national staff (technical) have been budgeted to manage Output 1.

- two Training Specialists (6 months in year 1; and 12 months each in subsequent years)

- one Community Development Advisor (Coordinator) (6 months in year 1; and 12 months in subsequent year)

- one Climate Change Specialist (6 months in year 1; and 12 months each in subsequent years)

International: - Two person-months of technical and supervisory support by one ESS Specialist, specifically for this output, is budgeted at \$5,000 per month (1 month in Year 1 and 2).

303. Output 2.1: Market and climate vulnerability assessments conducted in three locations to identify inclusive and gender-responsive value chains in drought-resilient crops, agroforestry, and non-timber forest products, incorporating indigenous knowledge.

2.1a This output will be a part of the AOC with the principal executing partner to identify viable, gender-responsive, and indigenous knowledge-based value chains in crops, non-timber forest products, and ecotourism services in three target locations.

2.1b The estimated cost for community and CPA mobilisation for the participatory marketing and climate vulnerability assessments in three target locations is projected at \$10,000.

2.1c A budget allocation of \$30,000 is earmarked for subcontracting with an NGO with similar experiences in the past [i] to build the capacity of mobilised community and CPA representatives to conduct assessments (\$15,000) and [ii] to conduct participatory assessments and summarise the results as a report (\$45,000).

2.1d \$10,000 is budgeted to conduct workshops to disseminate the assessment results with the sub-national stakeholders to discuss and identify potential climate-smart agricultural practices and climate-resilient livelihood options.

304. Output 2.2: At least 100 households (min. 40% women) trained in climate-smart agriculture, including agroecological practices such as organic composting, intercropping, and water-saving irrigation.

2.2a This output will be a part of the AOC with the principal executing partner to conduct capacity-building training to train at least 100 households on climate-smart agriculture and climate-resilient livelihood practices.

2.2b An NGO will be subcontracted under the AOC to define target trainee groups, conduct training needs assessment through the Training-of-Trainers (ToT) approach, and formulate training materials with a lump sum budget of \$118,000.

2.2c Upon arrival of the training materials, the NGO, with the support of the project team, will conduct first and refresher training sessions towards at least 100 households. \$120,000 is allocated for training and refresher training during the project implementation and updating of training materials.

2.2d \$12,000 is budgeted for local travel and other expenses under this output.

305. Output 2.3: Demonstration plots and value-chain pilots (at least 3 per district) established and managed jointly by youth and elder farmers to promote intergenerational learning in climate-resilient livelihoods

2.3a This output will be a part of the AOC with the principal executing partner to provide technical guidance, monitor, and on-site training at least 6 target demonstration plots.

2.3b An NGO will be subcontracted under the AOC to provide technical guidance, monitor, and on-site training at least 6 target demonstration plots with a lump sum budget of \$40,000.

2.3c \$25,000 is budgeted for research and assessment to identify at least 6 target demonstration plots through selection criteria setting and a transparent selection process.

2.3d \$41,000 is allocated to develop the necessary infrastructure to practice climate-smart agricultural practices on at least 6 demonstration plots.

2.3e \$216,000 is budgeted for climate-smart livelihood and value-chain pilot operation, and management at 6 demonstration plots, including on-site demonstration sessions led by local trained trainers to showcase climate-smart agricultural and climate-resilient livelihood techniques to beneficiaries living in the vicinity.

2.3f Developing marketing strategies, creating promotional materials, and organising events to raise awareness and attract visitors to the newly developed livelihood options for \$39,000.

2.3g \$24,000 is budgeted to organise knowledge-sharing sessions at demonstration plots.

2.3h \$100,000 has been included to conduct participatory monitoring with CPA in the area through the Community Agreement to enhance their ownership and the sustainability of the project-invested centre.

2.3i \$10,000 is budgeted for ESS monitoring and documentation to ensure the project's compliance with the Adaptation Fund's ESP and Gender Policy.

306. Output 2.1 to 2.3 Project Staff

The following staff will be recruited by the principal executing partner, drawing from the budget allocation for Output 2.1 to Output 2.3:

National: - one Livelihood Specialist (6 months in year 1; and 12 months each in subsequent years)

- one NGO will be contracted with the principal executing partner under Outputs 2.1-2.3 (6 months in years 1 and 4; and 12 months each in subsequent years)

International

- Two person-months of technical and supervisory support by one ESS Specialist, specifically for this output, is budgeted at \$5,000 per month (1 month in Years 2, 3, and 4).

307. Output 3.1: Te Teuk Pus geothermal area rehabilitated through sediment removal, slope stabilisation, 2 km eco-trail improvements, and 100 units of solar-powered lighting, with indigenous Suoy communities co-managing the process.

3.1a This activity will be a part of the AOC with the principal executing partner to rehabilitate the Te Teuk Pus geothermal sites through [i] sedimental removal, [ii] slope stabilisation, [iii] 2km eco-trail improvements, and [iv] solar-power lighting installations.

3.1b It is estimated that site investigation will cost \$60,000, and \$70,000 has been budgeted for consultancy services and detailed design as well as technical documentation, including ESS risk assessment and report.

3.1c \$600,000 is budgeted for sediment and vegetation clearing at geothermal source areas, and \$100,000 has been allocated for slope stabilisation and drainage, including terrain reshaping, erosion control, and drainage improvements around geothermal zones.

3.1d An amount of \$320,000 has been allocated for 2km eco-trail development to connect geothermal source areas, and \$90,000 has been allocated for 3 viewing platforms to facilitate safe and controlled interaction with geothermal sources.

3.1e The estimated cost for solar-power lighting provision and installation along a 2km eco-trail is projected at \$100,000.

3.1f To ensure ecologically sound rehabilitation, \$100,000 is budgeted to invest in managing selective vegetation to define pathways, improve visibility, and limit disturbance.

3.1g Removal of selective demolition of non-functional concrete structures requires \$100,000 to improve the visual quality of the site, restore a more natural appearance, and create a clearer and more coherent spatial layout aligned with the overall design approach.

3.1h \$80,000 is budgeted to improve the entrance area of Te Teuk Pus geothermal site through information boards explaining ecological values, the geothermal water system, and appropriate trail use, together with simple orientation features and a clearer connection to the start of the eco-trail.

3.1i A total of \$70,000 is provisioned under this output for ecologically sustainable planning and designing to ensure no adverse impacts to indigenous culture and unique geothermal zones through the project interventions.

3.1j \$100,000 has been included to conduct participatory monitoring with CPA in the area through the Community Agreement to enhance their ownership and the sustainability of the project-invested infrastructure.

3.1k \$10,000 is budgeted for the ESS monitoring and documentation to ensure the project's compliance with the Adaptation Fund's ESP and Gender Policy.

308. Output 3.2: Biodiversity corridor established within 57 hectares, linking degraded forest patches with native reforestation using nursery-supported species of ecological and livelihood value.

3.2a This activity will be a part of the AOC with the principal executing partner to establish a biodiversity corridor at the Te Teuk Pus geothermal sites through [i] nursery facility establishment, [ii] nursery-supported reforestation, and [iii] public space establishment.

3.2b It is estimated that site investigation will cost \$30,000, and \$50,000 has been budgeted for consultancy services and detailed design

as well as technical documentation, including ESS risk assessment and report.

3.2c \$20,000 has been allocated in the first 2 years for developing an ecosystem-based adaptation management plan (EbAMP) for restoring local forests with nursery-supported native species with ecological and likelihood values, including consultations with communities and hiring experts.

3.2d A budget allocation of \$60,000 is earmarked for establishing nursery facilities and a seedling production system, including water supply systems.

3.2e To implement the participatory native species restoration activities, \$20,000 is budgeted for native species seed collection and propagation, and \$30,000 for soil preparation at the identified restoration sites.

3.2f Nursery-supported native restoration will include seedlings, enclosure, bamboo poles, excavation and backfilling, planting, and management, and has been budgeted at \$270,000.

3.2g The budgetary requirement for landscape development, including nursery surroundings, a garden, public space, and playground, stands at \$60,000.

3.2h \$100,000 has been included in conducting participatory monitoring with CPA in the area through the Community Agreement to enhance their ownership and the sustainability of the project-invested biodiversity corridor and related assets.

3.2i \$10,000 is budgeted for the ESS monitoring and documentation to ensure the project's compliance with the Adaptation Fund's ESP and Gender Policy.

309. Output 3.3: At least 10 village ponds rehabilitated with climate-resilient design features (e.g., raised bunds, sediment traps) to support year-round water access for agriculture and domestic use.

3.3a This activity will be a part of the AOC with the principal executing partner to rehabilitate at least 10 village ponds with climate-resilient design features to support year-round water access.

3.3b It is estimated that site investigation will cost \$20,000, and \$30,000 has been budgeted for consultancy services and detailed design as well as technical documentation, including ESS risk assessment and report.

3.3c The excavation and deepening of the pond basin through clearing and removal of excess vegetation and biomass, scheduled for the dry seasons in years 2 and 3, is budgeted at \$50,000.

3.3d An additional \$40,000 is budgeted for village pond improvement, including slope reshaping and stabilisation, construction of fencing and a controlled access gate, external livelihood watering troughs, a manual water pumping system and establishment of a vegetable buffer zone and a water treatment zone.

3.3e \$100,000 has been included in conducting participatory monitoring with CPA in the area through the Community Agreement to enhance their ownership and the sustainability of the project-invested village ponds.

3.3f \$10,000 is budgeted for the ESS monitoring and documentation to ensure the project's compliance with the Adaptation Fund's ESP and Gender Policy.

310. Output 3.4: 3 irrigation canals (3 km) and 1 water gate rehabilitated in Aoral District with community participation and design standards for dry-season flow retention and flood management.

3.4a This activity will be a part of the AOC with the principal executing partner to improve dry-season flow retention and flood management through [i] rehabilitation of 3km irrigation canals, including small field channels, and [ii] 1 water gate.

3.4b It is estimated that site investigation will cost \$40,000, and \$40,000 has been budgeted for consultancy services and detailed design as well as technical documentation, including ESS risk assessment and report.

3.4c 1 canal clearing, regrading, profile restoration, and realignment/rerouting work is budgeted at \$300,000.

3.4d An additional \$150,000 is budgeted for replacing or repairing a water gate.

3.4e \$35,000 is budgeted for minor hydraulic structures (inlets/outlets), and \$75,000 has been allocated to ensure erosion protection measures.

3.4f \$100,000 has been included in conducting participatory monitoring with CPA in the area through the Community Agreement to enhance their ownership and the sustainability of the project-invested irrigation systems, including a water gate.

3.4g \$10,000 is budgeted for the ESS monitoring and documentation to ensure the project's compliance with the Adaptation Fund's ESP and Gender Policy.

311. Output 3.5: Eco-trail rehabilitation with integrated firebreak function (1.5 km) constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.

3.5a This activity will be a part of the AOC with the principal executing partner to improve the 1.5km of existing eco-trail with the function as a firebreak to reduce wildfire risks, improve emergency access, and enhance tourism appeal.

3.5b It is estimated that site investigation will cost \$30,000, and \$50,000 has been budgeted for consultancy services and detailed design as well as technical documentation, including ESS risk assessment and report.

3.5c \$1,020,000 is budgeted to rehabilitate 1.5km eco-trail, including tread improvement and localised regrading, surface stabilisation, smoothing of uneven or rocky trail sections, selective vegetation clearance, emergency motorbike access improvements (where feasible), drainage improvements and transverse water bars.

3.5d An amount of \$300,000 has been allocated for the construction of 300m of stone, timber, or bamboo steps in steep and unstable sections, and \$80,000 is budgeted for the installation of additional handrails (500m) in high-risk trail sections.

3.5e Financial requirements for water pipe relocation, concealment, and integration into the trail surface are estimated at \$ 30,000.

3.5f Eco-trail ensures safe and environmentally-sound design through development of designated rest areas (\$10,000), installation of waste management containers at two designated disposal points (\$10,000), and installation of 10 signages in strategic locations (\$20,000).

3.5g A total of \$90,000 is provisioned under this output for ensuring ecologically sustainable design and rehabilitation process of a 1.5km eco-trail/firebreak.

3.5h \$100,000 has been included in conducting participatory monitoring with CPA in the area through the Community Agreement to enhance their ownership and the sustainability of the project-invested infrastructure.

3.5i \$10,000 is budgeted for the ESS monitoring and documentation to ensure the project's compliance with the Adaptation Fund's ESP and Gender Policy.

312. Output 3.6: Irrigation systems (2 km) upgraded using watershed-based design to optimise dry-season storage, flood buffering, and equitable distribution across farm plots.

3.6a This activity will be a part of the AOC with the principal executing partner to optimise limited water availability during droughts and reduce flood-related runoff during peak rains through [i] upgrading the irrigation channels and [ii] establishing a new rock dam.

3.6b It is estimated that site investigation will cost \$24,000, and \$25,000 has been budgeted for consultancy services and detailed design as well as technical documentation, including ESS risk assessment and report.

3.6c Another \$15,000 is budgeted for geotechnical investigation and material testing during the procurement process.

3.6d \$10,000 is allocated for environmental and operational review to ensure the design and function that will not harm existing ecological systems.

3.6e \$20,000 is budgeted for overflow section protection and erosion control of the stream towards the new rock dam.

3.6f The estimated cost for the construction of a new rock dam is projected at \$66,000.

3.6g A total of \$30,000 is provisioned under this output for rehabilitation and upgrading of the irrigation channels through rock and sediment removal and channel reshaping.

3.6h \$50,000 has been included in conducting participatory monitoring with CPA in the area through the Community Agreement to enhance their ownership and the sustainability of the project-invested irrigation systems.

3.6i \$10,000 is budgeted for the ESS monitoring and documentation to ensure the project's compliance with the Adaptation Fund's ESP and Gender Policy.

313. Output 3.7: Climate-resilient WASH facilities built in Chambak Commune (16 units) and Te Teuk Pus geothermal area (2 units) with water supply connection, climate-smart design (e.g., elevated latrines), menstrual hygiene spaces, and universal access features for women and persons with disabilities.

3.7a This activity will be a part of the AOC with the principal executing partner to build 18 climate-resilient WASH facilities at the strategic locations [i] to ensure the long-term structural and environmental resilience of facilities against climate-induced flooding and seasonal water scarcity, and [ii] to reduce exposure to health risks and enhance dignity and inclusion for women, girls, and persons with disabilities.

3.7b It is estimated that pre-construction studies and site investigations will cost \$25,000, and \$35,000 has been budgeted for consultancy services and detailed design as well as technical documentation, including ESS risk assessment and report.

3.7c Financial requirements for 18 gender-sensitive and disability inclusive WASH facility structure constructions are estimated at \$180,000, and another \$99,000 is allocated for sanitation system installation, including a pour-flush latrine with a twin-pit system.

3.7d To make the WASH facilities climate-resilient, \$63,000 is budgeted to install a rainwater harvesting system and \$90,000 for solar power system installations.

3.7e A total of \$159,000 is provisioned under this output for repairing the existing water treatment facility and main water pipe connecting from the facility to the water connection point at Chambak Commune. It also includes the cost of extending the water supply system connection from the commune water connection point to vulnerable households in the area.

3.7f A budget allocation of \$89,000 is earmarked for technical supervision, assessment, and monitoring during the intervention to ensure the avoidance of any risk of water or land pollution.

3.7g \$100,000 has been included in conducting participatory monitoring with CPA in the area through the Community Agreement to enhance their ownership and the sustainability of the project-invested WASH facility and water supply systems.

3.7h \$10,000 is budgeted for the ESS monitoring and documentation to ensure the project's compliance with the Adaptation Fund's ESP and Gender Policy.

314. Output 3.1 to 3.7 Project Staff

National: The costs following the national staff (technical) have been budgeted to manage Output 3

- one Sustainable Planning (Environment) Specialist (6 months in year 1; and 12 months in subsequent year)

- one Ecological Expert (6 months in year 2; and 12 months each in subsequent years)

- one WASH Specialist

- three full-time Social Mobilizers (6 months in years 1 and 4; and 12 months each in subsequent years)

315. Output 4.1: Project lessons and technical knowledge (translated into Khmer, Suoy), audio, and video formats for inclusive dissemination among non-literate and marginalised populations.

4.1a. Inception workshop: A lump sum of \$17,500 is budgeted for the inception workshop, which will invite all involved stakeholders.

4.1b Case studies, video production, reports: Production of various case studies, videos, surveys and reports is budgeted at \$62,500 for the project period.

4.1c Visibility and Advocacy: Production of various project visibility and advocacy materials is budgeted at \$40,000.

316. Output 4.2: Replication workshops (four workshops and 400 participants) conducted with district, provincial, and national actors (30% women) to integrate lessons into Commune Investment Plans, National Adaptation Plan, and Environment Strategy 2023–2033.

4.2a. Reflection workshops: A lump sum of \$40,000 is budgeted for four reflection workshops that will invite all involved stakeholders.

4.2b Participation in regional/international conferences and seminars: A budget of \$55,000 in a four-year project period has been allocated to cover costs for participation in climate change-related regional and international conference/seminars by senior government officials.

4.2c Community Consultations, Project Board Meetings, and Project Team Meetings: The Project Board meetings and Project Team Meetings will be scheduled every six months and three months. \$37,100 per year is allocated for expenses related to these meetings.

4.2d \$19,000 is budgeted for monitoring progress, local travel, and other expenses under this output.

317. Output 4.1 to 4.2 Project Staff

National: The costs following the national staff (technical) have been budgeted to manage Output 4.

- one Knowledge Management Specialist (6 months in years 1 and 4; and 12 months each in subsequent years)

318. Project Execution Cost

5.a One Team Leader will be recruited and contracted through UNOPS with the support of the Human Settlement Officer at the Regional Office of UN-Habitat. The Team Leader will be contracted for with a total allocation of \$315,000.

5.b One Project Manager will be recruited and contracted through UNON with a total allocation of \$213,1150.

5.c Office staff for technical support will be recruited and contracted through UNOPS with a total allocation of \$153,000.

5.d The following operation costs are budgeted:

(1) Office rent at in total of \$53,079.

(2) Office operations at \$500 per month. Total budget \$21,000.

(3) \$6,000 is allocated for the purchase of various office equipment.

(4) \$75,443 allocated for local travel and vehicle rental during the project implementation.

(5) Final Audit will be conducted, for which \$13,090 is allocated.

(6) \$15,000 has been budgeted for baseline data collection and reporting, and \$10,000 has been budgeted for the project mid-term and final evaluation.

319. Project Cycle Management Fee

6. Project support by the UN-Habitat Regional Office (ROAP) is budgeted at \$90,739 for guidance and assistance in the finalisation of a variety of reports, including periodic reports, annual reports, and project terminal reports.

7. Project supervision mission from the UN-Habitat Regional Office (ROAP) is budgeted at \$7,415 for a bi-annual project supervision mission for monitoring of implementation, AF and UN-Habitat policies compliance, and IE staff supervision and reporting.

8. \$40,000 is budgeted for UN-Habitat Evaluation Unit support for evaluation during and after the project implementation (in addition to the actual evaluation costs).

9. Project Cycle Management on the total operational budget (7%) is for UN-Habitat Headquarters overall project supervision, including compliance with UN-Habitat policies and standards (gender, human rights, climate change, etc.).

320. Monitoring Costs

1. The costs for monitoring activities detailed in section D have been allocated in different sections of the budget.

2. Field monitoring progress of all outputs will be done through the Community Agreement with the CPAs within the project target areas.
3. Mid-term evaluation will be conducted in Year 2 (Budget 5.4(6)), and the final evaluation will be conducted in Year 4 (Budget 7).
4. Project management committee meetings, Working Group Meetings, and community consultations are budgeted in Output 4.2.

Table 31 M&E Budget

Type of M&E Activity	Total	Year 1	Year 2	Year 3	Year 4
Participatory community monitoring to support core M&E frameworks while building local capacity and stewardship.					
Monitoring Progress of Outputs through Community Agreement with 9 CPAs (Table 30; 1.3e, 2.3h, 3.1j, 3.2h, 3.3e, 3.4f, 3.5h, 3.6h, and 3.7g)	750,000	125,000	274,000	199,000	152,000
Core M&E activities by IE and EE					
ESS monitoring (Table 30; 1.3g, 2.3i, 3.1k, 3.2i, 3.3f, 3.4g, 3.5i, 3.6i, and 3.7h)	90,000	10,000	31,500	26,500	22,000
Baseline data report & Mid-term & Final Evaluation (inc HQ) (Table 30; 5.4d(6) and 7)	65,000	15,000	10,000	0	40,000
Project management committee meetings, Working Group Meetings, Community Consultations (Table 30; 4.2c)	37,100	9,000	15,000	4,000	9,100
Total	942,100	159,000	330,500	229,500	223,100

H. Disbursement Schedule

Table 32 Disbursement Schedule

Date	TOTAL	Upon Signing (November 2026)	November 2027	November 2028	November 2029
Funds (US\$)	8,342,200	1,730,500	3,225,000	2,432,000	954,700
Programme Execution	874,762	135,000	239,500	229,500	270,762
Programme Cycle Mgt	783,038	155,147	267,077	210,867	149,947
TOTAL	10,000,000	2,020,647	3,731,577	2,872,367	1,375,409

Table 33 Disbursement schedule and milestones for each year

	Year 1	Year 2	Year 3	Year 4
	1st disbursement: Upon agreement signature	2nd disbursement: One year after the project started - Upon First Progress Report submitted - Upon a financial report indicating the disbursement of at least 80% of funds	3rd disbursement: Two years after the project started - Upon Second Progress Report submitted - Upon a financial report indicating the disbursement of at least 80% of funds	4th disbursement: Third year after the project started - Upon the Third Progress Report submitted - Upon a financial report indicating the disbursement of at least 80% of funds
Milestone by the year-end	- Inception workshop completed and report prepared. - Monitoring and evaluation plan developed. - Detailed design of year 2 infrastructure projects/activities initiated. - Capacity-building programme for year 2 is planned. - Advocacy materials designed. - PMC meeting held.	- Detailed design of year 3 infrastructure projects/activities initiated. - Capacity-building programme for year 3 is planned. - Advocacy materials produced. - PMC meeting held. - Mid-term evaluation report prepared	- Detailed design of year 4 infrastructure projects/activities initiated. - Capacity-building programme for year 4 is planned. - PMC meeting held. - Mid-term evaluation report prepared. - Annual report prepared.	- 100% of infrastructure/ natural assets rehabilitated/ improved and handed over to sub-national stakeholders. - Advocacy materials produced. - Final evaluation report prepared. - Project terminal report submitted. - Regional advocacy - PMC meeting held. - Closing workshop completed and report prepared.

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

A. Record of endorsement on behalf of the government (Please find the official endorsement letter from Ministry of Environment below)



B. Implementing Entity certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (Cambodia Climate Change Strategic Plan and updated Nationally Determined Contribution) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

Raf Tuts
Director, Global Solutions Division,
UN-Habitat

Date: 03/07/2026

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PART V ANNEXES

Annex A: Meeting Minutes with stakeholders

Minutes of Meeting at Provincial Department of Environment, Kampong Speu Province		
Date: 05 June 2025	Venue:	Number of attendees: 9 (3 females)
Participants: Representatives from Department of Environment		
Objective: Consultation on existing challenges and needs of communities in Kampong Speu Province and the preparation of the community meetings, site investigation, and data collection		
Topics	Remarks	
Introduction of objective of the meeting	Ms. Khlok Vichet Ratha, Deputy Director of Climate Change Department, MoE	
Brief of UN-Habitat in Cambodia and Sharing the experiences of AF1 and AF2 Project	Mr. Sok Vanna, Country Programme Manager	
Brief current challenges, needs, and existing initiatives in Kampong Speu province	Mr. Chanthet Thannarak, Director of Department of Environment	
Proposed interventions	Mr. Sok Vanna, Country Programme Manager	

The meeting began with an introduction by Ms. Klok Vichet Ratha, Deputy Director of the Climate Change Department at the Ministry of Environment (MoE). She briefly outlined the objectives of the meeting and the Ministry's mandate in enhancing community resilience. Mr. Sok Vanna then provided an overview of UN-Habitat and the Adaptation Fund projects in Kep, Preah Sihanouk, Kampot, and Koh Kong provinces, and then invited the Director of the Department of Environment and officials to share their insights on climate change challenges, local needs, and existing initiatives.

Mr. Chanthet Thannarak began by outlining the ongoing efforts aligned with the Circular Strategy on Environment (2023–2028). He highlighted the following key points as the inputs for the concept note:

- The main climate change challenges include forest fires and drought. Due to limited water-related infrastructure (such as canals), communities face water shortages during the dry season. There is only one fire truck managed by the police, which is insufficient to respond to forest fire emergencies effectively.
- It is essential that the project aims to improve the livelihoods of communities within the protected forest area. There is a total of nine communities in the province. Their potential needs include innovative ecotourism activities that connect communities, hospitality skills development, and climate-resilient agriculture.
- Support for forest patrol activities is also recommended, particularly through the provision of transportation such as motorbikes.
- Additional infrastructure to promote ecotourism may include designated camping areas, plant nurseries, and solar-powered streetlights within the communities.

The discussion then moved on to preparations for upcoming community meetings, site investigations, and data collection activities.



Meeting at Kampong Speu Department of Environment

Minutes of Meeting at Ko Daun Tey Community (Te Teuk Pus Geothermal Site), Trapeang Chour and Ta Sal Communes, Aoral District, Kampong Speu Province		
Date: 06 June 2025	Venue:	Number of attendees: 22 (5 females)
Participants: Representatives from Department of Environment		
Objective: Consultation on existing challenges and needs of communities in Kampong Speu Province		
Topics	Remarks	
Brief of objectives of the meeting	Mr. Sok Vanna, Country Programme Manager	
Brief current challenges, needs, and existing initiatives in Ko Daun Tey Community (Te Teuk Pus)	Community representatives	
Proposed interventions	Mr. Sok Vanna, Country Programme Manager	

The meeting began with an introduction by Mr. Sok Vanna, Country Programme Manager, UN-Habitat. He briefly outlined

that the meeting aimed to gather baseline data and identify community challenges to support the development of a project concept note for submission to the donor. Mr. Vanna then invited community representatives to share their insights on climate change challenges, local needs, and existing initiatives.

Mr. Phal Cheurn first emphasised that the Ko Daun Tey community, which has a total of 509 families (equivalent to 1,326 people, of which 609 are female), is home to the Suoy ethnic minority group and raised the following key challenges:

- The climate has changed noticeably. When it rains, it rains heavily, but temperatures remain high.
- The community is facing land issues, with private companies occupying communal lands.
- At Te Teuk Pus, infrastructure for tourists remains limited. There is a lack of basic facilities such as benches, toilets, water supply, training or cultural centres, homestays, and green spaces. A comprehensive and holistic design is needed to make the area more attractive to tourists.
- During the rainy season, rainwater flows directly from the street into the area, causing flooding and affecting the aesthetic value of Te Teuk Pus.
- Currently, the community charges an entrance fee of 5,000 Riels (approximately USD 1.25) per car and receives around 800 tourists per month.

Ms. Ven Samen added the following key points:

- The community primarily depends on agriculture, especially rice cultivation, for their livelihoods, but access to water remains a challenge.
- Other sources of income include working as farm labourers, garment factory workers, and construction workers. While some residents grow vegetables, they lack access to markets.
- Community members generally have low education levels and lack the hospitality skills necessary to support eco-tourism development.
- Land tenure and the protection of community land continue to be major concerns.

Following the facilitation process to ensure all community needs were captured, a site investigation was conducted.



Minutes of Meeting at Phnum Sruoch District Hall, Kampong Speu Province		
Date: 10 June 2025	Venue: Phnum Sruoch District Hall	Number of attendees: 16 (5 females)
Participants: Representatives from district administration, communes, and Department of Environment		
Objective: Consultation on existing challenges and needs of communities in Phnum Sruoch District		
Topics	Remarks	
Introduction of objective of the meeting	Ms. Khlok Vichet Ratha, Deputy Director of Climate Change Department, MoE	
Brief of UN-Habitat in Cambodia and Sharing the experiences of AF1 and AF2 Project	Mr. Sok Vanna, Country Programme Manager	
Brief current challenges, needs, and existing initiatives in Phnum Sruoch District	• Mr. Kiev Leang Kea, District Governor • Mr. Kong Bun, Deputy Chief of Chambak Commune • Mr. Chreok Sophal, Commune Council of Yeay Mao Pichnil • Other district officials	
Proposed interventions	Mr. Sok Vanna, Country Programme Manager	

The meeting began with an introduction by Ms. Klok Vichet Ratha, Deputy Director of the Climate Change Department at the Ministry of Environment (MoE). She briefly outlined the objectives of the meeting and the Ministry's mandate in enhancing community resilience. Mr. Sok Vanna then provided an overview of UN-Habitat and the Adaptation Fund projects in Kep, Preah Sihanouk, Kampot, and Koh Kong provinces. In line with prior discussions with senior government officials at MoE, he further explained that the meeting aimed to gather baseline data and identify local challenges to support the development of a project concept note for submission to the Adaptation Fund, as the third one after the two mentioned earlier in the Coastal provinces. Mr. Vanna then invited district and commune representatives to share their insights into climate change challenges, local needs, and existing initiatives.

First, Mr. Kiev Leang Kea, Governor of Phnum Sruoch District, Kampong Speu Province, highlighted several major challenges, including forest fires, a lack of water for both agriculture and daily use, and limited market access for agricultural products. He further noted that illegal deforestation is a key driver of climate change in the area. Therefore, strengthening the capacity and sustainability of forest protection communities in this district is essential. He added that there are seven such communities in the district, whose main sources of livelihood are agriculture and eco-tourism. In addition, to address the forest fire, the district plans to create forest fire protection committees at the commune level. Commune shall allocate a

budget (around 2-3 million riels) under the 3-year investment plan for the forest fire purpose. The committees have a role to raise awareness about forest fire prevention to communities (especially students), structure private water vendors to seek their support, etc. In addition, commune representatives and other officials also shared some challenges they were facing.

Mr. Kong Bun, Deputy Chief of Chambak Commune:

- During the dry season, there is a shortage of water.
- During the rainy season, heavy rainfall causes excess water in the paddy fields.
- The population mainly relies on rainwater for agriculture, which is their primary source of livelihood. Canals should be renovated to supply water.
- Although water supply systems have been established under the REDD+ and World Bank (under the management of Ministry of Rural Development) projects, drawing water from Chambak Waterfall, they remain insufficient to meet local needs.

Mr. Chreok Sophal, Commune Council of Yeay Mao Pichnil

- Temperatures rise significantly and then drop quickly.
- Forest fires commonly occur during the dry season, especially in April.
- As the commune is located in a highland area, rice cultivation is uncommon, while mango farming is widespread (covering around 70% of agricultural activity). However, the market for mangoes is very limited. Factories only purchase the highest quality produce, leaving behind medium- and low-quality mangoes, which farmers are often forced to sell at low prices or dispose of entirely.
- Those who do not own agricultural land work as labourers supporting the mango plantations.
- Water supply is another issue. Only around 10% are connected to the water supply from a nearby district in Kampot province. Others rely on groundwater, while the stream water is polluted by mango factories directly discharging wastewater.

Mr. Suos Sokha, Director of Administration of Phnum Sruoch District

- Water is the main source to improve livelihood in the district as the majority of the population relies on agriculture (especially rice cultivation, mango plantation, and animal raising).
- As not all mangoes are purchased by the factory, would it be good if the project includes the family-scale manufacturing and structure to be a strong value chain of mango production in the city?



Opening session



Sharing by the district representative

Minutes of Meeting at Chambak Community, Chambak Commune, Phnum Sruoch Distirct, Kampong Speu Province

Date: 10 June 2025 **Venue:** Chambak Community **Number of attendees:** 16 (7 females)

Participants: Representatives from communes, communities, and Department of Environment

Objective: Consultation on existing challenges and needs of communities in Chambak Community

Topics	Remarks
Introduction of objective of the meeting	Ms. Khlok Vichet Ratha, Deputy Director of Climate Change Department, MoE
Brief current challenges, needs, and existing initiatives in Chambak Community	Mr. Touch Morn, Community leader
Proposed interventions and clarification	Ms. Piseth Sensamras, Project Coordinator

The meeting began with an introduction by Ms. Klok Vichet Ratha, Deputy Director of the Climate Change Department at the Ministry of Environment (MoE). She briefly outlined the objectives of the meeting and the Ministry's mandate in enhancing community resilience. Ms. Piseth Sensamras added that the meeting aimed to gather baseline data and identify local challenges to support the development of a project concept note for submission to the Adaptation Fund and then invited community leaders and members to describe the community profile, challenges, and needs.

First, Mr. Touch Morn briefly described the community profile. The community consists of around 500 families (equivalent to about 2,000 people). Main livelihoods are rice cultivation and animal raising. Others include forest products, labourers, and eco-tourism. Main challenges include:

- Lacks water for agriculture and daily consumption. It is worth noting that the Ministry of Rural Development, under the World Bank Project, constructs the water treatment plant and pipe network. Though the network could be reached by households. People need to come to a standpipe and get the water for their needs.
- Lack of infrastructure to support access to Chambak waterfall. Those include entrance roads, handrails, and a proper location for camping activities.



Minutes of Meeting at Aoral District Hall, Kampong Speu Province

Date: 11 June 2025

Venue: Aoral District

Number of attendees: 20 (3 females)

Participants: Representatives from district administration, communes, and Department of Environment

Objective: Consultation on existing challenges and needs of communities in Aoral District

Topics	Remarks
Introduction of objective of the meeting	Ms. Khlok Vichet Ratha, Deputy Director of Climate Change Department, MoE
Brief of UN-Habitat in Cambodia and Sharing the experiences of AF1 and AF2 Project	Mr. Sok Vanna, Country Programme Manager
Brief current challenges, needs, and existing initiatives in Aoral District	District and communes
Proposed interventions	Mr. Sok Vanna, Country Programme Manager

The meeting began with an introduction by Ms. Klok Vichet Ratha, Deputy Director of the Climate Change Department at the Ministry of Environment (MoE). She briefly outlined the objectives of the meeting and the Ministry's mandate in enhancing community resilience. Mr. Sok Vanna then provided an overview of UN-Habitat and the Adaptation Fund projects in Kep, Preah Sihanouk, Kamot, and Koh Kong provinces. In line with prior discussions with senior government officials at MoE, he further explained that the meeting aimed to gather baseline data and identify local challenges to support the development of a project concept note for submission to the Adaptation Fund, as the third one after the two mentioned earlier in the Coastal provinces. Mr. Vanna then invited district and commune representatives to share their insights on climate change challenges, local needs, and existing initiatives.

Mr. Sat Vin, Deputy Governor of Aoral District, Kampong Speu Province, highlighted several major challenges, including frequent forest fires, a lack of water for both agriculture and daily use, and limited market access for agricultural products. He noted that although the district has a large water reservoir—Tasal Dam—the absence of proper irrigation infrastructure, such as canals, prevents effective water distribution. Despite efforts made through the district and commune development funds, improvements remain inadequate. The district is home to eight protected area communities whose main livelihood activities are agriculture and eco-tourism. However, these communities face constraints such as low education levels and limited skills in tourism and hospitality services. Additional challenges were raised by commune representatives and local officials:

Mr. Piv Veng, Deputy Chief of Tasal Commune, stated that:

- Forest patrol activities are limited, and deforestation continues to occur.
- Due to low education levels, communities struggle to diversify their income sources. Most rely on agriculture, wage labor, and collecting forest resources such as firewood and charcoal.
- Priority needs include repairing water gates, rehabilitating irrigation canals, and installing solar-powered pumping systems to support agricultural activities.
- There is one water gate (Tapoch Dam) that shall be repaired, and the three connected canals, in total about 3 km (with approximately 3-meter depth and 5-meter width)

Mr. Vorn Lang, Deputy Chief of Trapeang Chour Commune, mentioned:

- The lack of water is the primary challenge.
- Market access for agricultural products remains a concern.

Mr. Soeng Bun Hen, Deputy Director of Administration, Aoral District, added:

- Irrigation infrastructure issues persist, including damaged water gates and shallow canals.
- Water pollution caused by mango processing factories is becoming a problem.
- Forest fires are a major threat during the dry season, and the district's main response is raising awareness on fire prevention.



Minutes of Meeting at Chambak Community, Chambak Commune, Phnum Sruoch Distirct, Kampong Speu Province

Date: 23 July 2025	Venue: Chambak Community	Number of attendees: 10 (2 females)
Participants: Representatives from community, and Ministry of Environment		
Objective: Clarification of proposed interventions responding to existing challenges and needs of community		

The meeting began with an introduction by Ms. Piseth Sensamras, Project Coordinator at UN-Habitat. She briefly outlined the meeting's objectives, which were to validate local challenges and needs in support of developing a project concept note for submission to the Adaptation Fund. She then invited community leaders and members to present the community profile and to foster mutual understanding of the challenges identified during the consultation held on 10 June 2025. These challenges included water scarcity, forest fires, a lack of hospitality skills among community members, and insufficient infrastructure to support eco-tourism activities.

First, Mr. Touch Morn provided a brief overview of the community profile. The community comprises six of the nine villages in the Chambak commune, with approximately 500 families (around 2,000 people). The main sources of income are agriculture (the primary one), labour, non-timber forest products, and ecotourism. The community committee was formed in 2010 with 15 members, of whom 10 are female. The community has been functioning and well-known in the country and has received rewards from other countries due to its high commitment, transparency, and accountability. Lastly, he confirmed that the identified challenges are key priorities for enhancing the community's climate resilience.

Next, Mr. Binod Shrestha introduced the main proposed interventions, including the development of nature-based infrastructure such as walking paths, handrails, and dams, and enhancing community hospitality skills to advance their ecotourism activities. He also invited suggestions for other typical strengths that could attract tourists to the area and asked the prospects if community mobilisation could be done for the construction of small-scale and nature-based solutions with the technical training from the project, if it is granted. In addition to the waterfall, Mr. Touch Morn suggested that cycling, camping, birdwatching (with an estimated 80 species), and visiting bat caves could become attractive eco-tourism activities—provided that basic infrastructure is improved to enhance accessibility. With more than 10 years of experience leading the community, he reaffirmed that the labour force could be managed as long as the plan is set along with capacity building and a market wage is applied for them.



Site investigation in Chambak Community

Minutes of Meeting at Ko Daun Tey Community (Te Teuk Pus Geothermal Site), Trapeang Chour and Ta Sal Communes, Aoral District, Kampong Speu Province

Date: 24 July 2025	Venue:	Number of attendees: 19 (3 females)
Participants: Representatives from the Ministry of Environment, and Ko Daun Tey Community		
Objective: Clarification on proposed interventions responding to existing challenges and needs of community		

The meeting began with an introduction by Ms. Piseth Sensamras, Project Coordinator at UN-Habitat. She briefly explained that the meeting aimed to gather additional baseline data and verify the challenges reported during the consultation held on 06 June 2025, in support of developing a project concept note for submission to a donor.

Mr. Binod Shrestha emphasised that Te Teuk Pus is the primary focus of the project and invited community members to provide further insights into the needs for upgrading the area.

Mr. Phal Cheurn, the community leader, confirmed the main challenges, including limited livelihood options—agriculture being the primary source of income—alongside water scarcity and an inefficient market value chain. Based on his insights and those of other community members, several key needs were identified:

- Vocational training for community members to enhance hospitality and other skills, particularly to add value to non-timber forest products. It was noted that bamboo is abundant in the area.
- Promotion of available non-timber forest products to tourists. Some members use various trees as tea alternatives, which they believe could treat diseases.
- Promotion of Suoy minority group culture, including traditional foods and cultural activities.
- Native tree planting to support biodiversity and ecological restoration.
- Development of walking paths and installation of solar lighting to improve accessibility and safety.

- WASH facilities (Water, Sanitation, and Hygiene) to improve community health and hygiene.
- Creation of a relaxing area for visitors to enjoy the natural hot spring.



Community Meeting and Site Investigation

Minutes of Meeting at Ministry of Environment

Date: 28 July 2025	Venue: Ministry of Environment	Number of attendees: 9 (4 females)
Participants: Representatives from Ministry of Environment		
Objective: Consultation on objectives, components, outputs, and activities of the draft concept note		

The meeting began with a presentation by Mr. Binod Shrestha, Resource person, UN-Habitat. He briefly presented the program location, project objectives and activities to enhance community climate resilience.

His Excellency CHUOP Paris, Secretary of State, Ministry of Environment, provided a recommendation on all of the components for the discussion and decided what action to take to tailor the priorities in the project implementation to align with the Adaptation Fund to enhance the adaptive capacity, ecosystem resilience, and climate-resilience for the livelihoods of vulnerable communities in and around protected areas of Kampong Speu Province. The following key points shall be incorporated to enhance the concept note.

Component 1: Build capacity at community and sub-national levels to strengthen inclusive climate governance and protected area management.

- Conduct participatory climate change vulnerability assessment
- Make sure to have efficient means to mainstream climate actions into local planning and community

Component 2: Promoting Climate-Resilient Livelihoods through Climate-Smart Agriculture and Eco-Economy Solutions

- Promote eco-tourism in the community by enhancing hospitality services, improving local cuisine, and cultivating vegetables for use in tourist activities to support green job creation.
- Mainstream climate-smart agriculture into community practices to improve livelihoods.
- Establish a vocational training centre to build local capacity. The centre should focus on adding value to existing products, small-scale agro-processing, hospitality skills, and improving water quality to support eco-tourism service delivery
- Link the designed eco-tourism activities under this project with existing initiatives to create a corridor green destination in the province

Component 3: Restoring Ecosystems and Building Climate-Resilient Infrastructure in Protected and Eco-Tourism Landscapes

- Improve basic infrastructure in the Chambak community while prioritising nature-based solutions. Community involvement in construction is encouraged to foster ownership and sustainability.
- Enhancing the Te Teuk Pus site is essential for improving the livelihoods of vulnerable communities in the area, as it is unique in the country and highly exposed to climate change, especially the heat.
- Restore the ecosystem by encouraging the community to grow diverse crops, including short-term varieties. Establish nurseries for vegetables, fruits, and herbs, etc. within the project area.
- Rehabilitate ponds, aiming for at least one pond per village, to ensure water availability—especially during the dry season.

Component 4: Capturing, Sharing, and Scaling Adaptation Knowledge for Sustainability and Replication.

- Replicate the successful practices of the Chambak community in other communities throughout the country and in the region
- Widely disseminate lessons learned and technical knowledge from the project to enhance its visibility and impact.
- Document all project activities in a digital format to ease accessibility for learning and future reference.

The discussion then moved on to preparations for writing the concept note, project proposal, budget allocation, and submission.



Minutes of Meeting at Chambak Community for Outputs 3.5, 3.6 and 3.7

Date: 24 May 2026	Venue: Chambak Community	Number of attendees: 14 (6 females)
Participants: Representatives from Chambak Community Committee		
Objective: Consultation on related outputs in Chambak Community, Kampong Speu Province (outputs 3.5, 3.6 and 3.7)		

The meeting was started by Mr. Vanna Sok, Habitat Programme Manager, UN-Habitat Cambodia, with his introduction of the meeting objective and overview of the new AF proposal. Then, he briefly presented the defined hard investments in Chambak Community, Kampong Speu Province (outputs 3.5, 3.6 and 3.7) based on the approved concept note.

Thereafter, the open discussion was started the following key points were summarised as a result.

Output 3.5 Eco-trail rehabilitation with integrated firebreak function (1.5 km) constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.

- Confirmed the need to construct 1.5 km of firebreaks/ trails with the possibility of using the available natural rocks to reduce the slippery slope and improve accessibility.
- Although there were no handrails during the concept note stage, the community installed handrails by themselves 200m (the upper parts close to the waterfall). The community requested to install an additional 300 m of handrails in the slope areas.
- There is a need to install informational and regulatory signboards at the entrance, warning signboards for high-risk areas, and signage to show the distance of the trails.
- The community also shared their need for rest areas and proper waste containers in the eco-trail and near the waterfall.
- A separated emergency trail (about 80-100 cm width) for motorbikes is suggested.

Output 3.6 Irrigation systems (2 km) upgraded using watershed-based design to optimise dry-season storage, flood buffering, and equitable distribution across farm plots.

- The nature-based dam is needed to regulate the water flow and store the water for both agriculture and eco-tourism activities.
- The improvement of the irrigation systems will benefit about 700 ha of paddy fields.

Output 3.7 Climate-resilient WASH facilities built in Chambak Commune (16 units) and Te Teuk Pus geothermal area (2 units) with water supply connection, climate-smart design (e.g., elevated latrines), menstrual hygiene spaces, and universal access features for women and persons with disabilities.

- 18 units of latrines shall be scattered in the eco-tourism sites and public places such as schools and pagodas that shall be defined during the implementation phase.
- There is also a need to extend the existing public water supply connection to households, as well as repair the damaged existing water treatment plant and main pipelines connected to the plant.
- The sustainable operation and maintenance of the water supply system remain a challenge, as the proposed community water tariff of 1,700 riels per cubic meter has not yet been approved by the commune, despite the community leaders having already drafted the terms and conditions, including the fee collection and management mechanism.



Minutes of Consultation Meeting at Kompong Speu Province for preparing Full proposal

Date: 25 May 2026	Venue: Palm River Hotel, Kampong Speu province	Number of attendees: 31 (8 females)
Participants: Representative of provincial administration, relevant provincial departments, districts, communes, and local community		
Objective: Stakeholder Consultation for Full Proposal Formulation		

The meeting was started by Mr. Sum Cheat, Deputy Department of Climate Change, Ministry of Environment, with the introduction of his strongest support for the project proposal on enhancing community-based adaptation and ecosystem resilience in Kampong Speu province, aligning with the Cambodia Climate Change Strategic Plan (2024-2033) and the third National Determined Contribution (NDC 3.0).

The deputy governor of Kampong Speu province thanked the MoE and UN-Habitat for initiating the project idea, and he expressed the provincial authority's strong support for the project. He stated that this is the first project that aims to enhance climate adaptation through supporting vulnerable communities in improving their livelihood through ecotourism, vocational capacity-building, and nature-based solutions.

Vanna Sok, UN-Habitat Programme Manager, UN-Habitat Cambodia, presented the objectives of the meeting and an overview of the new AF proposal. Then, the discussion started to acquire relevant information, community priorities, gender assessment, environmental impact assessment and others.

The discussion results are summarised as follows:

- Proposed outcomes and outputs were agreed upon.
- **Output 3.1:** As the area has indigenous people, it was recommended to preserve their indigenous cultural identities as well as practices. It was also suggested to consider women's roles and their empowerment because the area has a number of female vendors selling non-timber products. It was also suggested that the project include public toilets for women and girls, a vocational training centre with crafting spaces for exhibition, waste management facilities, and a nursery to promote nursery-supported native reforestation.
- **Output 3.6:** The nature-based dam is needed to regulate the water flow and store the water for both agriculture and eco-tourism activities.
- **Output 3.7:** There is a need for proper WASH facilities to minimise health and safety risks at both Phnum Sruoch District and Te Teuk Pus Geothermal Reas. In the Chambak areas, the provincial authorities also expressed their need to extend the existing public water supply connections to households, in addition to repairing the damaged water treatment plant and the main pipelines to flow the water to public water supply systems.



Minutes of Meeting at Ko Daun Tey Community (Te Teuk Pus Geothermal Site) for Outputs 1.3, 3.1, 3.2 and 3.7		
Date: 25 May 2026	Venue: Te Teuk Pus geothermal area, Aoral District, Kampong Speu Province	Number of attendees: 26 (6 females)
Participants: Representative of Ministry of Environment, Provincial Department of Environment, Ta Sal Commune, Tra Peang Chor Commune, Ko Daun Tey Community, and UN-Habitat with international experts		
Objective: Consultative on related outputs in Kao Daun Tey Community, Kampong Speu Province (Outputs 1.3, 3.1, 3.2 and 3.7)		

The meeting was started by Mr. Sum Cheat, Deputy Director of the Department of Climate Change (MoE), sharing the rationale on how the project is designed. Thereafter, Mr. Vanna Sok, Habitat Programme Manager (HPM) of UN-Habitat, highlighted the objectives of the meeting and site assessment. Ms. Sensamras Piseth also provided the overview of the new AF proposal and outputs 1.3, 3.1, 3.2 and 3.7 in the area, based on the approved concept note.

During the open discussion, the following key points were confirmed.

Output 1.3 Output 1.3 Vocational training centre established (in Te Teuk Pus) and operated to train 400 beneficiaries (at least 200 women), emphasising youth and marginalised groups, annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques.

- It was requested that the vocational training centre include training rooms, practical training spaces, crafting/workshop rooms, and a space for exhibition and cultural performance.
- There is a need to develop livelihood skills of youth, women, and marginalised groups through theoretical and practical capacity-building sessions covering several topics, such as vegetable growing, poultry raising, hospitality services, cooking skills, and handicraft production.
- Products produced during training should meet market standards and be suitable for the local market supply.
- Planting native tree species in local areas for shade to protect the building and trainees from extreme heat and strong winds.

Output 3.1 Te Teuk Pus geothermal area rehabilitated through sediment removal, slope stabilisation, 2 km eco-trail improvements, and 100 units of solar-powered lighting, with indigenous Suoy communities co-managing the process.

- Removal of vegetation and small invasive plants around the geothermal area to improve environmental conditions and site accessibility.
- Installation of trails with solar lighting to connect locations with hot spring water to support safer access to a unique hot spring, which is only one in the country.
- It was ensured that Indigenous Suoy communities will participate in the co-management, maintenance, and protection of the geothermal area.

Output 3.2 Biodiversity corridor established within 57 hectares, linking degraded forest patches with native reforestation using nursery-supported species of ecological and livelihood value.

- A nursery development was requested to support the production of native tree species with ecological and livelihood value.
- Local communities require training and technical knowledge on seedling preparation, nursery management, and tree planting techniques.
- Water supply systems, such as rainwater harvesting tanks, should be considered due to a lack of water sources.
- It was confirmed that community people are willing to participate in reforestation and biodiversity corridor management during and after the project implementation.

Output 3.7 Climate-resilient WASH facilities built in Chambak Commune (16 units) and Te Teuk Pus geothermal area (2 units) with water supply connection, climate-smart design (e.g., elevated latrines), menstrual hygiene spaces, and universal access features for women and persons with disabilities.

- There is a need to construct two WASH facilities with a proper septic tank and rainwater harvesting tank.



Minutes of Meeting at Ta Sal Commune for Outputs 3.3 and 3.4

Date: 26 May 2026	Venue: Ta Sal Commune	Number of attendees: 29 (7 females)
Participants: Representative of Ministry of Environment, Provincial Department of Environment, Ta Sal Community, Ta Sal commune, and UN-Habitat with international experts		
Objective: Consultative on related outputs in Kampong Speu Province (outputs 3.3 and 3.4)		

The meeting was started by Mr. Sum Cheat, Deputy Director of the Department of Climate Change (MoE), sharing the rationale on how the project is designed. Thereafter, Mr. Vanna Sok, Habitat Programme Manager (HPM) of UN-Habitat, highlighted the objectives of the meeting and site assessment. Ms. Sensamras Piseth, Coordinator of UN-Habitat Cambodia, provided the overview of the new AF proposal and the defined interventions (outputs 3.3 and 3.4) in Ta Sal commune, based on the approved concept note

Output 3.3 At least 10 village ponds rehabilitated with climate-resilient design features (e.g., raised bunds, sediment traps) to support year-round water access for agriculture and domestic use.

- It was agreed with sub-national authorities to select strategic ponds with high water demand, including pagoda and schools, through detailed assessment and stakeholder consultations during the project implementation stage.

- The project intervention will be the pond rehabilitation through vegetation removal, sediment clearance, and planting native trees that help to reduce soil erosion.
- Currently, ponds are used for water fetching, and women play key roles in fetching water for domestic use.

Output 3.4 3 irrigation canals (3 km) and 1 water gate rehabilitated in Aoral District with community participation and design standards for dry-season flow retention and flood management.

- After discussion with the community, it was identified the needs to rehabilitate the irrigation canal with a length of approximately 1.7 km and 1.3 kms of small channels for rice fields to improve water retention from rainfall, as it currently has no connection to other water sources.
- It was clarified that the rehabilitation work should pay attention to the elevation of the canal and the water gate. Currently, the canal elevation is unstable, resulting in poor water flow from upstream to downstream areas, especially during periods of low water levels. In addition, the existing water gate is lower than the water level, causing water to flow out easily and limiting the ability to retain water within the canal system.
- The project intervention is also required to strengthen the embankments of the canal because these are severely damaged by seasonal heavy rainfall and strong water flow.
- The canal is not capable of storing any water as it flows out to the rivers and often becomes dry because the soil layer consists mainly of sand and rocks, causing rapid water infiltration.
- Local farmers currently depend mainly on rainfall for rice cultivation due to the limited availability of irrigation water during the dry season.



Minutes of Meeting: Discussion about results from the mission with Arcadis team and the progress of a full project proposal formulation

Date: 28 May 2026	Venue: Ministry of Environment (MoE)	Number of attendees: 12 (4 females)
Participant: Representative of Ministry of Environment, including the Secretary of State and the Director General, and UN-Habitat with international experts		
Objective: Reporting the mission results from 24 to 28 May 2026 and presenting the full proposal interventions and approaches.		

The meeting began with an introduction of participants from the national government, UN-Habitat, and international experts from Arcadis.

Mr. Vanna Sok, Habitat Programme Manager, UN-Habitat Cambodia, acknowledged participants and highlighted the rational of the formulation of this project, a field mission on 24-28 May 2026, and the main objective of the meeting.

H.E. CHUOP Paris, Secretariat of State of the Ministry of Environment, and the focal point of Cambodia for the Adaptation Fund, reaffirmed his support for the proposed project aiming to enhance the capacity of communities to adapt to climate change in the two vulnerable districts of Kampong Speu province. The project is well responded to prioritization of the Royal of Government of Cambodia through the Ministry of Environment to promote sustainable development by prioritizing nature-based solutions, particularly in the context of climate change.

Mr. Jun Fujihira, Technical Officer of UN-Habitat Cambodia, presented the project interventions and approaches, and the outputs of the field mission with international experts.

During the discussion after the presentation, H.E. CHUOP Paris expressed his endorsement of the overall project interventions at the three target areas: Te Teuk Pus Geothermal Area, Chambak Community, and Tasal Community. He also provided the following suggestions to strengthen the project.

- **Output 1.3:** The vocational training centre is expected to be a pivotal space for providing capacity-building to local stakeholders, prioritising women and the indigenous Suoy community, to enhance livelihood options through a diverse curriculum that includes handicrafts, climate-smart agriculture, and soft skills (e.g., hospitality).
- **Outputs 3.1 and 3.2:** Te Teuk Pus Geothermal Area should be rehabilitated through sediment and vegetation removal, slope stabilisation, 2 km of eco-trail improvements, the installation of 100 solar-powered lights, the establishment of a

nursery, and reforestation activities. In addition, it was also suggested to include solid waste management facilities and public spaces, such as a playground for children.

- **Output 3.7:** Strong consideration is given to allocating sufficient WASH facilities at strategic sites with high demand.



Annex B Summary of Proposed Physical Construction Activities

Output 1.3. Vocational training centre established (in Te Teuk Pus) and operated to train 400 beneficiaries (at least 200 women), emphasising youth and marginalised groups, annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques.

INTRODUCTION

Deliverables	• Climate-resilient vocational training centre design • Construction of a vocational training centre with green technology, such as solar power and rainwater harvesting tanks
Beneficiaries	Direct: 400 (Women and youth: 200) annually Indirect: 12,329 (Women and youth: 6,170)
Budget	US\$ 680,000.00
Location	Te Teuk Pus geothermal area, Trapeang Chour & Ta Sal Communes, Aoral district, Kampong Speu province
CPA	Ko Daun Tey CPA



PROBLEM STATEMENT

Te Teuk Pus geothermal site and the surrounding communities in Trapeang Chour and Ta Sal Communes, Aoral District face a combination of climate vulnerability, limited livelihood opportunities, and inadequate basic infrastructure. Climate change is intensifying drought, heat stress, flooding and environmental degradation, which places additional pressure on local livelihoods and weakens resilience. Although the area has strong eco-tourism potential and unique natural assets, local people -especially youth, women, and marginalised groups- have limited access to marketable skills, vocational education, and employment pathways that could help them to benefit from the growing green economy. To strengthen sustainable local climate resilience, an appropriate vocational training centre should be improved as a public facility, which is accessible to sub-national stakeholders to build their capacity on climate change adaptation, climate-smart agricultural practices, non-timber forest products, handicrafts, eco-guiding, cooking, digital marketing, solid waste management, solar panel repair, and digital literacy for climate information access.

Without a dedicated vocational training facility, communities remain constrained in building practical skills to enhance their climate-resilient livelihood skills, eco-tourist hospitality, and the project-funded infrastructure operation, management, and maintenance. The dedicated training centre establishment and capacity-building curriculum will be designed to be directly relevant to local climate adaptation and economic development.

LOCATION

The proposed vocational training centre will be established at the Te Teuk Pus geothermal area, located in Trapeang Chour and Ta Sal Communes, Aoral District, Kampong Speu Province. This strategic location lies within a climate-vulnerable and ecologically important landscape that links protected areas, indigenous culture, eco-tourism assets, and surrounding climate-vulnerable communities. Locating the vocational training centre in Te Teuk Pus will create direct access for local residents, especially women, youth, indigenous Suoy populations, while also supporting the broader development of the basis for sustainable tourism, green skills, and climate-resilient livelihoods across Aoral and neighbouring intervention areas.

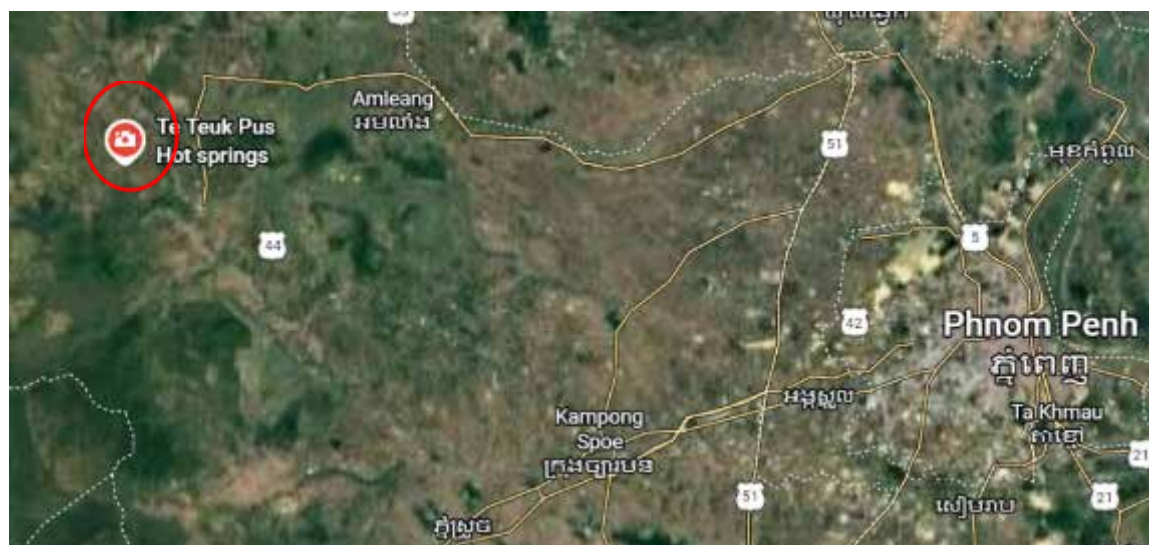


Figure 1. Location of the Te Teuk Pus geothermal area in RED) in relation to Phnom Penh

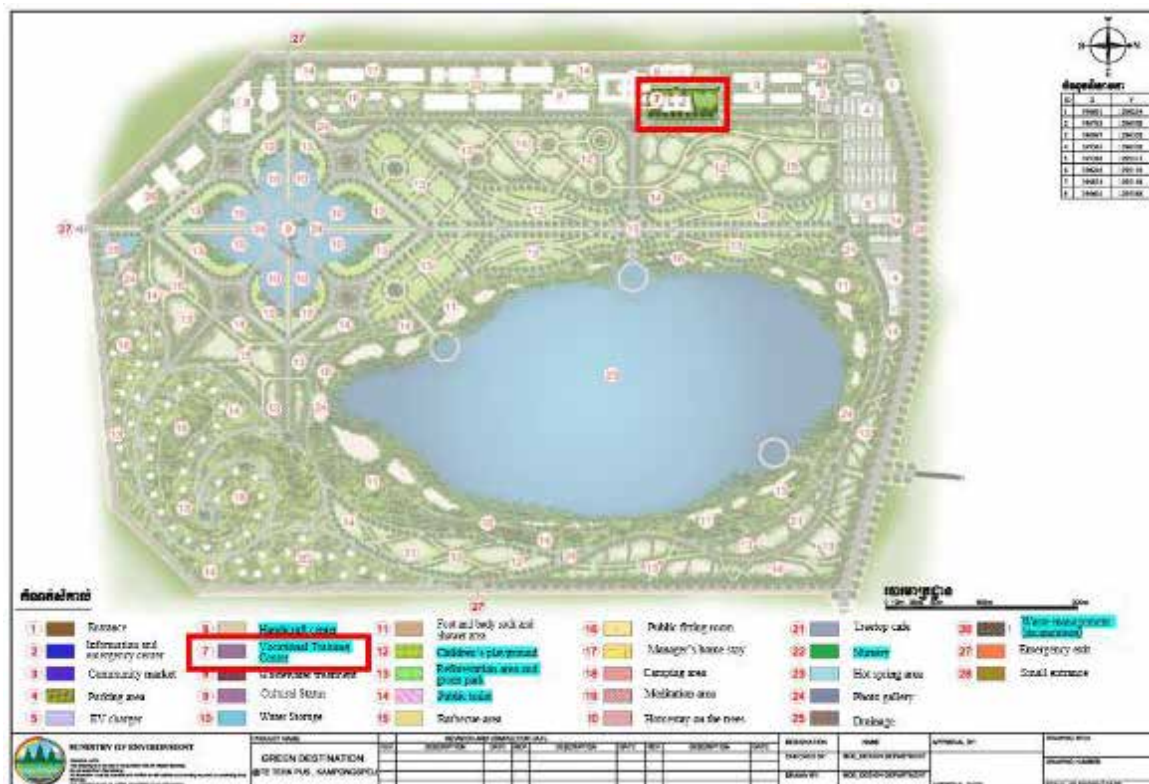


Figure 2. Te Teuk Pus geothermal area masterplan (from the Ministry of Environment) showing the proposed training centre location

BENEFICIARIES

The centre is expected to directly benefit at least 400 beneficiaries, especially indigenous people, youth, and women, through establishing a practical training hub in the area where many of these potentially marginalised populations currently visit for their daily livelihood, targeting eco-tourists. Indirect beneficiaries will include local community groups and surrounding villages, different genders and young people, eco-tourism operators, who will gain from an increase in tourism and enhancement of service quality delivery, which results in stronger local employment opportunities, and increased community capacity to engage in climate-resilient and income-generating activities.

DATA COLLECTION

Input

The investment was designed based on stakeholder consultations, site visits, the main spatial framework for the proposed interventions, and a review of the Master Plan of the Ministry of Environment. As only limited input was available at this stage, additional measurements and supporting data should be gathered during the implementation phases of the project to enable a more detailed assessment and inform subsequent design development of the vocational training centre.

Stakeholder Consultations

A meeting was held on 25/05/2026 at the Te Teuk Pus geothermal site, and the minutes are included in Annex 1.

Site Records

Site visits and discussions were carried out with representatives from the Provincial Hall and relevant provincial authorities of Kampong Speu Province, representatives of Aoral District authorities, and representatives of the Te Teuk Pus geothermal site, together with members of the Indigenous Suoy community.

During the site visit, it was observed that the area proposed for the construction of the vocational training centre is located at a higher ground level compared to the geothermal hot spring area, which is considered an important advantage as it may reduce exposure to seasonal flooding and help provide a more secure and functional setting for future construction and training activities. The area is currently unused and is characterised primarily by native vegetation and natural ground cover. This physical condition suggests that the area has strong potential for development while still allowing the existing natural landscape and environmental character of Teuk Pus to be preserved and integrated into the design.



Figure 3. Aerial view of the proposed location of the training centre (right side), currently unused and covered with natural vegetation

Observations around the hot spring also provided useful insight into current livelihood practices. Women were selling cooked food, small goods, forest resources and medicinal plants in informal stalls located around the geothermal hot spring. This indicates that women already play an active role in the local economy and that the area functions as a small but important point of community-based commerce linked to visitors and tourism activity. These existing practices highlight a practical opportunity for the vocational training centre to strengthen local skills in hospitality, services and product development, basic business management, eco-tourism guidance, and value addition to local resources, so that community members can improve both the quality and the income of what they already do.

Community members also expressed positive and open expectations regarding training and capacity-building opportunities. Local feedback indicated that people are willing to participate in learning activities, especially when such training is clearly connected to community benefits, livelihood improvement and better generations' income opportunities. This strong level of local interest is an encouraging sign for the future operation of the vocational training centre, as it suggests both demand for the proposed training activities and readiness to engage with new skills that can support climate-resilient livelihoods and broader community development.

PROPOSED INTERVENTIONS

The proposed intervention is the establishment of a vocational training centre in Te Teuk Pus as a practical and community-oriented facility that can strengthen climate-resilient livelihoods, support local service delivery, and contribute to the long-term climate adaptivity and management of the eco-tourism landscape.

Design

The proposed design will seek to minimise vegetation loss by avoiding unnecessary tree cutting and, where possible, integrating existing native trees into the site layout to support environmental conservation and improve microclimatic conditions. The design of the building should reflect the environmental conditions and its climate resilience features. Key design principles are expected to include:

- **Climate-responsive layout and orientation:** The building is expected to be positioned based on site-specific analysis of sun path and prevailing wind directions to minimise heat gain, capture cooling breezes, and enhance natural ventilation
- **Passive cooling measures:** including cross-ventilated room arrangements, generous openings, and vertical air movement to improve thermal comfort while limiting reliance on mechanical cooling.
- **Landscape integration:** through selective tree planting and shaded outdoor areas that can reduce heat, improve microclimatic conditions, and support practical outdoor learning activities such as nursery training and environmental education.
- **Architectural familiarity:** by taking reference from typical Cambodian school buildings with deep roof overhangs, simple modular layouts, and well-ventilated teaching spaces suited to educational use.
- **Context-appropriate setting:** as the building is expected to be developed at grade level due to the relatively elevated location of the site and the absence of reported flooding issues, subject to further site verification and technical assessment.

The proposed vocational training centre will incorporate a combination of indoor and outdoor learning spaces to support a diverse range of training activities, as well as social and community functions. Spatial planning will include:

- A multi-purpose training hall to accommodate large lectures, group discussions, meetings, events, and other community activities

- An indoor training space for digital skills training and small group sessions
- An outdoor or semi-covered workshop and demonstration area for hands-on activities such as solar training, sustainable construction, eco-guiding, and cultural or social activities
- A studio or flexible workspace for handicrafts and similar livelihood-related training, as well as cultural exhibitions and performances
- A kitchen or support area to facilitate training activities, events, and community use
- Supporting facilities, including sanitation areas, an administrative office, and storage spaces for equipment and materials

Outdoor and semi-covered areas will be integrated to encourage social interaction and cultural activities while maintaining flexibility and a strong connection to the surrounding environment. The overall layout will prioritise adaptability, climate responsiveness, and ease of maintenance, allowing the facility to accommodate different training programs and community uses over time.



Figure 4. Conceptual perspective of Training Centre

The training centre should be developed with support from qualified professionals, including an architect for spatial planning and an engineer for structural design, to ensure safety, functionality, and compliance with relevant standards. The primary structure is expected to use durable materials such as concrete and masonry because of their stability, long service life, and resilience under local weather conditions. Locally sourced bricks may be incorporated to support cost efficiency and align with familiar construction practices, while selected secondary elements such as shading devices, openings, and facade details may use timber or bamboo to reflect local material availability and cultural character.

To improve resilience and reduce dependence on external infrastructure, the building systems should include:

- **Rainwater harvesting**, using a roof-based collection system with gutters, first-flush filtration, and storage tanks in the range of approximately 5 to 20 m³ for sanitation, cleaning, and irrigation purposes.
- **Basic rooftop solar energy system**, including a modest battery component to provide reliable off-grid electricity for lighting, fans, and charging of essential equipment.
- **Gravity-based water distribution**, where feasible, to keep the system simple, cost-effective, and easier to maintain than pump-dependent alternatives.
- **Integrated off-grid system approach**, using rooftop solar panels to provide electricity for building operations and, where necessary, to power solar-driven pumps for water transfer to elevated storage, helping to minimise operational costs

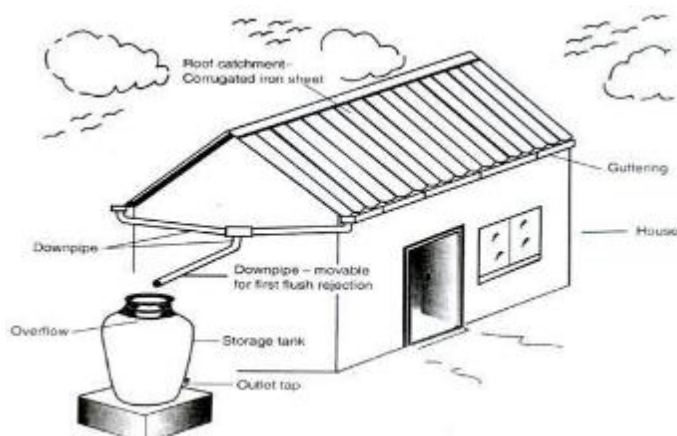


Figure 5. Schematic Diagram of Rooftop Rainwater Harvesting System



Figure 6. Schematic Diagram of Off-grid Solar Power System

Overall, the proposed intervention is intended to create more than a training venue. It aims to provide a durable, climate-responsive, and locally grounded community asset that strengthens practical knowledge, supports nature-based livelihoods, improves eco-tourism readiness, and reinforces the role of local people in the stewardship and economic development of Te Teuk Pus.

Training curricula

Rather than serving only as a physical building, the centre is envisioned as a local skills development hub where youth, women, men and marginalised groups can gain practical knowledge that responds to community needs, local market opportunities, and wider climate adaptation objectives.

The main training functions of the centre are expected to include the following:

- **Forest restoration and nursery operation:** to support ecosystem rehabilitation, biodiversity enhancement, native species planting, and long-term stewardship of the Te Teuk Pus landscape.
- **Infrastructure maintenance:** so that local people can participate in the upkeep of community facilities and basic climate-resilient assets over time.
- **Handcrafts and souvenir production:** to help community members add value to local materials, strengthen small enterprises, and improve income opportunities connected to tourism.
- **Housekeeping and meal-related services:** to improve local capacity in visitor support, hygiene, and small-scale hospitality services linked to eco-tourism activities.
- **Eco-tourism guidance:** including basic visitor management, interpretation of local natural assets, and community-based guiding services.
- **Other vocational skills** to specific groups include youth, women, and marginalized group depend on the training need assessment.

Together, these training activities respond to the reality that local livelihoods are closely linked to natural resources, small-scale tourism, and the need for more diversified and resilient sources of income.

OPERATIONS AND MAINTENANCE

Following the realisation of the intervention, it is essential to ensure adequate operation and maintenance, supported by a dedicated and sustainable budget. This is a critical condition for the long-term performance, resilience, and future viability of the project. Without proper maintenance, the effectiveness of the intervention may decline over time and reduce its intended benefits.

Responsibility for day-to-day maintenance will rest with the local community/CPA, which strengthens local ownership and ensures that the solution remains embedded in the local context. Where necessary, this should be supported by capacity building and clear governance arrangements to enable the community to effectively carry out these responsibilities. Embedding maintenance within local structures is key to sustaining project outcomes over the long term.

The training centre itself is expected to play a key role in supporting ongoing operation and maintenance through continuous skills development and practical training.

BUDGET

Table 34 Budget estimation for Output 1.3

DESCRIPTION	QUANTITY	UNIT PRICE (US\$)	COST (US\$)
Pre-construction studies and site investigations (topographic survey, environmental and flood assessment, site verification, etc.)	1	20,000	20,000
Design consultancy services and experts (ex. architectural, civil/structural, other building services design, construction supervision and project management services), including ESS assessment and report	1	30,000	30,000
Construction of the main training centre building (including site preparation, earthworks, foundations, structure, roofing, and basic finishes)	1	260,000	260,000
Internal fit-out, fixtures, furniture, signage, and other equipment (training rooms, multi-purpose hall, office, storage)	1 set	40,000	40,000
Solar power system (including solar panels, inverter, battery storage, electrical works, and training)	1 set	50,000	50,000
Rainwater harvesting system (including roof catchment, gutters, filtration, storage tanks, and distribution system)	1 set	35,000	35,000
External works and landscaping (including pathways, covered structures, workshop structures, demonstration garden, seating areas, and planting)	1	40,000	40,000
Capacity-building sessions for local communities, emphasising women and youth.	1	35,000	35,000
Participatory Monitoring and maintenance through Community Agreement with CPA	1	100,000	100,000
Project management & supervision – technical coordination, supervision, and reporting	1	60,000	60,000
ESS Consultant for ESS monitoring and documentation	1	10,000	10,000
		TOTAL	680,000

Output 3.1. Te Teuk Pus geothermal area rehabilitated through sediment removal, slope stabilisation, 2 km eco-trail improvements, and 100 units of solar-powered lighting, with indigenous Suoy communities co-managing the process.

INTRODUCTION

Deliverables	• Site investigation and design • Sediment removal from thermal source areas • Slope stabilisation around hot spring zones • Development and improvement of eco-trails • Provision of solar-powered lighting along pathways and key areas • Environmental improvement measures to enhance safety, accessibility, and visitor experience
Beneficiaries	Direct: 23,407 (Women: 8,292) Indirect: 43,591 (Women: 22,432)
Budget	US\$ 1,800,000.00
Location	Te Teuk Pus geothermal area, Trapeang Chour & Ta Sal Communes, Aoral district, Kampong Speu province
CPA	Ko Daun Tey CPA



PROBLEM STATEMENT

Te Teuk Pus is a unique geothermal site of high ecological, cultural, and eco-tourism value, but it is increasingly affected by climate change and environmental degradation. The area faces rising temperatures, erratic rainfall, localised flooding, sedimentation, slope instability, and poor drainage, which are undermining the condition of the hot spring landscape and reducing its safety and attractiveness for visitors. These pressures are compounded by unregulated tourism, weak waste management, and limited basic infrastructure, including inadequate public facilities, poor access conditions, and insufficient site management capacity.

At the same time, surrounding communities, including Indigenous Suoy households, remain highly vulnerable because they depend on climate-sensitive livelihoods such as agriculture, forest resources, wage labour, and small-scale tourism, while facing water scarcity, low skills, and limited income opportunities. Without targeted rehabilitation and climate-resilient improvements, the environmental quality, tourism potential, and livelihood value of Te Teuk Pus will continue to decline.

LOCATION

The proposed intervention is located in the Te Teuk Pus geothermal area in Trapeang Chour & Ta Sal Communes, Aoral District, Kampong Speu Province. Te Teuk Pus lies in the foothills of the Aoral Mountain Range, within a climatically and ecologically sensitive upland landscape that forms part of the wider protected area system of central Cambodia.



Figure 1. Area of Te Teuk Pus geothermal area as circled in RED

The site is nationally significant as the country's only known geothermal hot spring area and is surrounded by semi-evergreen forest, red sandstone terrain, and natural habitats of high ecological and eco-tourism value. Its location within the broader Aoral–Phnum Sruoch landscape also gives it strategic importance for community-based adaptation, watershed protection, biodiversity restoration, and the development of climate-resilient nature tourism.

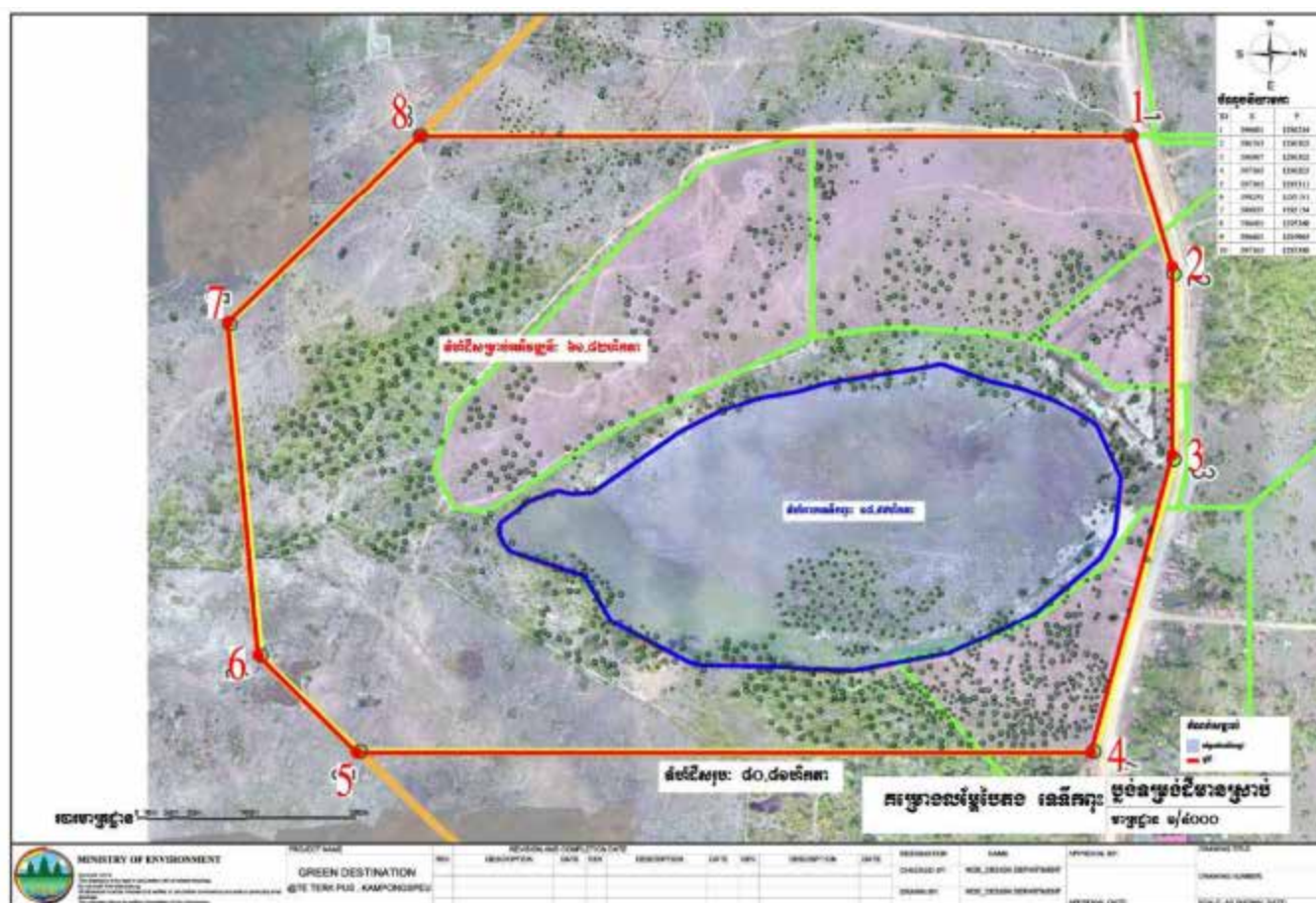


Figure 2. Te Teuk Pus geothermal area

BENEFICIARIES

The intervention will directly benefit an estimated 23,407 people, including approximately 8,292 women, through the rehabilitation of the Te Teuk Pus geothermal area and its surrounding eco-tourism and environmental assets. These beneficiaries include the Indigenous Suoy community and other vulnerable households living in and around the wider target landscape, whose livelihoods depend on climate-sensitive agriculture, small-scale trade, forest resources, and emerging eco-tourism activities. In line with the wider project's inclusion approach, the intervention will also prioritise women, youth, low-income households, informal workers, and persons with disabilities. The rehabilitation works, including sediment removal, slope stabilisation, 2 km of eco-trail improvements, and 100 units of solar-powered lighting, will also strengthen site safety, improve public space, support an existing tourism flow of around 800 visitors per month, and generate wider benefits for nearby communities, local visitors, community-based enterprises, and local authorities through stronger tourism potential and enhanced community participation in site management and stewardship.

DATA COLLECTION

Input

The investment was designed based on stakeholder consultations, site visits, the main spatial framework for the proposed interventions, and a review of the Master Plan of the Ministry of Environment. As only limited input was available at this stage, additional measurements and supporting data should be gathered during the next phases of the project to enable a more detailed assessment and inform subsequent design development.

Stakeholder Consultations

A meeting was held on 25/05/2026 at the Trapeang Chour & Ta Sal Communes, and the minutes are included in Annex 1.

Site Records

Site records consisted of drone photographs and video footage, field pictures, and direct observations made during the site visit, which together provided a broad visual and physical understanding of the existing condition of the area.

These records helped document the overall layout of the site, the condition of key facilities, patterns of use by visitors and local vendors, and the relationship between the main hot spring area and adjacent features.

The observations indicate that the landscape surrounding the site remains partly natural, with thick vegetation extending beyond the main hot spring zone and forming a dense green backdrop around the developed areas. This contrast between natural features and built elements is one of the defining characteristics of the site and is important for future planning and rehabilitation considerations.

At the same time, the vegetation in the thermal area itself is dense and largely natural. From both a biodiversity and landscape perspective, it is not advisable to clear the area entirely. Instead, any intervention should focus on the hot spring sources and their immediate surroundings, where visibility, accessibility, and safety are most relevant. Full-scale clearing would not only reduce ecological value but would also require significant effort and maintenance, making it neither efficient nor desirable.

The main hot spring itself has been formed and enclosed in concrete, and the inspection noted the presence of several additional concrete features that do not appear to serve a clear operational or user-related purpose. Their presence affects the visual quality of the site and suggests that some parts of the area may have developed incrementally without an overall design approach.

Near the entrance, rows of simple makeshift stalls were observed, where residents sell food and other small items, indicating that the site already supports informal livelihood activities linked to visitor presence. Besides the main hot spring, a separate water connection has been arranged to channel flow to another bathing area, showing that the use of the spring has expanded beyond the primary pool and that multiple spaces are currently being used for bathing, recreation and religious manifestation.

Basic amenities are present but remain inadequate. A toilet block with four bathrooms was recorded, yet only two were usable at the time of the visit, and the facility was found to be in very poor sanitary condition, with no water available.

In addition, the site includes two simple shelters built from wood with thatched roofs and hammocks, providing places for rest and informal relaxation. There are also two distinct locations of religious importance, confirming that the site has not only environmental and tourism value, but also cultural and spiritual significance.

Overall, the site records provide an important baseline for understanding existing conditions, current patterns of use, and the key issues that should be addressed through future rehabilitation and improvement measures.



Figure 3. Aerial view of the Te Teuk Pus geothermal area, showing the active thermal source in the foreground. The image illustrates that, while some open patches/springs are still visible, a large part of the area has become overgrown with grass and natural vegetation.

PROPOSED INTERVENTIONS

The following proposed interventions are conceptual in nature and based on preliminary site observations. The exact design, dimensions, and technical specifications will be refined during subsequent detailed site investigations and design development.

The proposed interventions are intended to rehabilitate the Te Teuk Pus geothermal area in a way that improves public access, strengthens site safety, protects ecological functions, and enhances the overall visitor experience while fully recognising the site's cultural and spiritual importance.

The design approach is based on the principle that physical improvements should not overwhelm the natural character of the area, but instead should support more careful, organised, and sustainable use of the site and especially of the geothermal area.

A particularly important consideration is the section of the site that currently serves as a public space for cultural and religious activities. This area should remain clearly respected as a calm and undisturbed zone, with its character preserved and its use protected from unnecessary intrusion. Where appropriate, the circulation pattern of the eco-trail should be arranged so that the main visitor movement is directed away from spaces used for devotion, gathering, and quiet reflection. In this way, the intervention can support tourism development without undermining the cultural values that make the site meaningful to local communities.

As part of this approach, several existing concrete structures that do not serve a clear functional or operational purpose are proposed to be removed or modified as part of the rehabilitation works, with certain elements to be fully removed. This will help improve the visual quality of the site, restore a more natural appearance, and create a clearer and more coherent spatial layout aligned with the overall design approach.

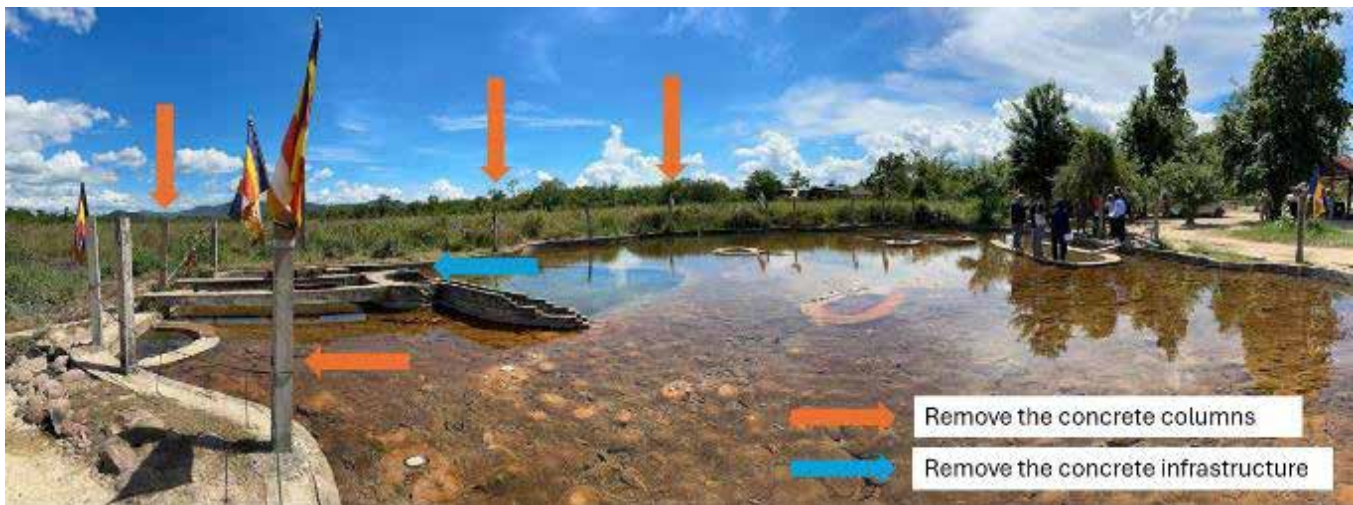


Figure 4. Removal of non-functional concrete structures to enhance the natural character of the site.

To connect the existing geothermal pools and organise movement across the area, an elevated eco-trail is proposed as the central access element. The structure will be formed with a concrete base and a metal or wood supporting frame, while the walking surface will be constructed from wooden planks. This combination of materials is intended to provide durability, structural stability, and a more natural visitor experience that remains visually compatible with the surrounding landscape. The walkway is proposed to be elevated above ground level to provide protection during the rainy season while minimising disturbance to the ground surface. The final elevation height is to be confirmed through further site assessment, including analysis of flood levels, topography, and other relevant site data. This approach reduces direct contact between visitors and the soil, limits localised water impacts along the trail, minimises erosion risk, and reduces disturbance to surrounding vegetation, while allowing natural drainage and ecological processes to continue beneath the walkway.

Selective vegetation management is proposed to be undertaken along with the proposed trail alignment around key access points to create a safer and more legible route through the site. This work is not intended as broad clearance, but as a carefully controlled intervention focused on ensuring safe passage, improving visibility, and guiding visitors toward designated circulation paths. By defining movement more clearly, the project will help reduce random foot traffic, minimise trampling of sensitive groundcover, and protect surrounding ecological zones from avoidable disturbance. The management of vegetation is therefore both a practical and an environmental measure, helping to balance accessibility with conservation.

Since the elevated walkway or boardwalk is of limited height, guardrails or handrails are not currently envisaged as necessary. Instead, low-profile edging will be installed along the walkway to provide clear edge definition and basic lateral guidance while maintaining an open and lightweight character. The elevated walkway should be routed so that it passes by all four identified key geothermal pools, allowing each one to be experienced as part of a connected route

rather than as isolated points within the site.

To improve safety and accessibility during low-light conditions, the trail system will also be equipped with low-energy solar-powered lighting. This is envisaged to include stand-alone solar poles or bollard lights, integrated solar panels, battery storage, and warm-coloured lighting to create a comfortable atmosphere while limiting harsh visual impacts on the site. The lighting system should switch on automatically as darkness begins, ensuring consistent illumination during evening and nighttime conditions. An approximate spacing of 20 m between solar lights is considered appropriate at this stage as an initial design assumption. The final number and spacing of lighting units will be confirmed once the total length of the eco-trail and the specifications of the selected solar lighting system (e.g., light output, coverage, and mounting height) have been determined. Because these systems operate independently from the electricity grid, they are expected to keep operating costs and maintenance requirements relatively low while still providing a practical improvement in safety, navigation, and visitor comfort.



Figure 5. Conceptual illustration of a raised wooden pathway through the geothermal area at Te Teuk Pus. The meandering boardwalk connects thermal pools while maintaining the natural vegetation dominated by tall grasses and reeds. Solar lighting is integrated to ensure safe access with minimal environmental impact. The pathway is slightly elevated (height to be determined during detailed design) and includes low wooden edges for guidance and protection of surrounding vegetation.

In addition to providing movement between the pools, the eco-trail should create opportunities for visitors to pause and engage with the geothermal features in a controlled and comfortable manner. At selected locations, the design should incorporate areas where visitors can stop, sit, and place their feet and legs in the water without entering the pools directly. The intention is to create a safer and more orderly form of interaction with the geothermal water, avoiding uncontrolled bathing within the source areas while still allowing visitors to enjoy the sensory and recreational value of the site. These areas are proposed to be developed as wooden sitting structures supported with framing constructed using timber or metal, where necessary for increased durability, and positioned as part of the elevated walkway system. They may include a simple cover or roof element that protects visitors from direct sun exposure while still allowing sufficient airflow so that the space remains open, comfortable, and appropriate to the tropical climate.

The intervention also includes focused improvement works at approximately four existing geothermal source locations rather than across the entire lake area, which helps concentrate efforts where access is most needed while avoiding unnecessary modification of the broader site. At each of these points, the area will be carefully opened, stabilised, and improved to provide better access while maintaining water quality and protecting surrounding ecological conditions. Around each source, the terrain will be reshaped to form a gentle slope of approximately 1:10, which will help reduce runoff, improve infiltration, support local stability, and limit the transport of sediment into the spring areas.

The elevated eco-trail is envisaged to extend connectivity beyond the geothermal pools and link the main trail with the

nursery, ecological reforestation areas, and gardens. This additional trail segment will broaden the function of the site by connecting geothermal tourism with restoration, learning, and environmental awareness, thereby strengthening the site's role as both a destination and a demonstration area for sustainable land management.

This work is not intended as broad clearance, but as a carefully controlled intervention focused on ensuring safe passage, improving visibility, and guiding visitors toward designated circulation paths. By defining movement more clearly, the project will help reduce random foot traffic, minimise trampling of sensitive groundcover, and protect surrounding ecological zones from avoidable disturbance. The management of vegetation is therefore both a practical and an environmental measure, helping to balance accessibility with conservation.

While the current intervention focuses on minimally targeted and selective vegetation management, it is recognised that pathways could be adjusted or modestly expanded in the future if visitor demand increases or if improved accessibility is required. Any such adaptations would need to remain carefully aligned with the ecological sensitivity of the area. From a nature-based solutions and biodiversity perspective, it is essential to preserve the natural character of the landscape as much as possible. Maintaining a predominantly undisturbed and natural environment not only supports ecosystem health and resilience but also enhances the attractiveness of the site for eco-tourism, where visitors typically value authentic, nature-rich experiences over more intensively modified settings.

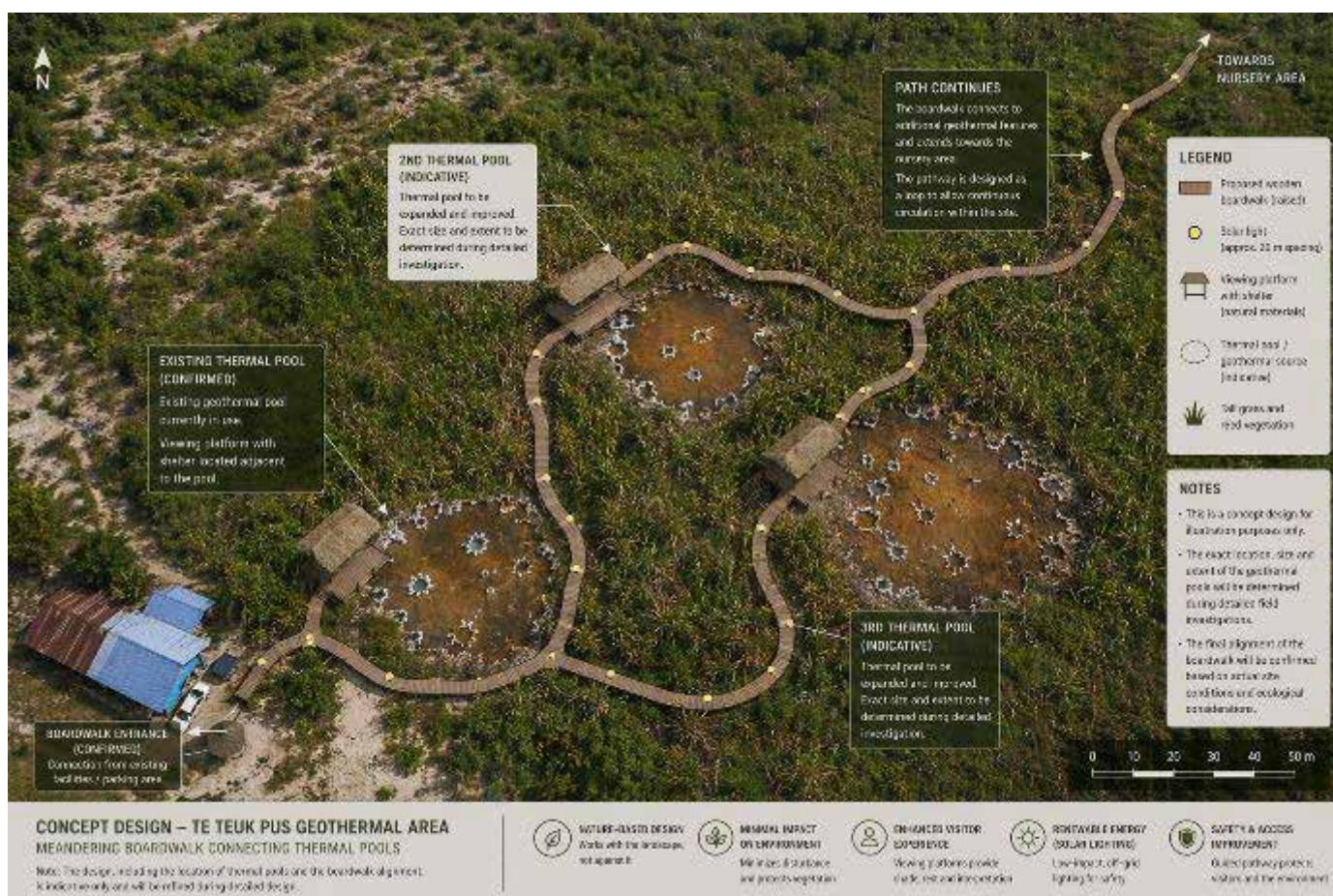


Figure 6. Concept design of a meandering boardwalk connecting geothermal pools at Te Teuk Pus. The pathway is aligned with the existing thermal pool (bottom left) and continues via additional pools, forming a loop and extending towards the nursery area. Viewing platforms with shelters are positioned adjacent to the pools. The location and extent of the additional thermal pools are indicative and will be confirmed during detailed field investigations. The final alignment of the boardwalk will be adjusted accordingly.

At the site entrance, which currently functions as the main sales and entry point, the intervention will provide basic visitor facilities to improve orientation and support better site management. These upgrades should include information boards explaining ecological values, the geothermal water system, and appropriate trail use, together with simple orientation features and a clearer connection to the start of the eco-trail.

Taken together, the proposed interventions combine nature-based solutions, low-maintenance infrastructure, and educational features in a single integrated design approach. As such, the eco-trail will function not only as a practical route connecting the key features of the geothermal area, but also as a visible example of sustainable, climate-resilient site development that respects landscape character, supports community use, and encourages more responsible eco-tourism.

OPERATIONS AND MAINTENANCE

Following the implementation of the intervention, it is essential to ensure adequate operation and maintenance, supported by a dedicated and sustainable budget. This is a critical condition for the long-term performance, resilience, and future viability of the project. Without proper maintenance, the effectiveness of the intervention may decline over time and reduce its intended benefits.

Responsibility for day-to-day maintenance is expected to rest primarily with the local community/CPA, which strengthens local ownership and ensures that the solution remains embedded in the local context. Where necessary, this should be supported by capacity building and clear governance arrangements to enable the community to effectively carry out these responsibilities. Relevant training and capacity-building activities will be supported through the vocational training centre (Output 1.3). Embedding maintenance within local structures is key to sustaining project outcomes over the long term.

BUDGET

Table 35 Budget estimation for Output 3.1

DESCRIPTION	QUANTITY	UNIT PRICE (US\$)	COST (US\$)
Site investigation – surveys, assessments, and documentation	1	60,000	60,000
Consultancy services and detailed design to prepare design and technical documentation, including ESS assessment and report	1	70,000	70,000
Sediment removal & site preparation – removal of sediment and selective clearing at geothermal source areas (At least 6,000 m ³ (3 ha with a depth of 20 cm) of sediment removal, and requiring excavators, dumpers, operators and gas). <i>NOTE: However, volume may be increased after the detailed assessment during the project implementation stage.</i>	1	600,000	600,000
Slope stabilisation & drainage – terrain reshaping, erosion control, and drainage improvements around geothermal zones	1	100,000	100,000
Eco-trail / boardwalk development (~2 km) – development of raised pathways connecting geothermal features	2 km	160,000	320,000
Viewing platforms – small platforms and simple shelters to facilitate safe and controlled interaction with geothermal sources	3	30,000	90,000
Solar-powered lighting – provision and installation of solar lighting systems along pathways	100	1,000	100,000
Selective vegetation management – controlled clearing to define pathways, improve visibility, and limit disturbance	1	100,000	100,000
Removal and selective demolition of non-functional concrete structures	1	100,000	100,000
Entrance area improvements – basic orientation features and integration with access to the eco-trail	1	80,000	80,000
Project management & supervision – technical coordination, supervision, and reporting	1	70,000	70,000
Participatory Monitoring and maintenance through Community Agreement with CPA	1	100,000	100,000
ESS Consultant for ESS monitoring and documentation	1	10,000	10,000
TOTAL			1,800,000

Output 3.2. Biodiversity corridor established within 57 hectares, linking degraded forest patches with native reforestation using nursery-supported species of ecological and livelihood value.

INTRODUCTION

Deliverables	• Establishment of biodiversity corridor (~57 ha) • Nursery establishment and seedling production • Native reforestation using species of ecological and livelihood value • Soil preparation and planting works • Maintenance of planted areas • Water supply development for the nursery
Direct Beneficiaries	Direct: 23,407 (Women: 8,292)
Budget	US\$ 650,000.00
Location	Te Teuk Pus geothermal area, Trapeang Chour & Ta Sal Communes, Aoral district, Kampong Speu province
CPA	Ko Daun Tey CPA



PROBLEM STATEMENT

The proposed biodiversity corridor responds to accelerating forest degradation, habitat fragmentation, and declining ecosystem services in the Te Teuk Pus landscape. Climate change, combined with unsustainable land use, weakens watershed functions, increases soil erosion, reduces biodiversity, and undermines the ecological stability needed to support local livelihoods and ecotourism. Without targeted restoration, the continued loss of native vegetation and habitat connectivity will further increase vulnerability to drought, heat stress, sedimentation, and biodiversity decline across this sensitive protected area landscape.

LOCATION

This intervention is in the Te Teuk Pus geothermal area in Trapeang Chour & Ta Sal Communes, Aoral District, Kampong Speu Province. The site lies within a climate-sensitive upland landscape of ecological importance, where degraded forest patches around the geothermal area will be reconnected through native reforestation to strengthen biodiversity, watershed functions, and ecosystem resilience.

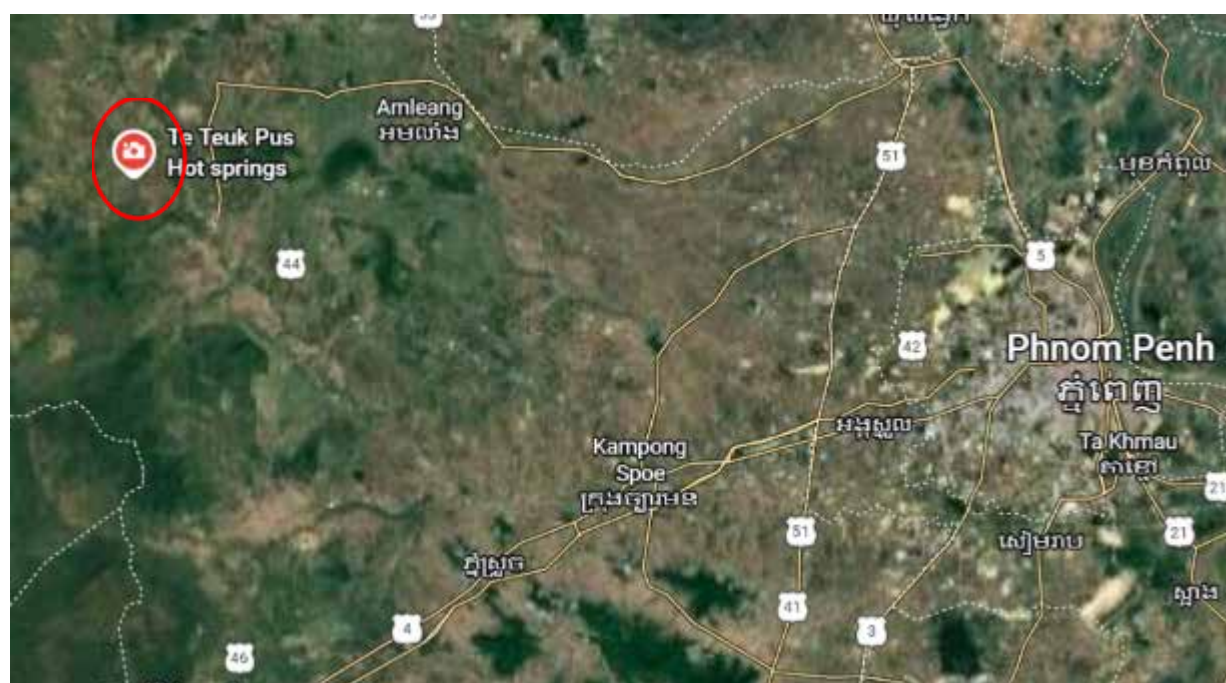


Figure 1. Area of Te Teuk Pus geothermal area as circled in RED

BENEFICIARIES

The primary beneficiaries are vulnerable communities living in and around Te Teuk Pus and the wider Aoral landscape, including forest-dependent households, women, youth, and Indigenous Suoy community members. These groups will benefit from improved ecosystem services, strengthened environmental protection, reduced climate-related risks, and enhanced opportunities for sustainable livelihoods linked to ecotourism, native species restoration, and natural resource stewardship. The intervention will also generate broader benefits for surrounding communities and local institutions through improved landscape connectivity and resilience.

DATA COLLECTION

Input

The investment was designed based on stakeholder consultations, site visits, the main spatial framework for the proposed interventions, and a review of the Master Plan of the Ministry of Environment. As only limited input was available at this stage, additional measurements and supporting data should be collected in the next phases of the project to enable a more detailed assessment and to inform subsequent design development.

Stakeholder Consultations

A meeting was held on 25/05/2026 at the Ko Daun Tey Community, and the minutes are included in Annex 1.

Site Records

Site visits and consultations were carried out with the Provincial Hall and relevant provincial authorities in Kampong Speu Province, representatives of Aoral District authorities and the Te Teuk Pus geothermal site, and members of the Indigenous Suoy community. These discussions helped confirm the proposed location and practical considerations for establishing the nursery and guiding future restoration works.

In parallel, drone-based aerial imagery was collected during the field visit to provide a comprehensive overview of the terrain conditions, vegetation patterns, and spatial configuration of the proposed corridor area.

Community members explained that there is currently no locally available skilled person with technical experience in nursery management, including seed collection from natural areas, identification of suitable native species, seedling preparation, and planting methods. This capacity gap should be addressed during implementation through technical support and hands-on training.

The proposed nursery area is located on undeveloped land at a higher elevation than the existing geothermal hot spring area. This higher ground is considered more suitable because it reduces exposure to flooding and provides more stable conditions for nursery establishment. At the same time, stakeholders noted that nursery development should, as far as possible, avoid unnecessary clearance of existing native vegetation. For this reason, site selection within the proposed area should prioritise spaces that are already open or only lightly vegetated.



Figure 2. Overview of the current site conditions at Te Teuk Pus. The left side of the image shows the area where the biodiversity corridor is proposed, characterised by fragmented and partly degraded vegetation. The right side shows the geothermal area, with more open land and existing site use.

The proposed area for forest restoration contains scattered vegetation rather than fully cleared land. As a result, restoration planting should focus first on open spaces where native seedlings can be introduced with minimal disturbance to existing natural cover. This approach would support ecological restoration while respecting the current site conditions and preserving as much native vegetation as possible during both nursery establishment and subsequent planting activities.

For the ecological reforestation, the project-funded garden should be planted prioritising native fruit species, ornamental and pollinator-friendly flowers, medicinal plants, and local culinary herbs and seasonings.

PROPOSED INTERVENTIONS

The proposed intervention focuses on establishing a biodiversity corridor over approximately 57 hectares through native forest restoration, nursery development, and landscape improvement around Te Teuk Pus.

The intervention is designed to reconnect degraded forest patches, strengthen ecosystem functions, enhance habitat quality, and support the long-term climate resilience of the area.

The approach combines practical restoration measures with site-sensitive planning so that ecological recovery, visual quality, accessibility, and community use are addressed together. In parallel, the landscape around the vocational training centre and nursery centre will be developed as a semi-open, park-like environment with a public space and a playground that balances shade, comfort, biodiversity, clear sightlines, and ease of access.

The intervention will include the following main steps of forest restoration:

- **Identification of areas suitable for planting:** A detailed field-based assessment must be undertaken to identify priority planting zones within the restoration area. This process will consider existing vegetation cover, slope conditions, soil characteristics, drainage patterns, accessibility, and the need to minimise disturbance to intact native vegetation. In line with the site observations, planting will prioritise open or lightly vegetated areas, while preserving scattered existing vegetation wherever feasible.
- **Collection, storage, and germination of seeds from native species:** Seeds will be collected from appropriate native species found within or near the local landscape to maintain ecological suitability and improve restoration success. The process will include seed selection, cleaning, storage under suitable conditions, and germination using methods adapted to the requirements of different species.
- **Operation of the nursery and maintenance of seedlings:** A nursery will be established in the designated higher-elevation area, which is more suitable due to lower flood exposure. The nursery will support seedling development, hardening, watering, shading, sorting, and general plant care until seedlings are ready for field planting. Nursery management will also include simple operational systems for seed tracking, species separation, survival monitoring, and replacement planning to improve the quality and reliability of planting stock.
- **Hydrogeological investigations to secure a reliable nursery water source:** Hydrogeological studies should be carried out to identify and assess several potential locations where wells or deep boreholes could be developed to provide sufficient water for the nursery throughout the entire year. These investigations should consider groundwater availability, seasonal variation, water quality, sustainable abstraction potential, drilling feasibility, and the distance to the proposed nursery area, so that the most suitable and reliable water supply option can be selected for detailed design and implementation.
- **Soil preparation, including decompaction, opening of planting pits, and fertilisation:** Before planting, the selected sites will be prepared to improve seedling establishment and long-term growth. Depending on site conditions, this may include light decompaction of soil, clearing only where necessary, digging planting pits of appropriate size, and applying organic or other suitable fertilisation measures to improve soil conditions. Soil preparation will be adapted to local terrain and erosion risks so that restoration works remain environmentally sensitive.
- **Planting of seedlings with attention to spacing and species richness:** Seedlings will be planted using a mixed-species approach that reflects ecological suitability, structural diversity, and restoration objectives. Planting design will consider spacing requirements, species combinations, future canopy development, and the need to promote both biodiversity and resilience. Species of ecological and livelihood value, such as bamboo, rattan, fruit-bearing trees, medicinal plants, and other appropriate native species, may be included where aligned with the restoration concept and local landscape conditions. Planting schemes will also be aligned with the vegetation in the surrounding landscape to create ecological continuity and enable a corridor function, thereby supporting the movement and persistence of local flora and fauna species within the area. Water availability for seedling development is critical for successful forest restoration. Seedling planting should take place at the beginning of the rainy season.
- **Plantation maintenance, including crown weeding, fertilisation, irrigation, and control of ants and other insects:** Post-planting maintenance will be essential to ensure survival and healthy early growth. This will include regular inspection of planted areas, removal of competing weeds around seedlings, supplementary fertilisation where needed, irrigation during dry periods, and protection against ants and other insects or pests that may affect establishment. Replanting failed seedlings should also be included during the maintenance phase to ensure that restoration targets are achieved. The need for irrigation in the different planted areas must be assessed on a case-by-case basis, since the dry season is long and the goal is to minimise seedling mortality and the need for replacements. Where necessary, appropriate irrigation techniques can be applied, depending on local conditions and site-specific requirements.

Given the current lack of local technical expertise in the above forest restoration steps, specialised guidance and hands-on training will be necessary during implementation. These will be supported through the vocational training centre established under Outcome 1.3.

Landscape development around the nursery

The landscape around the nursery (near the vocational training centre under Output 1.3) will be developed as a semi-open, park-like environment that supports learning, demonstration, community use, and ecological enhancement.

The intention is to create an attractive and functional setting that remains closely connected to the natural character of Te Teuk Pus while improving user comfort and safety. The design should avoid overly dense planting immediately around key activity spaces so that clear sightlines are maintained, movement is intuitive, and the area feels open and welcoming.

- Shade trees will be positioned strategically to provide thermal comfort along paths, near gathering spaces, and around outdoor learning areas without creating visually closed or unsafe spaces.
- Low and medium-height native planting will be used to enrich biodiversity, frame spaces, and demonstrate local species, while avoiding obstruction of circulation routes and important views.
- Accessible paths and open circulation areas will connect to the nursery, training spaces, and surrounding outdoor areas in a legible and inclusive way.
- Demonstration planting areas may be included to show different native species, planting techniques, and maintenance approaches for training and awareness purposes.
- Simple seating, resting points, and shaded outdoor spaces may be integrated to support training activities, community meetings, and visitor use.
- Planting and surface treatment should respond to drainage and erosion conditions so that the landscape remains robust during heavy rainfall and is practical to maintain over time.



Figure 3. Aerial view of the proposed corridor area, illustrating a patchwork of open land, dense vegetation, and disturbed areas. This variation underpins the proposed restoration strategy, focusing on selective planting and maintaining existing vegetation structure.

Overall, the proposed intervention combines restoration planning, site preparation, planting, and native species propagation and long-term maintenance into a single coherent approach for biodiversity recovery in Te Teuk Pus. By linking the biodiversity corridor with a functioning nursery and a well-designed training environment, the intervention can also strengthen local skills development, support future restoration efforts, and create a visible demonstration of climate-resilient and community-oriented landscape restoration in Kampong Speu Province.

Indicative planting density and spatial distribution:

Given the total intervention area of approximately 57 hectares, the actual planting density will vary across the site depending on functional zoning, including forest restoration areas, existing vegetation, as well as space required for gardens, buildings, paths, and access roads.

For the core restoration zones, an indicative planting density in the range of 600 to 1,000 seedlings per hectare is considered appropriate, depending on species composition, site conditions, and natural regeneration potential. In areas where scattered vegetation is already present, planting will primarily focus on enrichment, resulting in lower effective planting densities.

In the surroundings of the nursery, vocational training centre, and main circulation areas, a more open landscape structure will be applied, with lower tree densities (approximately 80–250 trees per hectare) combined with shrubs and understory vegetation to maintain visibility, accessibility, and user safety.

It is expected that only part of the total 57 hectares will be actively planted at higher densities, while a significant portion of the area will remain as preserved vegetation, infrastructure, or open and lightly vegetated spaces. On this basis, the overall planting effort is indicatively estimated in the range of 20,000 to 40,000 seedlings. The exact extent and intensity of planting will be refined based on detailed site assessment and natural regeneration potential.

This approach ensures a gradual and ecologically responsive restoration process, allowing for natural regeneration where possible, while maintaining flexibility to adapt planting intensity to local conditions and land use requirements.

OPERATIONS AND MAINTENANCE

Following the realisation of the intervention, it is essential to ensure adequate operation and maintenance, supported by a dedicated and sustainable budget. This is a critical condition for the long-term performance, resilience, and future viability of the project. Without proper maintenance, the effectiveness of the intervention may decline over time and reduce its intended benefits.

Responsibility for day-to-day maintenance will rest with the local community/CPA, which strengthens local ownership and ensures that the solution remains embedded in the local context. Where necessary, this should be supported by capacity building and clear governance arrangements to enable the community to effectively carry out these responsibilities. Relevant skills development and practical training are expected to be supported through the vocational training centre (Output 1.3), where appropriate. Embedding maintenance within local structures is key to sustaining project outcomes over the long term.

BUDGET

Table 36 Budget estimation for Output 3.2

DESCRIPTION	QUANTITY	UNIT PRICE (US\$)	COST (US\$)
Site investigation and restoration planning, including identification of the priority restoration zones and hydrogeological investigation	1	30,000	30,000
Consultancy services and detailed design, including ESS assessment and report	1	50,000	50,000
Ecosystem-based Adaptation Management Plan (EbAMP) preparation	1	20,000	20,000
Establishment of nursery facilities and seedling production systems, including water supply systems	1	60,000	60,000
Collection and propagation of native species	1	20,000	20,000
Soil preparation and planting works	1	30,000	30,000
Native reforestation and enrichment planting	30,000 seedlings	9	270,000
Landscape development (nursery and training surroundings, including a garden, public space, and playground)	1	60,000	60,000
Participatory monitoring, maintenance, and protection of planted areas through the Community Agreement with CPA	1	100,000	100,000
ESS Consultant for ESS monitoring and documentation	1	10,000	10,000
		TOTAL	650,000

Output 3.3. At least 10 village ponds rehabilitated with climate-resilient design features (e.g., raised bunds, sediment traps) to support year-round water access for agriculture and domestic use.

INTRODUCTION

Deliverables	• The pilot technical design for the pond rehabilitation • Rehabilitation of at least 10 village ponds • Guide for pond rehabilitation and maintenance
Beneficiaries	Direct: 4,300 (Women: 2,200) Indirect: 43,591 (Women: 22,432)
Budget	US\$ 250,000.00
Location	Aoral district, Kampong Speu province
CPA	8 Community Protected Areas (CPAs) in Aoral district



PROBLEM STATEMENT

Aoral District faces increasing climate stress driven by prolonged dry periods, erratic rainfall, seasonal flooding, and recurring forest fires, all of which undermine ecosystem stability, water access, agriculture and livestock farming. Although the district has important water resources, especially during the rainy season, the climate has been changing in recent years, and infrastructures related to rainwater harvesting, storage, and use are deteriorating and require rehabilitation interventions, with particular attention to village ponds.

These ponds are essential for domestic use and livestock watering, especially during the dry season, when water availability is limited. Village ponds are also valuable water sources throughout the rainy season, when rice fields are under cultivation and livestock must be kept in designated and confined areas with adequate access to water and feed to prevent crop damage caused by trampling and grazing.

The rehabilitation of 10 village ponds located near households or public facilities is one of the priority interventions to address deteriorated infrastructure related to rainwater harvesting, storage, and use.

LOCATION

This intervention will be implemented in Aoral District, Kampong Speu Province. Aoral is a predominantly rural and forested district in the northwestern part of the province and forms part of an ecologically important landscape linked to the Central Cardamom Protected Forest and the Aoral Wildlife Sanctuary. The district is highly exposed to drought, water scarcity, and forest fire risks, while many villages depend on small-scale agriculture, livestock rearing and natural resources for their livelihoods. The rehabilitation of at least 10 village ponds will target priority communities where year-round water access is constrained and where climate-resilient water storage can directly support livestock farming.

BENEFICIARIES

The direct beneficiaries of this output are rural village households in Aoral District that rely on village ponds for domestic use and livestock farming and are affected by seasonal water shortages without or with dysfunctional water supply systems.

The intervention aims to restore and extend the functional water retention period of village ponds from the current short-term supply to a more reliable seasonal resource. By improving year-round access to water for livestock farming, agriculture, and limited domestic use where water quality permits, the rehabilitated ponds will strengthen resilience, reduce daily burdens related to water collection, and support more stable livelihoods across the target villages.

DATA COLLECTION

Input

The investment was designed based on stakeholder consultations, site visits, and the main spatial framework for the proposed interventions, and drone-based aerial imagery and site pictures taken during field visits.

Stakeholder Consultations

A meeting was held on 26/05/2026 at the Ta Sal Commune, and the minutes are included in Annex 1.

Site Records

Site verification and field consultations for this output were undertaken with representatives of the Provincial Hall and relevant provincial authorities in Kampong Speu Province, representatives of Aoral District authorities, and representatives of the local community.

These exchanges provided important local context on the current function of the ponds, their infrastructure and

seasonal limitations, and their continuing relevance for rural livelihoods, especially on livestock watering. Community members explained that the rainy season in the area generally extends from June to September or October, equivalent to roughly four months. They also mentioned that the pond fills mainly during the rainy season and that it holds a meaningful volume of water for around two months of the year. According to local accounts, the pond historically retained a much larger volume of water for a longer period of four months and previously served not only for livestock needs but also for certain household uses. In recent years, however, water retention has declined significantly, and the pond is now used primarily as a short-term water source for livestock watering. This change was consistently described as a visible sign of reduced water availability and weakening seasonal storage capacity.

During the rainy season, livestock should be confined near residential areas to prevent their access to the rice fields, which are in a critical stage of development and highly susceptible to damage from trampling and grazing. For the remainder of the year, animals are generally allowed to move more freely in search of grazing areas and alternative water sources.

The availability of village ponds in improved conditions, enabling higher water storage capacity and prolonged retention, would represent a significant gain for the communities. Local explanations on climate change and seasonal questions regarding water availability highlighted the pond's relevance, especially in rural settings where even temporary access to water can reduce pressure on households, support animal health, and help communities manage agricultural activities more effectively.

From field observations, the pond is ground-covered by vegetation and appears to be at least three meters deep, which suggests that it may still have useful storage potential if appropriately rehabilitated and managed. Some trees were also observed around the perimeter and on sections of the side slopes. At the same time, much of the slope surface was not covered by stabilising vegetation or structures, which may leave parts of the pond vulnerable to erosion and gradual degradation. These visual conditions suggest that the pond is currently functioning below its former capacity and would benefit from rehabilitation measures that improve both water retention and slope condition. A manual water pumping system is installed at the site, but is currently not operational, which was previously used to lift water from the lower part of the pond to ground level. The pond is not fenced, and animal tracks are observed in the pond access area, indicating that livestock access the water directly.



Figure 1. Aerial view of the pond



Figure 2. Side view of the pond



Figure 3. Manual water-pump mechanism installed at the pond site

PROPOSED INTERVENTIONS

The proposed intervention consists of a pilot technical design for the rehabilitation of a community pond using climate-resilient and fit-for-purpose design features tailored to actual local use. The objective is not to overdesign the site, but to restore and improve its capacity to serve as a reliable seasonal water source for livestock for a period longer than the current two months, while also supporting agricultural use and, where water quality allows, limited household use, while creating a practical model that can later be replicated and adapted for other village community ponds in Aoral District. The intervention will therefore adopt a pragmatic and demand-driven approach to infrastructure and land use, ensuring that the rehabilitation responds directly to the pond's present function, physical condition, and operational importance to the community.

Given that the pond objective is primarily for domestic use and livestock watering, the design approach will focus on simple, robust, and low-cost measures rather than heavy permanent infrastructure. The proposition aims to improve water retention, slope stability, and water quality while keeping maintenance requirements manageable for the local community. This is particularly important in isolated rural locations where complex systems are difficult to maintain and where seasonal functionality is more appropriate than expensive all-year engineering solutions. At the same time, the intervention will consider opportunities to improve water quality so that, where feasible, the pond water can support safe secondary household uses such as washing and cleaning. By concentrating on efficiency, functionality, and ease of upkeep, the pilot can demonstrate how modest rehabilitation measures can significantly increase the usefulness and resilience of a small rural water body.

A central element of the intervention will be selective pond clearing and reshaping. Existing floating aquatic biomass and excessive overgrowth will be manually removed from the pond rather than killed in place. This approach is preferred because leaving dead biomass inside the pond would increase sludge accumulation, reduce effective storage, and further degrade water quality over time. At the same time, the rehabilitation will not aim to eliminate all vegetation. A limited proportion of ecological cover, approximately 20 to 30%, may be retained in carefully selected areas to provide environmental balance and help reduce excessive exposure, while avoiding widespread vegetation that would contribute to evapotranspiration, oxygen depletion, or obstruction of storage capacity. This balance between clearing and retention is intended to improve the pond's hydraulic performance without stripping away all ecological value.

Rather than treating the pond as a single uniform basin, the rehabilitation concept will organise it into three distinct functional zones, each responding to a specific operational need. This zoning approach can improve the pond's overall performance while keeping the layout understandable and manageable for local users.

- **Deep open water and retention zone:** The central part of the pond will function as the main water storage area. This zone should remain relatively open, with minimal vegetation, to maximise usable volume and preserve a deeper body of stored water for the longest possible period. Deepening the pond is recommended to improve water storage capacity.
- **Treatment zone:** One side of the pond can be designed as a smaller treatment area incorporating reeds, wetland plants, or one to two floating wetlands. This zone would support natural improvement of water quality through plant roots and microbial processes, including nutrient uptake and localised filtration, while occupying only a limited portion of the pond.
- **Buffer zone:** The establishment and maintenance of a buffer zone of native vegetation around the edge of the pond is essential for conserving both water quality and quantity. Native vegetation acts as a natural filter, reducing sediment and nutrient runoff and the entry of agrochemicals into the water body. Importantly, the vegetative buffer promotes groundwater recharge and helps reduce evapotranspiration rates by providing shade and creating a more humid microclimate around the pond. These factors contribute to maintaining higher water levels and extending the period during which water is retained in the pond. In addition, native vegetation stabilises pond banks and supports local biodiversity, further enhancing the ecological sustainability of the system. This vegetative buffer zone can always include fruit-bearing species of local interest. The buffer zone of the pond must be fenced with a specific entrance for maintenance.

Animal access to the pond should be avoided. Allowing animals to enter, even in a specific area, can negatively impact the maintenance and sustainability of the pond. Animal trampling can damage and destabilise the pond banks, leading to increased erosion and sedimentation. This process not only reduces the effective water storage capacity of the pond but also impairs the establishment and maintenance of protective vegetation around the edges. Additionally, animal presence can degrade water quality through direct contamination with livestock urine and faeces and increased turbidity, compromising the ecological balance and long-term functionality of the pond.

Ideally, water should be pumped from the pond to an external trough or watering point located outside the fenced area. In this context, the existing manual water extraction system should be maintained and remain in use. Alternatively, a solar-powered pump could be installed to facilitate water extraction from the pond and its distribution to the troughs.

The design will also consider the pond's bottom condition and seepage behaviour. If the pond is already retaining water adequately, no additional sealing will be introduced. However, if assessment during design development shows that the soil is too permeable and contributes significantly to water loss, simple natural sealing measures may be applied, such as the placement of a clay layer or controlled compaction through trampling. This approach keeps the intervention proportionate to the actual problem and avoids unnecessary construction costs. In the same spirit, slope protection will rely on locally available and low-cost materials where possible. Bamboo or timber can be used as a benching and slope-stabilisation measure, helping to reinforce critical edges and reduce erosion while remaining suitable for community-based maintenance. Simple sediment traps or silt control measures may also be introduced where runoff enters the pond, in order to reduce siltation and extend the useful storage life of the pond.

The pilot intervention is intended to serve not only as a site-specific rehabilitation measure, but also as a practical demonstration model for wider application. Lessons from the technical design, implementation sequence, maintenance requirements, and observed performance can be used to guide similar rehabilitation of other community ponds in the climate-vulnerable districts. This replication value is important because several ponds face similar issues of reduced storage, aquatic vegetation overgrowth, unstable access points, and limited seasonal usefulness. A tested pilot can therefore help local authorities and communities move from isolated maintenance actions to a more structured and climate-responsive pond rehabilitation approach.

In practical terms, the proposed intervention will prioritise the following measures for reconfiguration of the pond into storage, treatment, and controlled water abstraction zones:

- Manual removal and clearing of excessive floating biomass and obstructive vegetation.

- Retention of limited ecological patches in selected areas to preserve environmental function without compromising storage.
- Use of wetland plants or small floating wetlands to support passive water quality improvement.
- Application of natural bottom compaction or clay sealing only where needed, based on actual infiltration conditions.
- Use of bamboo and other appropriate local materials for benching and slope stability.
- Provision of raised or reinforced bunds/embankments where required.
- Installation of simple sediment traps or silt control measures where appropriate.
- Preparation of a pilot technical design that can be adapted and multiplied across other community ponds.

Overall, the proposed intervention is designed to be realistic, affordable, and adapted to seasonal local needs. It recognises that even a pond used intensively for only a limited part of the year can still play an important role in livestock management, rice fields and household resilience. By improving the pond's functionality through targeted climate-resilient design measures, the intervention aims to extend the duration of usable water storage, reduce further degradation, and provide a replicable example of small-scale rural adaptation infrastructure that is both technically sound and locally manageable.

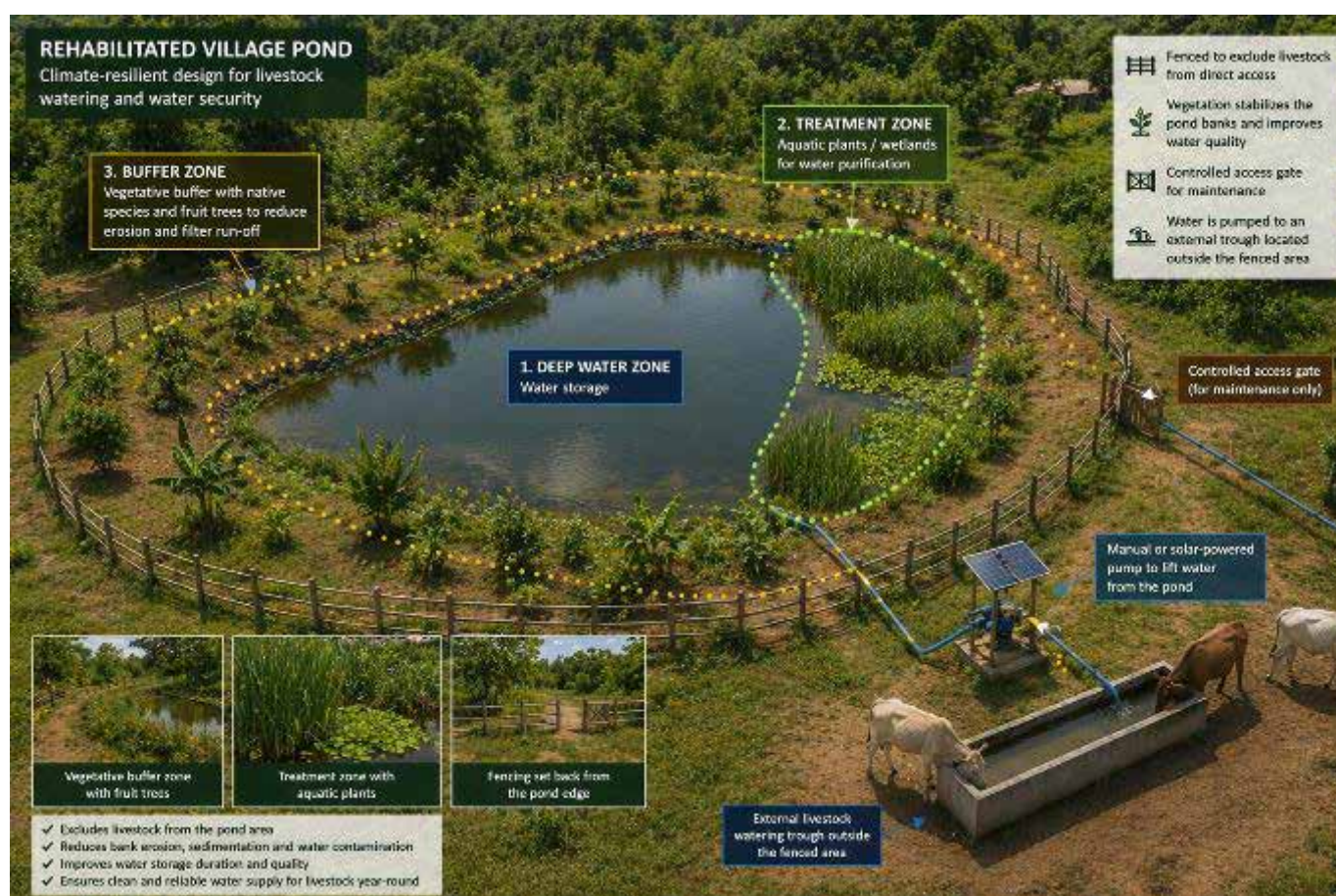


Figure 4. Conceptual illustration of the proposed intervention to local community ponds in the Aoral District, Kampong Speu Province, Cambodia.

OPERATIONS AND MAINTENANCE

Following the realisation of the intervention, it is essential to ensure adequate operation and maintenance, supported by a dedicated and sustainable budget. This is a critical condition for the long-term performance, resilience, and future viability of the project. Without proper maintenance, the effectiveness of the intervention may decline over time and reduce its intended benefits.

Responsibility for day-to-day maintenance will rest with the local community, which strengthens local ownership and ensures that the solution remains embedded in the local context. Where necessary, this should be supported by capacity building and clear governance arrangements to enable the community to effectively carry out these responsibilities. Embedding maintenance within local structures is key to sustaining project outcomes over the long term.

BUDGET

Table 37 Budget estimation for Output 3.3

DESCRIPTION	QUANTITY	UNIT PRICE (US\$)	COST (US\$)
Site investigation to assess/confirm the target sites	1	20,000	20,000
Consultancy services and detailed design, including ESS assessment and report	1	30,000	30,000
Excavation and deepening of the pond basin through clearing and removal of excess vegetation and biomass	10	5,000	50,000
Village pond improvement, including slope reshaping and stabilisation, establishment of a vegetative buffer zone, construction of fencing around the pond perimeter and buffer zone, as well as external livelihood watering troughs, Installation of a controlled access gate, and manual water pumping system, and implementation of a water treatment zone.	10	4,000	40,000
Participatory monitoring and maintenance through Community Agreement with CPA	1	100,000	100,000
ESS Consultant for ESS monitoring and documentation	1	10,000	10,000
		TOTAL	250,000

Output 3.4. 3 irrigation canals and 1 water gate rehabilitated in Aoral District with community participation and design standards for dry-season flow retention and flood management.

INTRODUCTION

Deliverables	- Technical assessment and concept design - Rehabilitation of a water gate - Rehabilitation/cleaning/regrading irrigation canals - O&M arrangements/community maintenance plan
Beneficiaries	Direct: 1,005 (Women: 527) Indirect: 8,420 (Women: 4,272)
Budget	US\$ 750,000.00
Location	Ta Sal Commune, Aoral District, Kampong Speu Province
CPA	Tasal Community Protected Areas (CPA)



PROBLEM STATEMENT

Aoral District faces increasing climate-related water stress driven by erratic rainfall, prolonged dry periods, and recurring heavy rains that damage local irrigation infrastructure. Although the area has important water resources, the existing irrigation system is unable to function effectively due to deterioration of canals and water control structures, a damaged and poorly functioning water gate, unstable canal elevations, sedimentation, vegetation overgrowth, and weak water retention capacity. Water is lost from the system before it can be effectively stored and distributed, while damaged embankments and rapid infiltration further reduce the reliability of the irrigation supply. As a result, farming households remain highly dependent on rainfall, making rice cultivation and other agricultural livelihoods increasingly vulnerable during the dry season. The rehabilitation of irrigation canals and the water gate is therefore necessary to improve water retention, restore functional water conveyance, and strengthen the climate resilience of local agriculture and livelihoods.

LOCATION

The proposed intervention is located in Tasal Commune in Aoral District, Kampong Speu Province, within a climate-vulnerable upland area where rural communities depend heavily on agriculture and local water infrastructure. The rehabilitation works will focus on approximately 3 km of irrigation canals, including smaller field channels connected to rice production zones (total length to be confirmed during detailed assessment) and one water gate that serves farming areas. The wider district forms part of an ecologically important landscape linked to protected and forested areas, while also facing recurrent drought, water shortages, and seasonal damage from intense rainfall.



Figure 1. Area water gate, pond and irrigation channels as circled in RED

BENEFICIARIES

The primary beneficiaries are farming households in Ta Sal commune who rely on the canal system and associated field channels for water supply to rice fields and other agricultural activities. The intervention is expected to directly benefit rural communities whose livelihoods are highly dependent on rain-fed agriculture and who are currently affected

by limited and unreliable dry-season water availability, poor irrigation performance, and recurring infrastructure damage. In addition to supporting farmers, the rehabilitation will also benefit women, youth, and other vulnerable community members by improving water availability and reliability, strengthening agricultural productivity, and reducing climate-related livelihood risks in the target area.

DATA COLLECTION

Input

Only limited data were available at this stage of the assessment, and the current findings are therefore based primarily on on-site observations, stakeholder consultations, and available visual records. Additional measurements and supporting data should be gathered during the next project phase to support detailed design and investment decisions.

Stakeholder Consultations

A meeting was held on 26/05/2026 in Ta Sal Commune, and the minutes are included in Annex 1.

Site Records

Site records included drone imagery (photos and video) and field photographs, which provided a clear overview of the current physical condition of the irrigation system and its main structures. These observations were supported by discussions with the local community and helped confirm the key constraints affecting water retention and distribution to the rice fields.

Following discussions with the community, the irrigation canal of approximately 1.7 km and around 1.3 km of smaller channels serving the rice fields were identified as requiring rehabilitation. The system currently depends mainly on rainfall, as no reliable external water source connection was identified during the site visit, which reduces its performance during the dry season. With changing climate conditions, the rainfall pattern is also shifting, with a shorter and more unpredictable wet season and a prolonged dry period, further limiting water availability and forcing farmers to delay the start of rice cultivation.

It should be noted that the target distance was reduced from 7 km at the CN stage to 3 km. The assessment revealed a major elevation mismatch where the canal sits higher than the water gate, preventing proper water flow. To resolve this, the Project reallocated resources to invest in necessary elevation realignment, an engineering requirement that was unforeseen during the CN design phase.

Based on site observations and discussions with the local community, several key issues in the existing irrigation system were identified:

- The existing water gate/sluice is heavily rusted, no longer functioning properly, and cannot be fully closed, resulting in continuous water loss from the pond.
- The pond is filled with vegetation, and the channel leading toward the rice fields has not been cleaned, restricting water movement and reducing conveyance efficiency.
- The irrigation canal has an inconsistent profile and is overgrown with vegetation, leading to reduced hydraulic performance.
- The irrigation canals from the water gate toward the rice fields are man-made and were dug by residents, which may contribute to irregular alignment and level differences within the system.
- According to the local community, there is a suspected elevation difference of approximately 1 meter between the culvert connecting the main pond and the smaller pond that should distribute water to the rice fields; this requires verification through field measurements.
- One canal connected from the water gate was reported as not useful because water was not flowing through it; further discussion indicated that this canal is likely positioned at a higher elevation than the water gate, preventing proper flow.

Overall, the site observations and community consultations indicate that the current irrigation system is affected by poor maintenance, structural deterioration, vegetation overgrowth, and possible level inconsistencies that limit water retention and distribution. These conditions reduce the reliability of irrigation supply to the rice fields and highlight the need for targeted rehabilitation and further technical assessment.



Figure 2. Existing water gate/sluice (left), canal with vegetations (middle), and small field channels with sediments and vegetation (right)

PROPOSED INTERVENTIONS

The cleaning and inspection of the existing concrete culvert form an important initial step of the intervention. At present, the culvert may be restricting the movement of water due to sediment accumulation, vegetation, blockages, or physical deterioration. Before any major rehabilitation works proceed, the culvert should be cleared and assessed in detail to confirm its condition, hydraulic capacity, and structural integrity. If defects such as cracking, joint failure, undermining, or localised collapse are identified, appropriate repair measures should be incorporated into the final design. Restoring this connection is essential because it directly influences the transfer of water between the ponded storage area and the downstream irrigation network.

For irrigation canals conveying water from the water gate or source to the rice fields, the preferred approach is to retain natural earthen channels where feasible, as this is more consistent with the local setting and community maintenance capacity. However, site observations indicate that at least one existing canal may be positioned at a higher elevation than the water source, preventing effective gravity-fed flow. As a result, proposed canal interventions should not only focus on material selection and rehabilitation, but also on verifying canal alignment and relative elevations to confirm functional water conveyance. Where required, canal works may include regrading, realignment, rerouting, or modification of canal profiles to restore or enable gravity-driven flow conditions.

An additional potential intervention may involve the construction of a retaining embankment or small dam along the eastern side of Pond 1, where field observations indicate that the existing pond perimeter may not provide sufficient hydraulic containment to retain stored water at the level necessary for irrigation use. Under the current condition, this side of the pond is understood to represent a vulnerable boundary through which water may be lost by uncontrolled lateral escape, localised overtopping, embankment weakness, or seepage into the adjacent ground, thereby reducing the effective storage volume available for controlled release toward the irrigation channels. The proposed structure on the east side should therefore be designed as a water-retention measure intended to improve the integrity of the pond storage area, maintain a stable operational water level, and reduce avoidable losses that currently compromise the performance of the wider irrigation system.

From a technical standpoint, if confirmed necessary, the intervention should be developed as a properly engineered earth embankment or low dam rather than as an informal fill bund, with due consideration given to crest elevation, freeboard above the design water level, side slope geometry, foundation stripping and preparation, compaction requirements, seepage control, erosion resistance, and long-term stability under repeated wetting and drying cycles. The detailed design should be informed by a topographic survey, confirmation of target retention levels, and geotechnical assessment of available fill materials and foundation conditions. Where necessary, the embankment section may need to incorporate compacted low-permeability material, such as cohesive soil, in order to limit seepage through the body of the structure, together with localised surface protection measures such as grass cover, stone pitching, or other erosion control treatments to reduce degradation caused by rainfall runoff, surface flow, and seasonal fluctuations in pond levels.

Attention should also be given to the interface between the proposed eastern dam, the existing pond edge, and the rehabilitated water gate system so that storage, retention, and controlled discharge operate as a coordinated hydraulic arrangement rather than as isolated elements. In practical terms, the inclusion of such a retention measure, if validated, would help ensure that water captured within Pond 1 can be conserved for a longer period, stored at a sufficient elevation to support downstream conveyance, and released in a managed and controlled manner according to irrigation demand. Without such a retention measure, ongoing losses from the eastern side of the pond may continue to undermine the efficiency of the proposed rehabilitation works and limit the overall reliability of dry-season irrigation supply.

Final design should also verify whether an auxiliary overflow or emergency spill arrangement is required to safely pass excess inflows during heavy rainfall events, thereby protecting the new embankment against overtopping or breach while preserving its primary function of retaining water within Pond 1.

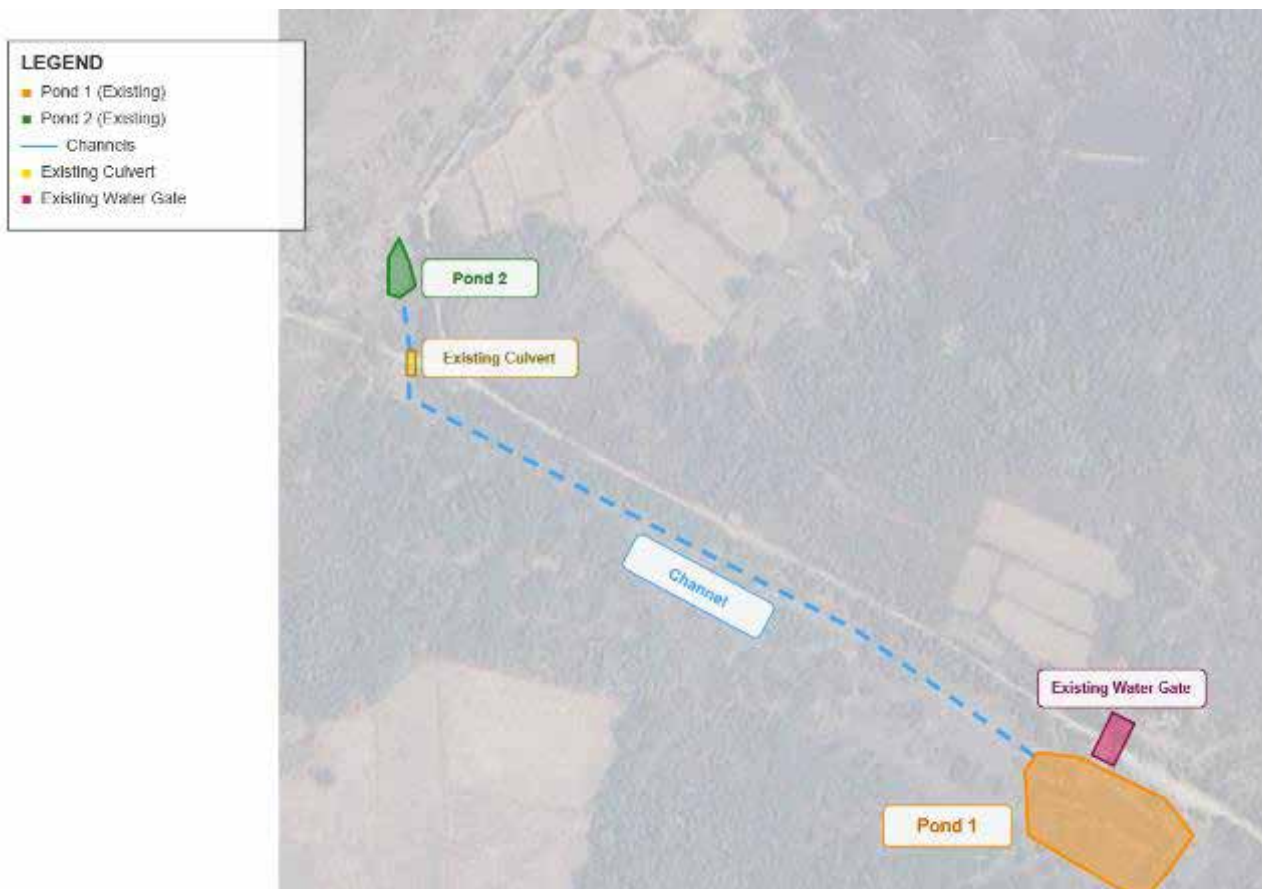


Figure 3. Existing situation

Rehabilitation efforts should focus on clearing vegetation, removing accumulated sediment, restoring functional channel profiles, correcting localised obstructions, and stabilising weak or eroded sections using suitable locally available materials. A well-maintained natural channel system can support improved flow efficiency and reliable water delivery to farmers, while remaining adaptable to local construction practices and community-based maintenance. However, concrete-lined channels, while more technically complex to construct, may in specific locations be considered to provide greater structural stability, reduced seepage, and improved long-term performance. The selection of channel type should therefore be informed by site-specific conditions, budget constraints, construction capacity, and long-term sustainability considerations.

Community consultations also highlighted concerns regarding insufficient water availability, including during the rainy season, which suggests that the problem is not only related to drought but also to the limited ability of the current system to capture, retain, and distribute available flows. In response, a supplementary water storage intervention may be explored during the design phase. One possible option is the development of a small diversion dam or similar regulating structure at the existing water source or pond. Such a structure could temporarily store water, improve the timing of releases, and redirect flows toward adjacent rice fields when needed. However, this option should be subject to further technical, environmental, and feasibility assessment before inclusion in the final works, as it may require additional studies on hydrology, geotechnical conditions, sediment behaviour, ecology, land use, and community acceptance.

To successfully implement these measures, the intervention should follow a structured sequence of activities from assessment through design and construction. The main steps are expected to include the following:

1. **Detailed site verification and surveys:** confirm canal alignment, invert levels, pond dimensions, culvert condition, ground elevations, and the relationship between the storage area and rice fields.
2. **Hydrological and hydraulic assessment:** determine inflows, expected storage behaviour, overflow levels, canal conveyance requirements, and the design water level for the proposed weir and overflow channel.
3. **Culvert inspection and condition assessment:** clean the culvert, identify defects, and define whether cleaning alone is sufficient or whether repairs or replacement are necessary.
4. **Environmental and social review:** verify potential impacts on surrounding land, vegetation, downstream users, and local livelihoods, and incorporate mitigation measures where required.
5. **Construction planning and phasing:** Organise the work so that cleaning, demolition, structural rehabilitation, canal shaping, and finishing works can be completed safely and efficiently with community participation where feasible.
6. **Construction and quality control:** execute the rehabilitation works using suitable materials and workmanship standards, with attention to levels, compaction, concrete quality, and protection against erosion.

7. **Testing, handover, and maintenance planning:** confirm that water can be retained and conveyed as intended and (preferably) establish practical and locally manageable maintenance procedures for vegetation control, desilting, inspection, and repair.

Based on the site visit findings and consultations with local stakeholders, it was observed that water stored within the existing pond is not currently able to discharge effectively into the irrigation channels. This indicates a likely hydraulic level mismatch (to be confirmed through a detailed survey) between the pond bed and the upstream invert or entry level of the receiving canal, such that gravity-driven flow cannot be initiated under the present configuration. In practical terms, the retained water level within the pond remains below the threshold elevation required for conveyance into the irrigation network, thereby limiting the functional performance of the system and reducing the availability of water for downstream agricultural use.

To address this constraint, a preliminary technical solution option has been identified at the concept level. The proposed intervention will be reviewed and amended following completion of detailed field investigations, including topographic survey, longitudinal and cross-sectional profiling, and verification of hydraulic control levels during the project implementation stage. These studies will be necessary to confirm the relative elevations, assess flow feasibility under different operating conditions, and identify the option that provides the most reliable, constructible, and cost-effective means of restoring water transfer from the pond to the irrigation channels.

Pond 2 is intended to function as an upstream water collection and temporary storage basin within the overall irrigation conveyance system, with the objective of intercepting, retaining, and regulating available surface water prior to its transfer toward Pond 1. Under the proposed concept, water stored within Pond 2 would be conveyed through the existing connecting canal, subject to confirmation of hydraulic continuity, sufficient flow capacity, and favourable relative levels between the two storage areas. In practical engineering terms, Pond 2 would provide an initial retention and balancing function by capturing runoff and locally available inflows, reducing short-term fluctuations in water availability, and extending the period during which water can be routed downstream for subsequent use within the irrigation network. The technical feasibility of this arrangement will depend on verification of the condition and hydraulic performance of the existing canal link, including its alignment, invert elevations, sedimentation level, vegetation encroachment, seepage losses, and any localised obstructions that may restrict or interrupt gravity-driven conveyance. A detailed topographic and hydraulic assessment should therefore confirm whether water retained in Pond 2 can be transferred efficiently to Pond 1 under the expected operating conditions and whether the combined Pond 2–Pond 1 system can function as an integrated staged storage and distribution arrangement for downstream irrigation supply.

The proposed intervention would involve rerouting or regarding the retained water from pond 1 toward the irrigation area through an alternative alignment identified during the technical investigations. This option would be viable only if the survey confirms that a continuous and hydraulically favourable gradient can be established between the pond outlet and the receiving distribution network, such that water conveyance can occur under gravity without the need for pumping or other mechanically operated transfer systems.

In addition to the channel-related works, this solution should include repair and rehabilitation of the existing water gate to restore its operational functionality and enable controlled regulation of discharge from the pond into the irrigation channels. The gate should be capable of being opened, adjusted, and closed in a reliable manner so that flows can be released according to irrigation demand, seasonal water availability, and downstream conveyance capacity, while also reducing unnecessary leakage and improving water retention when releases are not required.

The design development for this intervention should therefore include verification of existing and proposed invert levels, ground elevations, available head, longitudinal slope, potential backwater effects, and any local depressions or high points that could interrupt free flow conditions, together with a condition assessment of the gate structure, lifting mechanism, guide arrangement, sealing performance, and any associated concrete or masonry components.

Where the investigations demonstrate that a suitable alignment is achievable, the rerouted channel could provide a practical and cost-efficient means of restoring irrigation supply by improving the hydraulic connectivity between stored water and downstream agricultural plots. Depending on site conditions, the intervention may include selective excavation, localised regrading, minor embankment trimming, stabilisation of vulnerable sections, vegetation clearance, repair of corroded or damaged gate components, and provision of simple erosion protection at inlet, outlet, and bend locations. Additional attention should be given to minimising excessive seepage losses, preventing sediment deposition in low velocity reaches, and ensuring that the proposed route and gate structure remain accessible for future inspection, operation, and maintenance by the local community.

From an implementation perspective, this solution is likely to offer comparatively lower capital and operational costs than more structurally intensive alternatives, as it relies primarily on gravity-driven conveyance and controlled gate operation. It is also generally more compatible with local construction practices and long-term community-based maintenance arrangements. However, final adoption of this solution should depend on confirmation that the rerouted alignment and rehabilitated water gate can reliably deliver sufficient flow volumes during the required irrigation period, do not create adverse impacts on adjacent land or existing water uses, and can be constructed within acceptable

environmental, social, and budgetary constraints.

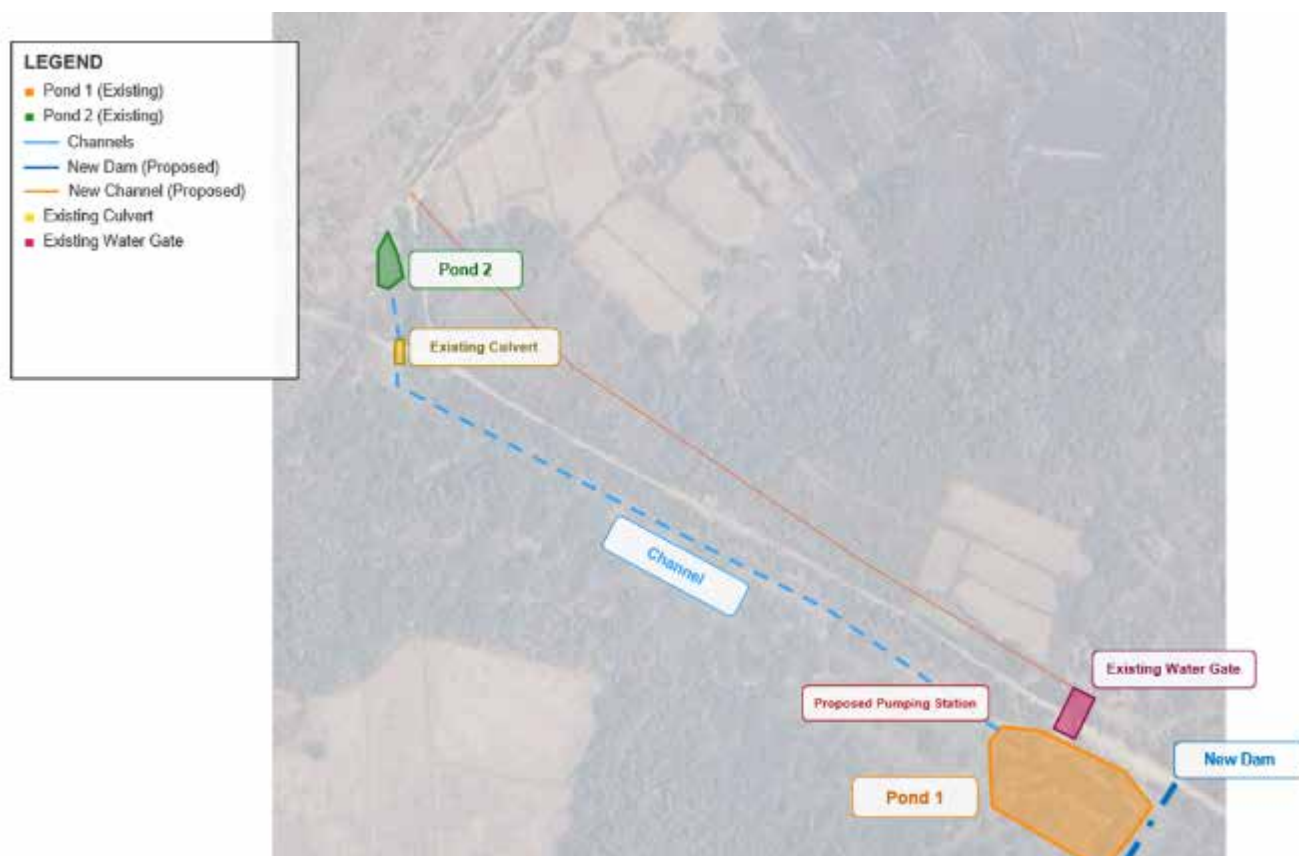


Figure 4. Proposal intervention illustration

Implementation and technical support

Where feasible, most of the rehabilitation work should be carried out by local community members, building on local knowledge of the canal system and strengthening community ownership of the intervention. This community-based approach should be supported by appropriate technical input from relevant specialists during the design and implementation stages, including guidance on hydrology, ground conditions, environmental considerations, construction methods, and quality control, to ensure that the works are implemented safely, function effectively, and remain sustainable over the long term.

Given the range of technical issues involved, multidisciplinary support will be required during the design phase. Input from a hydrologist will be necessary to assess flows, storage behaviour, and overflow conditions; a geohydrologist will help evaluate groundwater interactions and seepage risks; a geologist or geotechnical specialist will be needed to assess soil and foundation conditions; and a biologist or environmental specialist should review potential ecological considerations associated with changes in water retention and flow patterns. Additional expertise from civil, irrigation, and environmental professionals may also be required to ensure that the intervention is technically sound, feasible within the available budget, and aligned with local implementation and maintenance capacity. Taken together, these measures would provide a practical pathway to improve water retention, enhance irrigation performance, and strengthen agricultural resilience in the target area.

OPERATIONS AND MAINTENANCE

Following the realisation of the intervention, it is essential to ensure adequate operation and maintenance, supported by a dedicated and sustainable budget. This is a critical condition for the long-term performance, resilience, and future viability of the project. Without proper maintenance, the effectiveness of the intervention may decline over time and reduce its intended benefits and overall impact.

Responsibility for day-to-day maintenance will rest with the local community/CPA, which strengthens local ownership and ensures that the solution remains embedded in the local context. Where necessary, this should be supported by capacity building and clear governance arrangements to enable the community to effectively carry out these responsibilities. This may include simple maintenance guidelines, defined roles and responsibilities, and periodic support where required. Embedding maintenance within local structures is key to sustaining project outcomes over the long term.

BUDGET

Table 38 Budget estimation for Output 3.4

DESCRIPTION	QUANTITY	UNIT PRICE (US\$)	COST (US\$)
Site verification, surveys and investigations, including hydraulic and hydrological assessments	1	40,000	40,000
Consultancy services for detailed design and engineering services, including ESS assessment and report	1	40,000	40,000
Canal clearing, regrading, profile restoration, and realignment/rerouting works	3km	100,000	300,000
Water gate repair or replacement	1	150,000	150,000
Minor hydraulic structures (inlets/outlets)	1	35,000	35,000
Local erosion protection measures	3 km	25,000	75,000
Participatory monitoring, tree/grass plantation, and maintenance through the Community Agreement with CPA	1	100,000	100,000
ESS Consultant for ESS monitoring and documentation	1	10,000	10,000
		TOTAL	750,000

Output 3.5. Eco-trail rehabilitation with integrated firebreak function (1.5 km) constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.

INTRODUCTION

Deliverables	• 1.5 km eco-trail rehabilitation • Directional, warning and educational signage • Reduction of environmental degradation • Enhancement of visitors' experience and safety • Long-term maintenance of the trail, waterfall area, riverbed, and surrounding environment
Beneficiaries	Direct: 2,089 (Women: 1,540) Indirect: 4,053 (Women: 2,049)
Budget	US\$ 1,750,000.00
Location	Chambak Commune, Phnum Sruoch District, Kampong Speu Province
CPA	Chambak Community Protected Areas (CPA)



PROBLEM STATEMENT

The Phnum Sruoch District forms a transitional ecological zone between the Cardamom Mountains and adjacent agricultural plains. In this interface, degraded forest edges, exposed slopes, and ecotourism corridors are increasingly affected by drought, forest fires, soil erosion, and inadequate visitor behaviour. The district is facing growing climate-related pressures, particularly in relation to wildfire risk, soil degradation, and limited access to vulnerable forest and ecotourism areas. During the dry season, the risk of wildfire increases significantly, while degraded and unsafe access routes constrain emergency response, limit community mobility, and reduce the area's ecotourism potential.

In addition, existing trails lack adequate infrastructure, proper construction and maintenance standards, erosion control measures, safety features, and effective signage, which further accelerate land degradation and pose risks to biodiversity conservation within the Kirirom landscape.

LOCATION

The proposed interventions will be developed and implemented in the priority area of the Chambak Community and Chambak Waterfall, both located in Phnum Sruoch District, Kampong Speu Province, within the broader Kirirom National Park landscape.



Figure 1. Area of Chambak Waterfall

BENEFICIARIES

The intervention is expected to directly benefit approximately 2,089 people, including 1,540 women in Phnum Sruoch District, including youth, forest-dependent households, and vulnerable communities living in proximity to protected and ecotourism areas. Beneficiaries will gain safer access for daily mobility and emergency response, reduced exposure to wildfire and erosion risks, and improved opportunities for nature-based livelihoods linked to ecotourism activities. The intervention will also support local authorities, community groups, and protected area stakeholders through

strengthened governance, enhanced ecosystem protection, and improved access to key natural assets.

DATA COLLECTION

Input

The data collected for this output consisted of stakeholder consultations, site observation, and site photographs taken during field visits to the Chambak Community, Chambak Waterfall, and the trail connecting both locations.

Stakeholder Consultations

A consultation meeting was held on 24/05/2026 at the Chambak Community, and the minutes are included in Annex 1.

In addition, a site visit and field consultations were conducted with the Chambak community leader and vice-leader, eco-trail guides, and members of the Chambak CPA Committee responsible for the management and maintenance of the area and its ecotourism activities.

During the trail assessment, it was possible to observe site conditions, gather local perspectives, and exchange insights with community representatives. These interactions aimed to assess the current condition of the trail leading to the waterfall and to identify priority interventions required to improve accessibility, safety, environmental management, and overall visitor experience.

Site Records

Field observations indicate that the Chambak Community and the Chambak Waterfall constitute highly frequented local destinations, particularly during weekends. The community, located at the base of the trail, functions as the primary access and support area for visitors, offering essential services, including food provision, homestay accommodation, sanitary facilities, souvenirs, and controlled access to the trail and waterfall.

The existing trail remains largely natural, with limited formal infrastructure. Field observations indicate that the main issues along the Chambak trail are not limited to its physical condition, infrastructure, and maintenance, but are strongly associated with visitor behaviour and the lack of effective management systems, including:

- Improper waste disposal, including plastic and cans left along the trail and river
- Use of fire (informal campfires), posing significant safety and environmental risks
- Lack of functional signage and clearly defined rules
- Unsafe visitor practices (e.g., inadequate footwear and access to hazardous areas)
- Limited capacity of local rangers for visitor management and guidance

These findings demonstrate that trail rehabilitation alone is insufficient and must be complemented by education, regulation, and community-based governance mechanisms.

The assessment highlights both infrastructure gaps and behavioural challenges, underscoring the need for integrated solutions that combine physical improvements with visitor management and environmental awareness measures.

The Chambak eco-tourism area currently lacks the minimum infrastructure and management measures required to ensure safe visitor access and adequate environmental protection. The eco-trail to the waterfall is not clearly marked, and tourists are not required to hire a guide, with guiding services remaining optional. As a result, visitors may move through the trail without adequate orientation or supervision, increasing the likelihood of getting lost, entering hazardous areas, or engaging in unsafe behaviour. It was also observed that there are no properly arranged rest areas at regular intervals, no visible information on the remaining distance to the waterfall, and very limited safety, regulatory, or directional signage. Important features such as warning boards for high-risk areas, entrance information boards, and clear instructions on appropriate visitor behaviour are currently absent.

Field observations further showed that several trail segments are physically vulnerable and may pose safety risks to visitors. Some sections of the trail are lower than the surrounding terrain, creating swale-like conditions with visible runoff marks and localised water ponding. In addition, many parts of the trail consist of uneven rocks and boulders that appear to reflect the natural ground profile of the area, but which also result in a rough and unstable walking surface that may create slipping, tripping, or injury hazards. Certain sections have overgrown, encroaching, or overhanging vegetation, further reducing safe passage. In other parts, the trail runs adjacent to very steep slopes, creating a significant falling hazard, especially during wet conditions or where footing is poor.

Environmental management along the trail is currently inadequate. Only a small number of waste disposal points were observed, and several of them are not easily visible. Different types of waste, including plastic bottles, glass, bags, paper, and other litter, were observed along the route. In some locations, erosion of the land surface was also visible. In addition, unsightly water pipes are present along the trail, and two pipes carrying river water cross the trail at different

points. Although these pipes appear structurally robust, they may still create a risk that visitors step on, trip over, or damage them during movement.

Evidence of fire-related risks was also observed during the site visit. Some sections along the trail showed burned vegetation, and according to the eco-trail guides, visitors sometimes play with fire. Remnants of campfires were also identified in the riverbed near the waterfall. These findings confirm the relevance of introducing firebreaks and stronger visitor control and awareness measures as part of the intervention.

The community confirmed the need to construct 1.5 km of firebreaks and trails, with the possibility of using available natural rocks combined with cement in selected areas to reduce slippery sections and improve accessibility. The community also informed the team that they had already constructed approximately 200 meters of handrails by themselves in the upper sections near the waterfall, although this had not yet been completed at the time of the concept note preparation. However, an additional 300 meters of handrails are still required. Part of the already constructed 200-meter rail section crosses the river and is considered unesthetic, indicating the need for a more durable, safer, and better integrated design solution.

Overall, the site assessment confirmed that the Chambak waterfall trail has strong eco-tourism potential but requires targeted investments in trail improvement, erosion control, handrails, firebreaks, visitor safety measures, signage, rest areas, and waste management to provide safe access, reduce environmental degradation, and strengthen the resilience and attractiveness of the site.

PROPOSED INTERVENTIONS

In response to the site findings, the proposed intervention aims to combine low-impact trail improvements, targeted safety measures, reduction of environmental degradation, and environmentally sensitive visitor management strategies.

While the challenges identified in the Chambak site encompass broader ecological and governance issues, the proposed approach deliberately focuses on feasible, high-impact actions within the trail system, where both environmental degradation and visitor-related pressures are most evident.

Given the scale and complexity of wildfire risks and landscape-level degradation processes, it is recognised that these interventions cannot address all underlying drivers. Instead, the approach prioritises the requalification of the existing eco-trail as a strategic entry point to improve site conditions and visitor management.

In this context, the proposed interventions focus specifically on trail enhancement and signage systems as key mechanisms for improving overall site performance. The trail is understood not only as access infrastructure, but as a management tool to guide visitor movement, reduce impacts, and support conservation objectives.

Through practical, low-cost and easily implementable measures based on Nature-based Solutions (NbS) and community-led implementation and maintenance, the interventions aim to:

- Minimise the risk of wildfire through firebreak establishment
- Improve visitor movement and maintain users along the designated path, reducing informal trail creation
- Reduce soil erosion and improve surface water management, addressing the impacts of rainfall and foot traffic
- Enhance visitor safety along critical sections
- Influence visitor behaviour through clear, consistent, and strategically positioned signage
- Strengthen the role of the community in trail management and stewardship

It is expected that improvements to eco-trail accessibility and safety will contribute to enhanced environmental performance and reduced physical degradation, while also improving the overall visitor experience.

In parallel, the implementation of a coherent signage system along the community area, trail, and waterfall is expected to positively influence visitor behaviour, encouraging safer practices and reducing activities that contribute to environmental degradation, such as littering and informal fire use.

Together, these interventions address both the physical and behavioural drivers of degradation identified in the site assessment, with the objective of enhancing the ecotourism destination while preserving its natural characteristics and ecosystem integrity.

Intervention package 1: Eco-trail rehabilitation and safety upgrading

A priority intervention is the upgrading of approximately 1.5 km of the existing eco-trail through low-impact improvements that respond to the current topography, trail condition, and hazard profile. As far as possible, the works should use locally available natural materials and context-appropriate construction methods so that the trail remains visually integrated with the landscape and easier for the community to maintain over time.

The trail rehabilitation should focus on sections currently affected by water runoff, steep slopes, uneven or rocky surfaces, localised slipperiness, and unsafe walking conditions. Particular attention should be given to trail tread correction in order to reduce the concentration of water along the pathway, improve drainage behaviour, and minimise erosion. This is important because trail degradation commonly results from the combined effects of surface runoff and foot traffic, which together intensify soil loss, widening, and unsafe conditions.

In practical terms, the rehabilitation works may include:

- localised tread correction and minor regrading;
- surface smoothing in rough or unstable areas;
- introduction of durable steps made of natural stone or similarly robust materials in steep or unstable sections;
- selective drainage improvements to reduce ponding, rutting, and erosion during rainfall events.

These measures are intended to improve walking conditions, reduce physical degradation, and help maintain visitors on the designated trail, thereby reducing the formation of informal paths and associated impacts on surrounding vegetation and soils.

Handrail improvement is also recommended as part of the safety upgrade. As illustrated in the figures below, the handrail section indicated in orange, which currently crosses the river between both banks, shall be removed and relocated to the left bank (right when facing the waterfall), where it can continue the descending alignment from the forest in a safer and more visually appropriate manner. The handrail section indicated in blue may be retained (in this case, it is recommended that it be repainted in green or brown to reduce visual impact) or alternatively replaced to ensure continuity with the new handrail proposed for the section indicated in orange.



Figure 2. Existing handrail configuration and proposed realignment, relocating the crossing from the riverbed to the left bank to improve safety, flow continuity, and landscape integration. Orange arrows indicate the proposed alignment, while blue arrows highlight sections to be retained, upgraded, or removed.

Railings should be provided according to risk level: more durable materials may be necessary in high-risk sections, while lighter and locally available materials such as wood may be considered in lower-risk areas, subject to technical feasibility and maintenance capacity.

As illustrated in the figure below, for the steepest section of the trail, it is recommended to retain the existing handrail, with repainting in green or brown to reduce its visual impact and better integrate it with the surrounding landscape. Complementary ground-level interventions are also proposed, including slope cutting into stepped segments and the incorporation of stones to improve drainage, combined with timber or bamboo elements to form stable step edges. These measures are intended to enhance trail durability, improve drainage and reduce erosion, and increase user safety in this critical section.



Figure 3. Proposed Nature-based Solutions (NbS) interventions for trail stabilisation, drainage improvement, and safety enhancement in a steep section.

The trail includes additional sections that require targeted interventions to improve tread conditions, enhancing walkability, flow, and overall safety, without the need to transform it into a wide, fully levelled pathway. Similarly, certain sections exhibit issues such as water accumulation, surface runoff crossing the trail, and localised erosion. In these areas, appropriate drainage solutions should be implemented, including the installation of side ditches. In addition, transverse drainage features, such as wooden or bamboo water bars, may be incorporated to reduce runoff velocity and effectively divert water from the trail surface toward adjacent vegetation.



Figure 4. Sections of the trail visibly opened by users along the riverbank were identified. These informal paths shall either be decommissioned or formally integrated into the official trail network, following appropriate assessment and adaptation. In all cases, measures shall be taken to clearly guide users along the designated trail, preventing the continued creation of parallel or alternative paths.



Figure 5. In sections where the trail bifurcates, both paths may be maintained, provided that clear signage indicates that they lead to the same destination, or alternatively, one of the paths shall be decommissioned. It is essential to clearly identify the designated trail as the official route, discouraging the creation of informal alternative paths by visitors.

Particular attention shall be given to the removal or proper concealment of the water pipe that crosses the trail in several sections, as it poses a risk both to the infrastructure and to visitor safety due to the high likelihood of tripping. Where relocation to the side of the path is not feasible, the pipe shall be covered using soil and stones sourced from the site, ensuring full integration with the trail surface. Similarly, these same materials shall be applied, where necessary, to improve the trail surface and ensure safer and more consistent walking conditions.



Figure 6. Examples of sections requiring intervention include areas where measures are needed both to protect the water pipe and to improve trail tread conditions, ensuring safer and more stable walking surfaces.

Further improvements are recommended to address vegetation encroachment, visitor comfort, and environmental management. Vegetation management should be undertaken to maintain adequate trail clearance and reduce the risk of injury from overhanging or obstructive plant growth. In addition, small, designated rest areas should be established at appropriate intervals to provide safer stopping points and improve the overall visitor experience.



Figure 7. Example of a trail section requiring vegetation clearance maintenance.



Figure 8. Risk of injury from overhanging vegetation along the trail.



Figure 9. Example of a simple existing structure beside the trail that could be adapted and used as a rest area.

It should be noted that vegetation management associated with the trail may help reduce small-scale ignition risks linked to visitor behaviour, improve visibility, and facilitate emergency response. However, the trail should not be presented as a landscape-scale firebreak capable of stopping major forest fires entering from the park edges. The issue of major forest fires should be addressed through alternative approaches in collaboration with the rural and urban communities surrounding Kirirom National Park.

The use of fire along the trail, as well as the practice of lighting small campfires in the waterfall area, is a serious issue that should be prohibited and addressed rigorously by trail guides through structured visitor orientation. This should be reinforced through group briefings prior to the start of the trail and by educational signage at key points along the route - particularly in areas where vegetation has been affected by fire - as well as at the river and waterfall access points.



Figure 10. Evidence of campfire use was observed along the river channel and its banks, highlighting the presence of fire-related risks in environmentally sensitive areas.

Visitors shall be actively encouraged not to leave waste along the trail. Waste management infrastructure shall be limited to two designated disposal points: one located at the trail entrance, serving as the primary collection station with appropriate waste bin facilities, and another positioned near the area with toilets, water and food service structures. Waste left behind by visitors constitutes a form of environmental degradation and shall be addressed as a priority by the Chambak CPA Committee and trail guides. This shall be managed through structured visitor orientation prior to trail access, complemented by continuous guidance along the route through clear, strategically placed, and easily understandable signage.



Figure 11. A significant amount of waste was observed accumulated or dispersed along the river channel and its banks, resulting in the degradation of the scenic landscape. During periods of rainfall, there may be insufficient time for trail guides to collect all waste, increasing the likelihood of debris being carried downstream, thereby causing environmental degradation in downstream areas.



Figure 12. Informal or improvised waste storage solutions currently found along the trail shall be identified and removed, as they do not meet appropriate waste management standards and contribute to environmental degradation and visual pollution.

To strengthen emergency preparedness, motorbike emergency access is recommended where feasible to support rapid response in the event of injury, accidental fire, or other incidents. Where site conditions allow, this may be achieved through a narrow parallel access line; in more constrained sections, emergency access may be incorporated into the main trail itself, with shared use restricted to emergencies only. The final alignment, width, and surface treatment should be confirmed through additional technical assessment to ensure feasibility, safe use, and minimal environmental disturbance.

Intervention package 2: Signage, visitor guidance, and environmental awareness

A second priority intervention is the introduction of a clear, consistent, and strategically positioned signage system along the community area, trail, and waterfall. This component is essential because the site assessment indicates that degradation is driven not only by physical trail conditions but also by visitors' behaviour and the lack of effective guidance and management systems.

The signage system should improve:

- orientation and route clarity;
- visitor safety;
- environmental awareness;
- communication of rules and expected behaviour.
- provide interpretive information on local fauna and flora through photographs, illustrations, and brief educational content.

Informational and regulatory signs should be installed at the trail entrance to explain the route, approximate distance, difficulty level, basic safety information, and expected visitor behaviour. These signs should communicate simple but critical messages, such as:

- stay on the designated trail;
- do not leave waste;
- do not light fires and campfires;
- use caution in slippery or steep areas.

Because many visitors are local users with limited eco-tourism habits, signage should rely not only on text but also on clear symbols, graphic cues, and simple visual communication. Directional markers should be placed at key decision points along the route, including markers indicating distance covered or distance remaining to the waterfall. Additional warning signs should be installed in high-risk sections, while reminder signs should be used in environmentally sensitive areas to discourage unsafe or damaging behaviour.

Signage may also be incorporated into rest areas and key arrival points to reinforce orientation, reduce confusion, and improve the overall experience. The final locations, spacing, and content of signs should be refined through further field assessment, taking into account user movement patterns, visibility, site-specific conditions, and visually integrated solutions adapted to the local context.

Together, these physical and behavioural measures are expected to improve visitor safety, route legibility, environmental quality, and site management conditions, while enhancing the attractiveness of Chambak as a community-based ecotourism destination.



Figure 13. Existing signage installed within the Chambak community, prior to the trail entrance. The current sign should be replaced with updated and expanded information and a redesigned layout adapted to the local context in order to improve clarity, visitor orientation, and communication of key messages.

Key locations for the installation of orientation and regulatory signage shall include the Chambak community area, prior to the trail entrance; the area with toilet facilities and food and beverage services; and the section immediately before the descent toward the river and waterfall.

Summary of proposed interventions

The proposed interventions can therefore be summarised as follows:

- Upgrade approximately 1.5 km of the existing eco-trail using context-appropriate, low-impact, and, where feasible, locally sourced natural materials.
- Improve tread conditions in water-affected sections through localised correction, minor regrading, and surface smoothing to reduce runoff concentration, erosion, and unsafe walking conditions.
- Install natural stone or other durable steps in steep or unstable sections to improve safety and long-term usability.
- Provide emergency motorbike access where feasible to support response to injury, accidental fire, and other incidents.
- Remove the existing handrail crossing the river and relocate it to a safer alignment on the left bank.
- Provide railings according to risk level, using more durable materials in high-risk zones and lighter local materials in lower-risk areas where appropriate.
- Undertake selective vegetation management to maintain trail clearance, improve visibility, and reduce user risks.
- Establish designated rest areas to improve visitor comfort and provide safer stopping points.
- Improve waste management through visible and strategically located disposal points.
- Install a complete signage system including entrance boards, regulatory signs, warning signs, directional markers, and distance indicators.
- Carry out additional technical site assessment to define the final alignment, dimensions, materials, and construction approach for each proposed measure.

Overall, these interventions are intended to create a safer, more resilient, and better-managed eco-trail system that improves the visitor experience, reduces environmental degradation, supports emergency access, and helps preserve the natural characteristics and visual quality of the Chambak waterfall destination.

OPERATIONS AND MAINTENANCE

Following implementation, it is essential to ensure adequate operation and maintenance, supported by a dedicated and sustainable budget. This is a critical condition for the long-term performance, resilience, and viability of the intervention. Without proper maintenance, the effectiveness of the proposed measures may decline over time and reduce their intended benefits.

Responsibility for day-to-day maintenance should rest primarily with the local community/CPA, strengthening local ownership and ensuring that the solution remains embedded in the local context. This should be supported, where necessary, by capacity building, simple maintenance protocols, and clear governance arrangements so that community representatives can effectively carry out their responsibilities.

Community-based operation and maintenance should include, at a minimum:

- periodic trail inspection and basic repairs;
- cleaning and upkeep of drainage, steps, and handrails;
- maintenance and replacement of signage where necessary;
- vegetation clearing in overgrown sections;
- waste collection and disposal management;
- visitor guidance and basic communication of rules, including fire prevention and responsible behaviour.

Embedding maintenance within local management structures is key to sustaining project outcomes over the long term and to ensuring that the trail continues to function as both an access route and a practical tool for site management and visitor stewardship.

BUDGET

Table 39 Budget estimation for Output 3.5

DESCRIPTION	QUANTITY	UNIT PRICE (US\$)	COST (US\$)
Detailed site survey, technical assessment, and trail setting-out	1	30,000	30,000
Consultancy services and detailed design, including ESS assessment and report	1	50,000	50,000
Eco-trail rehabilitation works (1.5 km), including tread improvement and localised regrading, surface stabilisation, smoothing of uneven or rocky trail sections, selective vegetation clearance, emergency motorbike access	1.5km	340,000	1,020,000

improvements (where feasible), drainage improvements including side ditches and transverse water bars.			
Construction of stone, timber, or bamboo steps (300m) in steep and unstable sections	300m	1,000	300,000
Installation of additional handrails (500m) in high-risk trail sections, relocation from the river crossing to a safer left-bank alignment and upgrading/repainting of retained handrail sections to improve visual integration.	1	80,000	80,000
Water pipe relocation, concealment, and integration into the trail surface	1	30,000	30,000
Development of designated rest areas and small visitor stopping points	2	5,000	10,000
Waste management containers at two designated disposal points	2	5,000	10,000
Signage installation, including (1) entrance information board and primary orientation signage, (2) directional, warning, and distance signage along the trail and at decision points, and (3) educational and regulatory signage for fire prevention, waste management, and visitor behaviour.	10	2,000	20,000
Project management & supervision – technical coordination, supervision, and reporting	1	90,000	90,000
Participatory monitoring, training, and maintenance through the Community Agreement with CPA	1	100,000	100,000
ESS Consultant for ESS monitoring and documentation	1	10,000	10,000
		TOTAL	1,750,000

Output 3.6. Irrigation systems (2 km) upgraded using watershed-based design to optimise dry-season storage, flood buffering, and equitable distribution across farm plots.

INTRODUCTION

Deliverables	• Technical assessment and concept design for a watershed-based irrigation system • Construction of a rock dam and associated hydraulic structures • Rehabilitation and upgrading of approximately 2 km of irrigation channels • O&M arrangements/community maintenance plan
Beneficiaries	Direct: 4,053 (Women: 2,049) Indirect: 123,631 (Women: 63,162)
Budget	US\$ 250,000.00
Location	Chambak Commune, Phnum Sruoch District, Kampong Speu Province
CPA	Chambak Community Protected Areas (CPA)



PROBLEM STATEMENT

Phnum Sruoch District faces recurrent droughts, erratic rainfall, and seasonal flooding that undermine agricultural productivity and household water security. Existing irrigation infrastructure in Chambak Commune is insufficient to capture and distribute available water effectively, resulting in dry-season water shortages, flood-related runoff during peak rains, and inequitable access across farm plots. These constraints threaten climate resilience, food security, and livelihoods in a district where communities depend heavily on agriculture and remain highly vulnerable to climate variability.

LOCATION

The intervention is located in Chambak Commune, Phnum Sruoch District, Kampong Speu Province, within the Kirirom National Park landscape. The district is a transitional ecological zone between the Cardamom foothills and the agricultural plains, where several canals, rivers, and nearby agricultural areas depend on improved water storage and distribution to strengthen resilience to drought and floods.



Figure 1. Location of the proposed dam as circled in RED

BENEFICIARIES

The output will directly benefit 4,053 people, including 2,049 women, in Chambak Commune of Phnum Sruoch District. Beneficiaries include climate-vulnerable farming households and local communities who will gain improved dry-season water storage, better flood buffering, and more equitable irrigation water distribution across farm plots.

DATA COLLECTION

Input

The data collected for this output consisted of stakeholder consultations, site observation, and site photographs taken

during field visits to the Chambak Community, Chambak Waterfall, and the trail connecting both locations. Additional topographic, hydrological, and geotechnical data must be collected during subsequent project phases to support detailed design.

Stakeholder Consultations

A meeting was held on 24/05/2026 at the Chambak Community, and the minutes are included in Annex 1.

Site Records

Site observations and discussions with local stakeholders confirmed that the area has been significantly affected by damage to the former dam and the hydrological changes that followed. According to the community, the structure was damaged, overtopped, and spilled, which triggered major flooding in the surrounding area. Local people explained that this event not only caused short-term damage but also changed the way water now moves through the landscape. As a result, the natural waterways were altered, the previous pattern of water retention and release was disrupted, and the downstream distribution of water became less reliable for productive land uses. Since that event, the local flow regime no longer functions in a way that supports the needs of nearby farming households.

One of the clearest consequences described during the site visit is the reduced water supply to the surrounding rice fields. Community members reported that, in several locations, farmers now experience only limited water availability, and in some places, practically no reliable supply reaches the fields at all. This has direct implications for rice cultivation, cropping stability, and household livelihoods, given the strong dependence of the area on agriculture. For this reason, the community emphasised that water for rice fields is not only an infrastructure issue, but a core livelihood priority. Restoring a dependable system for water regulation, storage, and distribution is therefore seen locally as essential for improving agricultural productivity and reducing vulnerability during dry periods.

The community indicated that a nature-based dam would be an appropriate and practical response to these challenges. In their view, such a structure is needed to regulate water flow more effectively and to create a storage function that can serve the area throughout changing seasonal conditions. The role of the proposed dam would not be limited to holding water; it would also help manage the timing and direction of releases so that water can be used more productively and more safely. In addition to supporting agriculture, local stakeholders noted that the retained water could also contribute to eco-tourism activities, creating a broader community benefit from the same intervention. The improvement of the irrigation system associated with this measure is expected to benefit approximately 700 hectares of paddy fields, which highlights the scale and importance of the intervention for local production, resilience, and land use management.

Another important point raised during the site discussions was that the future water management arrangement should allow water to move in two directions rather than concentrating on all flow in a single path. On one hand, part of the water should continue along the natural river course to preserve the local hydrological character, maintain environmental functions, and retain the visual and recreational value of the stream corridor. On the other hand, part of the flow should be directed toward the irrigation canal so that agricultural land can receive the water needed for rice production. This dual-flow concept was strongly supported by local stakeholders because it responds to both livelihood needs and landscape functions. Community members also proposed that, along the natural river course, a small dam or controlled water area would be beneficial for tourism purposes, particularly as a place where visitors could bathe, enjoy the water, and strengthen the attractiveness of the site for local recreation and eco-tourism activities.

Based on the site discussions, the following key issues and suggested solutions were identified:

- The previous dam failure caused flooding and changed the natural water pathways.
- The altered flow regime has reduced water availability for rice fields, in some places to very low or no supply.
- The community identified irrigation water for rice production as the most urgent need.
- A nature-based dam is considered necessary to regulate and retain water for agriculture and eco-tourism.
- The improved irrigation system could support about 700 hectares of paddy land.
- The preferred water management approach is to allow flow both along the natural river course and toward the irrigation canal.
- A small water retention feature on the natural river course would also create value for tourism and recreational use.



Figure 2. Existing situation of the site for a new rock dam (left) and irrigation canal rehabilitation (right)

Overall, the site record indicates a strong need for an integrated water management intervention that can respond to both the immediate and structural consequences of the former dam failure. The findings suggest that restoring agricultural water access is the central priority, but that the intervention should also respect the natural river function and create wider local benefits where possible. A nature-based solution that improves regulation, storage, and controlled distribution of water appears well aligned with the issues identified by the community. At the same time, the possibility of maintaining part of the natural flow and creating a small water feature for visitors adds value from an eco-tourism perspective. Taken together, these observations support a balanced intervention that addresses farming needs, landscape functionality, and local development opportunities within the same water management concept.

PROPOSED INTERVENTIONS

The proposed intervention is the construction of a new rock dam. The associated technical studies will be required to ensure that the structure performs safely and effectively under local hydrological conditions. The main purpose of the intervention is to restore controlled water management in the area by allowing water to serve both the natural river course and the irrigation channels. The intervention will also include the rehabilitation and upgrading of irrigation channels, including cleaning, reshaping, repairing damaged sections, and improving water conveyance to ensure efficient and equitable distribution to agricultural plots. In this way, the intervention is intended to support agricultural production, improve seasonal water storage, reduce uncontrolled overflow, and maintain the environmental and local amenity functions of the river system.

The proposed works should therefore not be understood as a single civil structure only, but as a complete water management system that combines hydraulic regulation, storage, controlled release, and safe overflow behaviour.

A new rock dam

A central element of the proposal is the development of a new rock dam designed so that water can be directed in two functional pathways. One portion of the flow should continue along the natural river course, thereby preserving the hydrological continuity of the river and supporting the surrounding landscape, ecological processes, and tourism value. The second portion of the flow should be directed toward the irrigation channels to improve water availability for rice cultivation. This dual distribution concept is essential because the intervention must respond to both productive and environmental needs at the same time. The dam should therefore be designed as a regulating structure rather than as a simple barrier, with sufficient hydraulic flexibility to manage variable inflows during both dry and wet periods.

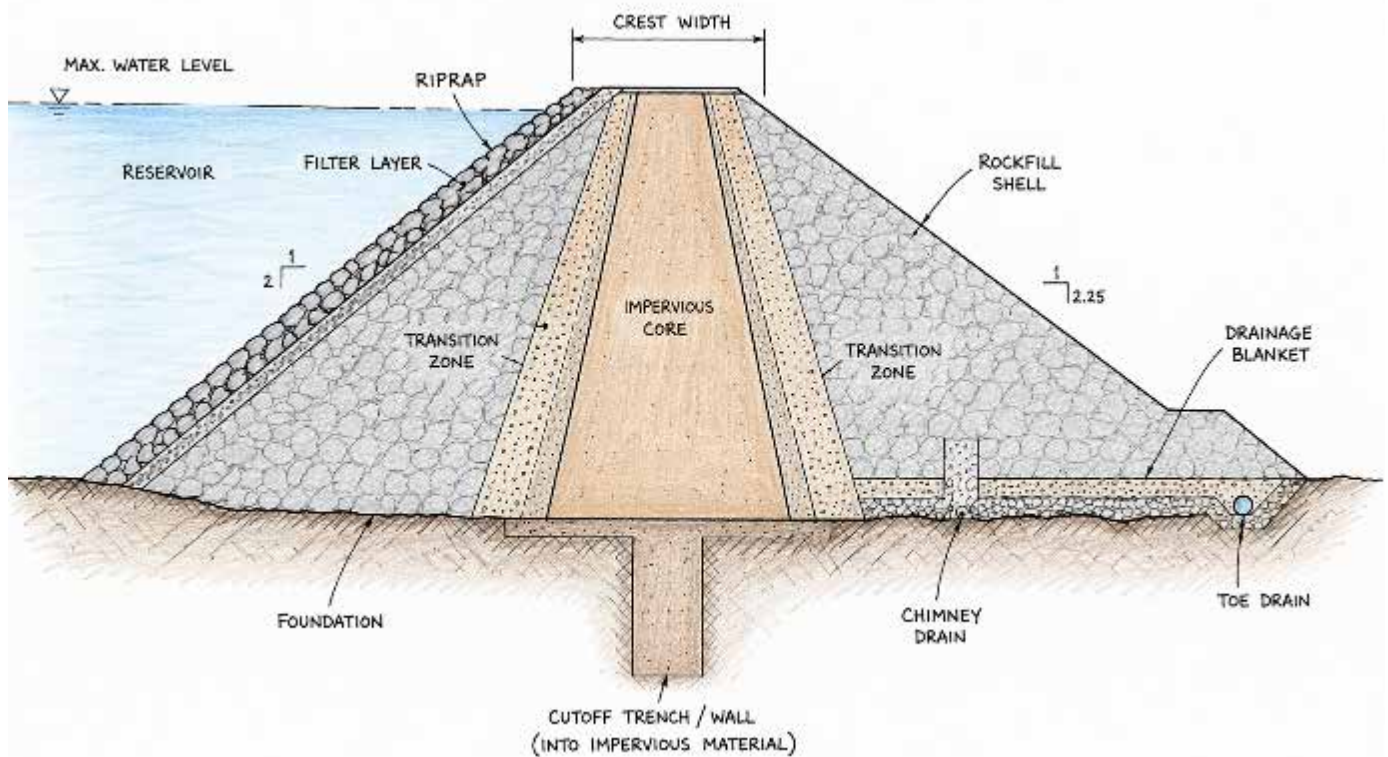


Figure 3. Conceptual section through a rock dam

Before the final design is undertaken, a detailed point cloud survey is proposed to establish an accurate ground model of the site and its wider hydraulic setting. This survey may be carried out using drone LiDAR, terrestrial scanning, photogrammetry, or a suitable combination of these methods, depending on access conditions and the level of detail required. The objective of the survey is to generate a reliable topographic basis for hydrological calculations, hydraulic assessments, and engineering design. The resulting terrain model should be detailed enough to support the determination of water storage volume, flood routing behaviour, required crest elevations, and the sizing of the embankment and associated release sections.

The point cloud survey should capture, at a minimum, the following critical features:

- the existing dam crest and surrounding structural remains, where present;
- the upstream basin, local drainage lines, and main flow paths contributing runoff to the storage area;
- the toe of slopes and adjacent terrain breaks that may influence embankment stability or erosion risk;
- existing erosion channels and scoured sections that may already function as flow concentration paths;
- low points that may act as future overflow or release sections under high water levels;
- adjacent roads, tracks, and rice field levels that may be affected by storage, overflow, or controlled release.

Using this survey base, hydrological calculations should be undertaken to determine how much water may arrive upstream and how the proposed system should respond under different rainfall conditions. This work should include a clear definition of the catchment area contributing runoff to the pond or reservoir, estimation of runoff from rainfall events, identification of relevant design events, and assessment of peak inflow hydrographs and runoff volume. The design events should include not only frequent or seasonal rainfall events, but also more extreme inflow scenarios that may challenge the structure during the rainy season. In addition, the hydrological review should assess the possible effect of sedimentation, blockage, or flow constriction where culverts, narrow sections, or debris-prone channels may influence the hydraulic performance of the system.

The results of these hydrological calculations will directly determine the required storage capacity behind the dam and, consequently, the main geometry of the embankment. Once the target storage volume is known, the structure should be sized in a technically robust manner. The embankment design should define the crest level, crest width, upstream slope, downstream slope, berm width or berm widths where necessary, and the freeboard above the design water level. It should also include toe protection and erosion control measures, and internal drainage if this is required to maintain structural performance and reduce seepage risks. These elements are essential for ensuring that the dam remains stable during prolonged wet weather, peak runoff events, and repeated seasonal loading.

A specific design requirement is that the dam should include a lower section that allows water to overflow above the structure in a controlled manner when incoming volumes from upstream become too high. This lower part should function as a deliberate overflow feature rather than an uncontrolled weak point. Its purpose is to protect the main body of the dam from unsafe overtopping and to guide excess water safely through a defined pathway during high-

flow conditions. The level, width, lining, and erosion resistance of this overflow section should therefore be established through the hydraulic design process and integrated into the overall embankment concept from the outset.

Another important component of the proposal relates to the lower part of the existing dam, which was created by water and now allows water to move toward the rice fields. Rather than treating this feature as an accidental erosion section, the intervention should reinterpret it as a controlled outlet, a lowered weir, or a managed breach section. Its exact location and operating level should be confirmed during the hydrological and hydraulic calculations. A detailed survey of this lowered section is needed to understand its current geometry and to determine how it can be incorporated into a more stable and better-controlled water release system. The design should then establish the desired operating level for release toward the rice fields and model the amount of discharge that would pass under different reservoir levels.

Depending on the outcome of the modelling, several technical options may be considered for this release section:

- retaining it as a broad-crested low section if this provides adequate and stable discharge control;
- formalising it as a lined overflow or release channel to improve flow guidance and reduce erosion;
- installing a gate, culvert, or small sluice where a higher degree of operational control is necessary.

The feasibility of using local materials for dam construction must also be verified before implementation. Although the concept is based on a rock dam and local material use is desirable from both cost and constructability perspectives, it cannot be assumed that available materials are automatically suitable for wet-season performance. A geotechnical and materials assessment is therefore proposed to determine whether the local borrow or excavation materials are sufficient to resist hydraulic forces, saturation, seepage, and erosion during the rainy season. This assessment should include sampling of the dam body material, as well as any nearby material sources that may be used for construction, berms, or repairs.

The geotechnical investigation should include testing for:

- particle size distribution;
- natural moisture content;
- compaction characteristics;
- shear strength;
- permeability and seepage behaviour;
- erodibility under flowing water and overtopping conditions.

These tests will indicate whether the proposed rock dam and its related embankment elements can be safely constructed with local resources or whether specific improvements, protection layers, drainage elements, or imported materials are required. This assessment is particularly important because the rainy season performance of the structure will depend not only on the geometry design but also on the behaviour of the construction materials under saturation and repeated flow stress.

In parallel with engineering design, an environmental and operational review should be carried out to ensure that the intervention functions safely within its broader landscape setting. This review should assess the impacts of the proposed works on nearby wetlands, vegetation, rice fields, and adjacent land uses. It should also verify practical access for construction, confirm that overflow and controlled release will not create downstream damage, and define how the system should be operated during the rainy season. Operational rules should clarify under what conditions water is retained, when releases are directed toward the rice fields, and how overflow is managed during high inflow events. Maintenance requirements should also be identified early, including the inspection of overflow sections, erosion-prone areas, outlet features, and sediment accumulation zones.



Figure 4. Existing situation / Conceptual design of the new dam

Overall, the proposed intervention combines physical work with the technical investigations required to produce a safe,

resilient, and evidence-based design. The construction of a new rock dam is the core measure, but its success depends on an integrated sequence of topographic surveying, hydrological analysis, geotechnical testing, embankment design, controlled outlet planning, and environmental and operational review. Taken together, these measures will support a water management system that can store water, regulate water flow toward both the natural river course and the irrigation channels, reduce hydraulic risk during peak inflow periods, and improve the reliability of water supply for agriculture while maintaining wider local and environmental benefits.

Irrigation Canal Clearing

To guarantee effective and fair distribution to agricultural plots, the proposed intervention also includes the rehabilitation and upgrading of the 2km irrigation channel through cleaning, reshaping, fixing damaged parts, and enhancing water conveyance.

Basically, there are two key activities to be carried out:

- Remove rocks, sediments, and solid waste from the watercourses as much as reasonably possible.
- Reshape the canal streamline and fix damaged parts, including embankments
- Install some barriers to capture solid waste (especially plastic) and facilitate regular maintenance.

During the detailed planning of this activity during the project implementation stage, surveyors and engineers are required to consider the following main constraints:

- Structural and Property Impacts: Assessment of adjacent infrastructure, including bridges, public utilities, and private properties.
- Hydrological and Tidal Dynamics: Monitoring of baseline water levels, tidal influences, and seasonal flow variations.
- Geotechnical and Sediment Profiles: Measurement of sediment accumulation and depth of mud/silt layers within the channel.
- Environmental and Ecosystem Management: Implementation of safeguards to minimise localised ecological disruption during work.
- Waste and Dredge Material Management: Evaluation of disposal logistics, including site proximity, permissible waste types, regulatory compliance, and associated disposal costs.
- Operational Methodology: Delivery of a coordinated execution plan combining terrestrial (out-of-water) machinery, amphibious/marine (in-water) equipment, and manual labour.



Figure 5. Existing irrigation canal filled with rocks from the previous upstream dam.

Various machinery can potentially be operated. Contractors and waste management companies will be engaged at an early stage to identify the most effective way to reach the goal in a safe and sustainable way.

OPERATIONS AND MAINTENANCE

Following the realisation of the intervention, it is essential to ensure adequate operation and maintenance, supported by a dedicated and sustainable budget. This is a critical condition for the long-term performance, resilience, and future viability of the project. Without proper maintenance, the effectiveness of the intervention may decline over time and reduce its intended benefits.

Responsibility for day-to-day maintenance will rest with the local community, which strengthens local ownership and ensures that the solution remains embedded in the local context. Where necessary, this should be supported by capacity building and clear governance arrangements to enable the community to effectively carry out these responsibilities. Embedding maintenance within local structures is key to sustaining project outcomes over the long term.

BUDGET

Table 40 Budget estimation for Output 3.6

DESCRIPTION	QUANTITY	UNIT PRICE (US\$)	COST (US\$)
Site investigation – surveys, assessments, and documentation, including hydrological assessment, runoff analysis, topographic and point cloud survey	1	24,000	24,000
Consultancy services and detailed design, including a new rock dam, hydraulic design of the storage and outflow system, embankment and crest design, controlled outlet and irrigation release, including ESS assessment	1	25,000	25,000

and report			
Geotechnical investigation and material testing	1	15,000	15,000
Environmental and operational review	1	10,000	10,000
Overflow section protection and erosion control	1	20,000	20,000
Construction of a new rock dam	1	66,000	66,000
Rehabilitation and upgrading of irrigation channels, including solid waste barrier installation	2km	15,000	30,000
Participatory monitoring and maintenance through Community Agreement with CPA	1	50,000	50,000
ESS Consultant for ESS monitoring and documentation	1	10,000	10,000
		TOTAL	250,000

Output 3.7 Climate-resilient WASH facilities built in Chambak Commune (16 units) and Te Teuk Pus geothermal area (2 units) with water supply connection, climate-smart design (e.g., elevated latrines), menstrual hygiene spaces, and universal access features for women and persons with disabilities.

INTRODUCTION

Deliverables	- Design of a gender-sensitive and disability inclusive WASH facility (Te Teuk Pus and Chambak) - Extension of water supply connection, repair of the existing water treatment plant and main water pipes (Chambak, Phnum Sruoch District).
Beneficiaries	Direct: 3,415 (Women: 2,149) Indirect: 27,460 (Women:14,003)
Budget	US\$ 850,000.00
Location	Trapeang Chour & Ta Sal Commune (Aoral District) and Chambak Commune (Phnum Sruoch District)
CPA	Ko Daun Tey and Chambak Community Protected Areas (CPAs)



PROBLEM STATEMENT

In the Te Teuk Pus geothermal site in Aoral District and six priority villages of Chambak Commune in Phnum Sruoch District, limited access to safe and climate-resilient sanitation continues to expose communities to significant health, safety, and dignity risks. Many households still lack proper latrines, water access remains unreliable, and existing facilities are highly vulnerable to extreme weather such as droughts or floods. Women, girls, and persons with disabilities are disproportionately affected, particularly due to the absence of menstrual hygiene spaces and inclusive design features. As existing local latrines lack a proper septic tank and water for flushing excrement and maintaining facility hygiene, there is a health risk of diseases. In addition, flooding may also cause land and water pollution by running off of untreated dirty water flow to forest areas and geothermal sites, which are located in protected areas. Without targeted investment in resilient WASH infrastructure, climate-related shocks will continue to worsen public health conditions, deepen vulnerability, and undermine the adaptive capacity of already at-risk rural communities.

LOCATION

The intervention will be implemented in the Te Teuk Pus geothermal site in Aoral District and six priority villages in Phnum Sruoch District, Kampong Speu Province. The districts lie within a climate-vulnerable transitional landscape between the Cardamom foothills and the agricultural plains, where communities face recurrent droughts, irregular rainfall, floods, and water scarcity. The selected villages were prioritised due to their limited sanitation coverage, inadequate water services, and high exposure to climate-related risks.

BENEFICIARIES

The output is expected to directly benefit approximately 3,400 people, including 2,100 women. Primary beneficiaries are sellers and visitors in Te Teuk Pus in addition to households in the six target villages that currently lack adequate sanitation and water access, with particular emphasis on women, girls, and persons with disabilities. The facilities will also benefit the wider community by improving hygiene, reducing exposure to water and sanitation-related health risks, and strengthening resilience to climate stress.

DATA COLLECTION

Input

The data collected for this output consisted of stakeholder consultations, site observation, and site photographs taken during field visits to the Te Teuk Pus geothermal site and Chambak Community. Additional surveys and technical assessments will be required during subsequent project phases to inform detailed design and implementation.

Stakeholder Consultations

A meeting was held on 24/05/2026 at the Chambak Commune, 25/05/2026 at the Trapeang Chour & Ta Sal Communes, and the minutes are included in Annex 1.

Site Records

Site observations and consultations with community representatives indicate that the proposed climate-resilient restrooms should address a broader set of needs than conventional sanitation facilities. In the target areas, sanitation infrastructure must be designed not only to provide basic toilet access, but also to respond to unstable and limited water supply, water contamination risks, limited lighting, inadequate hygiene conditions, and the specific needs of women, children, elderly persons, and persons with disabilities. The assessment highlighted that improved restroom facilities should enhance safety, privacy, dignity, cleanliness, and climate resilience, while also remaining functional

under conditions of limited water availability, practical for everyday use, and easy for communities to operate and maintain over time.

Attention is required for the design of women's sanitation spaces, as these facilities need to support menstrual hygiene management, childcare, and safe use during both daytime and evening hours. In addition, the site review confirmed the importance of integrating inclusive and climate-smart design measures so that the restrooms remain functional during periods of water stress or heavy rainfall.

Based on these observations, the climate-resilient WASH facilities should include the following features and improvements:

- Adoption of a low-water latrine system suitable for limited and inconsistent water supply, with elevated latrine structures where required to enhance resilience against flooding and seasonal waterlogging
- Installation of solar-powered lighting to improve safety, visibility, and user confidence during early morning, evening, and low-light conditions, while also providing an energy-efficient solution suitable for rural settings.
- Installation of rainwater harvesting systems with storage tanks to improve water availability for hygiene and cleaning purposes
- Provision of adequate space within the women's sanitation facilities to accommodate mothers with young children, including sufficient room for changing, cleaning, and menstrual hygiene needs, while ensuring privacy and user comfort
- Provision of a designated, universally accessible sanitation unit to ensure safe access and inclusive use for people with disabilities.
- Integration of appropriate waste management facilities within the WASH facility to enable safe, hygienic, and discreet disposal of sanitary materials and general waste.
- Adequate handwashing facilities, including sinks and soap, throughout the WASH facility to promote proper hygiene practices and support safe and dignified use for all users.
- Where appropriate, ensure water storage containers are covered to protect stored water from contamination and improve hygiene and water quality

Together, these improvements will help ensure that the restroom facilities are more resilient to climate impacts, more responsive to community needs, and more suitable for safe, inclusive, and dignified use by all intended beneficiaries.

Water treatment plant and water supply systems

The field visit also verified that the existing water treatment plant and main water pipe are in place, but these are currently dysfunctional and do not adequately provide clean water to downstream villages in Chambak Commune. The community representatives shared that they are aware of the importance of this facility, but they have limited technical and financial capacity to make it operational. Due to this situation, households in Chambak depend on rainwater for domestic use, without enough purification. The community representatives also raised the necessity to expand the existing water supply system to vulnerable houses near the commune's water point in the downstream.



Figure 1. Partially damaged water treatment plant and main water pipe

PROPOSED INTERVENTIONS

WASH facilities

Given the limited and inconsistent water supply in the project areas, particularly for flushing, the proposed intervention adopts a sanitation approach that is technically appropriate for rural conditions, responsive to climate risks, and realistic in terms of long-term operation and maintenance. The intervention is designed not only to improve access to toilets, but also to strengthen public hygiene, support safer use of shared facilities, and reduce the exposure of communities to sanitation-related health risks. It is intended for public and community-serving locations, especially those with regular visitors and collective use, including eco-tourism areas, schools, pagodas, and other public gathering points.

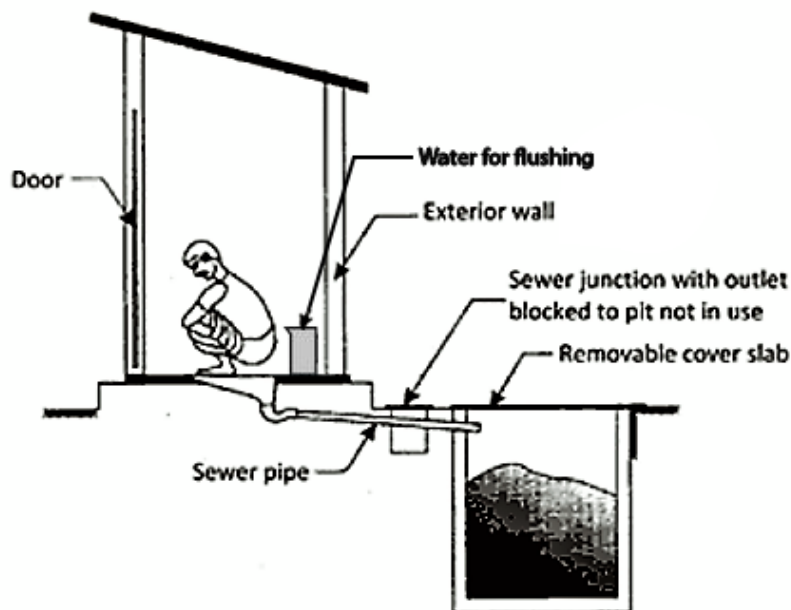


Figure 2. Conceptual diagram of a pour-flush latrine

The sanitation system proposed is based on a pour-flush latrine with a twin pit system, which is suitable for areas with limited and variable water availability while providing improved user comfort and hygiene. This system requires only a small quantity of water per use and allows for on-site waste treatment through alternating pits, supporting safer decomposition and easier long-term management. Compared to fully water-dependent systems, this approach reduces reliance on continuous piped water while maintaining acceptable sanitation standards. In addition, the intervention integrates appropriate drainage and hygiene measures to ensure that the overall system remains practical, functional, and more resilient under seasonal flooding and changing climate conditions.

The adoption of a pour-flush twin pit system is based on the understanding that a minimal but reliable water source is available to support flushing requirements. In locations where water availability is found to be insufficient to sustain even low-water sanitation systems, a transition to dry or no-flush options, such as Ventilated Improved Pit (VIP) latrines, may be considered. As such, the final sanitation system configuration will be determined during detailed site investigations, taking into account actual water availability, user demand, and long-term operational feasibility.

Each sanitation unit will be designed to provide a safe and hygienic user environment while remaining simple enough for routine maintenance by locals. Internal partitions will ensure user privacy in a practical and maintainable way, and the layout will be arranged to facilitate cleaning, supervision, and continued usability in public settings. The structures will also be adapted to local topography and drainage conditions. Where sites are affected by poor drainage or seasonal waterlogging, the facilities may be elevated to protect the superstructure, improve runoff management, and reduce damage during periods of intense rainfall.

Wastewater management will be addressed carefully during the detailed design phase. For the proposed pour-flush latrine system, a twin pit (double leach pit) configuration will be adopted to support safe, low-cost, and sustainable on-site treatment. In this system, wastewater from the toilet, including blackwater from flushing, is directed to one of two leach pits via a junction chamber. The pits are used alternately: when the first pit becomes full, the flow is diverted to the second pit, allowing the filled pit to rest. During this resting period, the contents undergo natural decomposition and stabilisation, gradually transforming into a safer, partially sanitised soil-like material that can be removed with reduced health risk. This alternating system allows for continuous use of the facility without interruption while minimising the need for frequent desludging services.

The design and placement of the pits will be determined based on site-specific conditions to promote safe infiltration and minimise risks to surrounding land and water sources. Key considerations include soil permeability, drainage patterns, seasonal groundwater levels, and appropriate distances from nearby wells, structures, and water points. Pits will be constructed using permeable materials, such as open-joint brickwork or perforated concrete liners, to facilitate controlled infiltration, while the upper sections will be fully lined and covered to ensure structural stability and prevent contamination from surface runoff. Adequate spacing between pits will be maintained to reduce the risk of cross-contamination, and the system will be integrated into the overall site layout to ensure that sanitation improvements do not create unintended environmental or health impacts. This integrated approach supports a practical, resilient, and context-appropriate wastewater management solution for rural and climate-vulnerable settings.

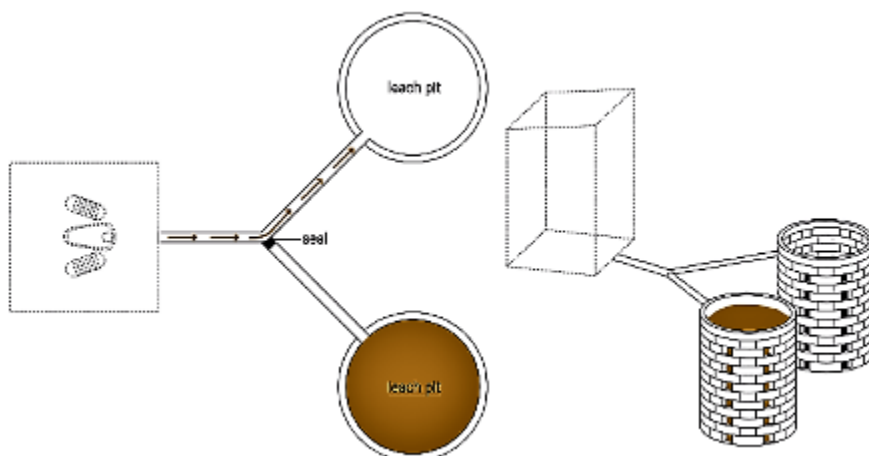


Figure 3. Schematics of twin pits for pour flush latrine

Septic tanks may also be considered as an alternative treatment option where enough water supply and maintenance capacity are available. However, septic systems typically involve higher construction costs, more complex construction requirements, and require regular desludging, making them less suitable for low-resource settings. In most cases, the twin pit system provides a simpler and more sustainable solution. Final system selection should be confirmed based on site-specific conditions and operational considerations.

The WASH facilities are proposed to comprise a total of 18 toilet units distributed across Te Teuk Pus geothermal site in Aoral District and six villages in Phnum Sruoch District. The allocation of units per village will be determined based on population size, demand, and site-specific conditions. Given the relatively small number of units per village, the design approach emphasises compact, efficient, and easy-to-maintain facilities that can be adapted to local conditions and patterns of use.

A central feature of the WASH facility is the integration of rainwater harvesting into the building's design. The roof will be constructed as a gabled structure capable of efficiently collecting rainwater and directing it into a storage tank for non-drinking uses. The rainwater harvesting system will include appropriately sized storage tanks to capture and retain as much rainwater as feasible during the wet season. This will help support facility use during drier periods and reduce dependence on limited water sources. Tank capacity will be determined based on-site conditions, rainfall patterns, and expected demand. This harvested water can support flushing, handwashing, cleaning, and general hygiene needs, thereby reducing dependence on limited freshwater sources. The roof design will be coordinated with other building systems, including solar panel installation, to ensure that water collection efficiency is maintained while maximising the use of available resources. A simple solar-powered lighting system will be incorporated to provide illumination inside and around the facility, improving safety, visibility, and user confidence during early morning, evening, and low-light conditions. This approach offers an energy-efficient and reliable solution that does not depend on grid electricity, making it well-suited for rural and off-grid locations while supporting low-maintenance operations. By integrating these systems into the facility itself, the design improves functionality without requiring more complex infrastructure, which is particularly valuable in areas affected by seasonal water shortages.

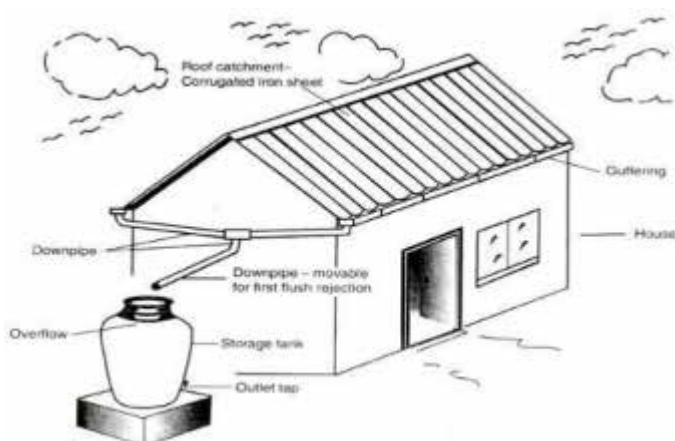


Figure 4. Schematic Diagram of Rooftop Rainwater Harvesting System



Figure 5. Schematic Diagram of Off-grid Solar Power System

Handwashing stations will be installed close to exits so that users can wash their hands immediately after using the facilities. These stations will be connected to soak pits to allow safe disposal of greywater and to prevent stagnant water around the structure. Positioning handwashing points near the exit is important from both a behavioural and public health perspective, as it encourages regular handwashing and helps reduce the spread of disease in frequently

used public places. The intervention, therefore, treats sanitation and hygiene as linked functions rather than separate components.

Inclusivity is another major design principle of the intervention. At least one accessible unit will be incorporated within each WASH facility, with ramps, wider entrances, and handrails to support people with disabilities, older people, and others with reduced mobility. Where feasible, this unit may be designed as a multi-functional space that can also accommodate additional needs, such as childcare and baby changing, to maximise usability within the limited number of units. The intention is not only to meet a technical requirement, but to ensure that public sanitation can genuinely be used by all members of the community. By integrating accessible design from the outset, the intervention promotes equity and more dignified access to services.

The intervention will also include menstrual hygiene management features so that women and girls can use the facilities safely and with dignity. This includes provision for private washing space, appropriate internal layout, and practical design considerations that respond to the needs identified during site observations. By incorporating menstrual hygiene considerations, the project improves not only sanitation infrastructure but also the inclusiveness and acceptability of the facilities.

Detailed design and implementation will require the involvement of qualified professionals. A civil engineer will be needed to confirm structural integrity, assess drainage conditions, and guide the design of foundations, slabs, pits, tanks, and associated infrastructure. An architect will be required to ensure that the layout, accessibility measures, ventilation, roofing, and overall configuration comply with appropriate building standards and spatial requirements. Their input will be essential to adapt the intervention to the physical conditions of each site and to ensure that the final facilities are safe, technically sound, and fit for purpose.

Overall, the proposed intervention offers an integrated response to sanitation, hygiene, water reliability, and inclusive access in climate-stressed rural settings. By using a low-water sanitation system, incorporating rainwater harvesting, improving wastewater management, and embedding accessibility and menstrual hygiene considerations into the design, the project aims to deliver facilities that are practical, dignified, and more resilient over time. The intervention is therefore well aligned with the needs identified during field observations and provides a realistic pathway toward safer, more sustainable WASH services in the target villages.

Water treatment plant and water supply systems

To enhance the climate resilience of water supply systems serving vulnerable households near the Chambak community water point, the proposed intervention includes the rehabilitation of the existing water treatment facility and its primary distribution pipeline. To complement these repairs, the system's coverage will be expanded via localized, low-scale climate-resilient engineering work. These interventions should be conducted based on the detailed assessment during the project implementation stage.

OPERATIONS AND MAINTENANCE

Following the realisation of the intervention, it is essential to ensure adequate operation and maintenance, supported by a dedicated and sustainable budget. This is a critical condition for the long-term performance, resilience, and future viability of the project. Without proper maintenance, the effectiveness of the intervention may decline over time and reduce its intended benefits.

Responsibility for day-to-day maintenance will rest with the local communities/CPAs, which strengthens local ownership and ensures that the solution remains embedded in the local context. Where necessary, this should be supported by capacity building and clear governance arrangements to enable the community to effectively carry out these responsibilities. Embedding maintenance within local structures is key to sustaining project outcomes over the long term.

BUDGET

Table 41 Budget estimation for Output 3.7

DESCRIPTION	QUANTITY	UNIT PRICE (US\$)	COST (US\$)
Pre-construction studies and site investigations (topographic survey, soil testing, groundwater assessment, environmental and flood assessment, site verification)	1	25,000	25,000
Design consultancy services (architectural, civil/structural, accessibility design, construction supervision, and project management), including ESS assessment and report	1	35,000	35,000
Construction of WASH facility structure (including site clearing, earthworks, foundations, structure, roofing, partitions, basic finishes and lighting fixtures, inclusive and hygiene facilities (PWD-accessible unit, ramps, handrails, internal fittings, waste bins), and plumbing and water system	18	10,000	180,000

(handwashing station fixtures, taps, and piping))			
Sanitation system (pour-flush latrine with twin pit system, including pits, lining, junction chamber, piping, and toilet fixtures)	18	5,500	99,000
Rainwater harvesting system (roof catchment, gutters, downpipes, filtration, storage tanks, and distribution system)	18	3,500	63,000
Simple solar power system (solar panels, mounting, battery storage, electrical works, and training)	18	5,000	90,000
Water Treatment Plant and main water pipe repair, and water supply system extension to vulnerable households (Chambak)	1	159,000	159,000
Project management & supervision – technical coordination, supervision, and reporting	1	89,000	89,000
Participatory monitoring and maintenance through the Community Agreement with CPA	1	100,000	100,000
ESS Consultant for ESS monitoring and documentation	1	10,000	10,000
		TOTAL	850,000

Annex C Environmental and Social Risk Screening, Impact Assessment and Environmental and Social Management Plan — Demonstrating Compliance with the Adaptation Fund's Environmental and Social Policy (ESP)

Compliance with Environmental and Social Safeguards

The proposed Project complies with the Adaptation Fund's Environmental and Social Policy (ESP), Gender Policy, and Guidance for Implementing Entities. Environmental and social safeguards (ESS) are used to prevent and mitigate potential risks and adverse impacts from project activities. Project outputs and activities were defined through a participatory process to ensure that no components will negatively affect priority biodiversity areas or critical ecosystems. In accordance with the AF's ESP, Gender Policy, and UN-Habitat's Environmental and Social Safeguard System (ESSS 3.1), UN-Habitat and its partners must conduct risk screenings and impact assessments for all activities, including those with minimal risk of unintended harm.

Purpose

This Annex demonstrates the project's alignment with the AF's ESP and explains its Risk Category B classification, supported by a detailed assessment of potential risks, impacts, and related safeguard measures. It also presents the Environmental and Social Management Plan (ESMP), which outlines strategies to avoid or mitigate risks throughout the project lifecycle. During implementation, the project team will monitor and address risks identified during formulation and remain alert to new risks through regular site visits, annual ESP screenings, and periodic assessments by an external consultant using established templates from recent Adaptation Fund projects in Cambodia. The Annual Project Performance Report (PPR) will document ESMP status, measures taken, residual impacts, and remedial actions. Any identified risks will prompt immediate corrective action.

Methodology

All proposed project activities were screened against the AF ESP's 15 principles to identify potential environmental and social risks and assess impacts. Where risks were found, an Environmental and Social Impact Assessment (ESIA) was conducted and is summarised in Table 42. The Environmental and Social Management Plan (ESMP, Table 43) outlines mitigation measures, monitoring indicators, and baseline conditions. The analysis uses disaggregated data on climate-related needs and constraints for marginalised and vulnerable groups, especially women and youth. Activity prioritisation and risk verification were carried out through participatory stakeholder consultations and community-based planning. This risk screening and impact assessment process is mandatory under both the Adaptation Fund's ESP and UN-Habitat's Environmental and Social Safeguard System (ESSS 3.1), and applies to every project activity, regardless of the level of risk.

Summary of Environmental and Social Impact Assessment (ESIA)

Table 42 Summary of Environmental and Social Impact Assessment (ESIA)

ESP Principle	Screening Result	Potential Impacts and Risks
Principle 1. Compliance with the Law	Medium risk (Components 1 and 3)	Compliance with national and local law has been verified through extensive consultation with authorities. Without proactive mitigation, physical construction under Outputs 1.3 and 3.1–3.7 could inadvertently violate local or national regulations, and reforestation without a formal Ecosystem-based Adaptation Management Plan (EbAMP) informed by site inspections could introduce invasive alien species and damage existing ecosystems, risking reputational harm to the Ministry of Environment, UN-Habitat, and the Adaptation Fund.
Principle 2. Access and Equity	Medium risk (project-wide)	All four components support poor and vulnerable populations, but capacity-building and knowledge-sharing may fail to achieve equitable representation of women, youth, and persons with disabilities. Protective infrastructure under Outputs 1.3 and 3.1–3.7 will not automatically ensure equitable benefit-sharing unless marginalised groups are meaningfully engaged in design and implementation. Selection of demonstration plots and value-chain pilots under Output 2.2 risks exclusion if dominated by local elites or located in inaccessible areas; a transparent, criteria-based selection process will be used (training commitment, geographic accessibility, peer-training capacity, and land's ecological/flood-resilience suitability). A residual risk remains that marginalised individuals are overlooked for training or labour opportunities despite Gender Action Plan targets.
Principle 3. Marginalized and Vulnerable Groups	Medium risk (project-wide)	As above under Principle 2: risk that women, indigenous people, persons with disabilities, the elderly, and youth are excluded from consultations, capacity-building, and equitable benefit-sharing unless proactively and transparently engaged in site and beneficiary selection.
Principle 4. Human Rights	Low risk (project-wide)	Risks associated with Components 1, 2, and 3 relate primarily to gender equality, core labour rights, and the potential for involuntary resettlement (see Principles 5, 6, and 8

ESP Principle	Screening Result	Potential Impacts and Risks
		below). Cambodia demonstrates a strong commitment to international human rights standards, having ratified core instruments including CEDAW and the ICCPR, with continuous oversight by a UN Special Rapporteur on Human Rights since 1998, evidenced by regular field visits and reporting that provides a transparent monitoring environment for project implementation. Of six remaining unratified instruments, five are Optional Protocols where the primary convention is already in force; the International Convention on the Protection of the Rights of All Migrant Workers remains the only unratified convention, but site assessments confirm no undocumented migrant populations currently reside within the target areas, nor is an influx anticipated during the project lifecycle. Notwithstanding this, precautionary mitigation measures are integrated into the relevant safeguard principles.
Principle 5. Gender Equality and Women's Empowerment	Medium risk (project-wide)	A general risk exists that women and other marginalised groups have insufficient participation due to socio-cultural norms and disproportionate household care burdens — Cambodian women provide on average 3.5 more hours of unpaid domestic work per day than men, and government departments remain male-dominated. Without targeted mitigation, women risk systemic barriers to project benefits, including gender-based wage gaps and livelihood interventions that overlook the "double burden" of domestic and paid work; in agriculture, for comparison, only around 10% of extension services reach the women who make up half the workforce. Annex D provides further detail on gender (in)equality in Cambodia.
Principle 6. Core Labour Rights	Low risk (Outputs 1.3, 3.1–3.7)	Cambodia has ratified all eight ILO core labour conventions, so the risk to core labour rights is generally low. The project will engage unskilled and semi-skilled labour from local communities, and CPA Committees will be mobilised for low-tech construction and maintenance tasks such as eco-trail signboard installation, firebreak clearing, and nursery-supported native reforestation. Enforcement and compliance remain limited, particularly for the engineering/construction subcontractors engaged for physical works under Outputs 1.3 and 3.1–3.7 (rather than the project directly hiring people). Potential risks include sub-minimum-wage compensation, child or underage labour, gender-based discrimination, and inadequate Occupational Health and Safety (OHS) provisions and protective equipment. Female labour force participation (69.6%) trails male (82.1%); women are concentrated in manufacturing and retail rather than construction, more often earn below KR400,000 (\$100) per month than men (55.1% versus 44.9%), and informal employment is widespread (88.3% of workers nationally, higher still in rural areas), alongside frequent breaches of the 48-hour statutory working week set out in Article 137 of Cambodia's labour law.
Principle 7. Indigenous Peoples	Medium risk (Outputs 1.1–1.3, 2.1–2.3, 3.1–3.2)	The Indigenous Suoy community resides within the Te Teuk Pus geothermal area and relies on the site for traditional livelihoods and eco-tourism income. Without robust safeguards, there is a risk of marginalising the Suoy in decision-making, failing to incorporate indigenous knowledge into infrastructure design, and enabling cultural commodification of indigenous practices. Maladaptation during the rehabilitation of the geothermal site (Outputs 3.1–3.2) could degrade the site's ecological and aesthetic value, and language barriers could exclude the Suoy from capacity-building efforts, undermining sustainability.
Principle 8. Involuntary Resettlement	Low risk (Outputs 3.3 and 3.5)	Pond rehabilitation under Output 3.3 will proceed without land acquisition or physical displacement, but fencing around the pond perimeters will restrict previously open livestock access to water. This rating was updated from "No Risk" at the Concept Note stage following May 2026 site assessments confirming that fencing is needed to protect infrastructure. Eco-trail and firebreak works under Output 3.5 could cause temporary access restrictions for communities and tourists during construction.
Principle 9. Protection of Natural Habitats	Medium risk (Outputs 3.1–3.7)	Cambodia has 49 protected areas across 8 categories and biodiversity corridors covering over 7.4 million hectares (41 % of the country). Aoral District includes part of the Central Cardamom Protected Forest and Aoral Wildlife Sanctuary, two conservation zones of national and regional importance for watershed protection and climate regulation; Phnum Sruoch District includes Kirirom National Park (283.75 km²), Cambodia's first national park. Initial screening indicates minimal risk of habitat and biodiversity loss. Still, construction near protected forests could affect ecosystem services and NTFP-based livelihoods in the absence of mitigation measures, and heavy machinery/earthworks that disturb land pose risks to habitats and biodiversity. Reforestation under Output 3.2 requires a rigorous EbAMP with site-specific species selection to prevent unintentional introduction of invasive or incompatible alien species. Significant canopy loss in Kampong Speu's key biodiversity corridors has already disrupted hydrological cycles and diminished forest carbon sequestration capacity, exacerbated by encroachment, shifting cultivation, and enforcement gaps, compromising erosion control and watershed regulation and undermining community resilience to climate shocks.
Principle 10. Conservation of Biological	Medium risk (Outputs 3.1–	As under Principle 9: construction near the Central Cardamom Protected Forest, Aoral Wildlife Sanctuary, and Kirirom National Park risks affecting biodiversity and ecosystem services in the absence of rigorous site screening and a species-appropriate EbAMP for

ESP Principle	Screening Result	Potential Impacts and Risks
Diversity	3.7)	reforestation activities.
Principle 11. Climate Change	Low risk (Components 2 and 3)	The Project is designed to deliver adaptation benefits, but investments under Components 2 and 3 carry limited climate-related risk if risk mitigation measures are not taken or are unsuccessful. Absent safeguard protocols, there is a risk of maladaptation stemming from technically deficient designs or improper operationalisation of infrastructure, which may not only reduce projected adaptation benefits but also displace climate-related vulnerabilities to adjacent areas and communities. Planning that fails to incorporate high-resolution climate projections and account for future uncertainty may compromise the structural integrity and adaptive capacity of small-scale infrastructure. Local transportation of materials and equipment and methane emissions from improperly disposed construction waste could result in limited greenhouse gas emissions if mitigation measures are not implemented. Infrastructure failure or unintended transfer of climate risk may cause reputational damage and erode trust between beneficiary communities, implementing/executing entities, and government authorities.
Principle 12. Pollution Prevention and Resource Efficiency	Low risk (Components 2 and 3)	Without proper waste management and mitigation measures, there is a risk of small-scale, localised air, water, land, and noise pollution in and around construction sites arising from routine, non-routine, and accidental activities. Construction activities may generate noise and solid waste—typically paper/cardboard, wood, textiles, glass, plastics, metals, soil/rubble, concrete, and similar materials. However, no hazardous materials are to be used on this project. In many cases in Cambodia, construction-related waste is not correctly or sustainably disposed of; without sufficient capacity-building on solid waste management (SWM) and WASH for local authorities and communities, invested eco-tourism sites and infrastructure (irrigation systems, canals, WASH facilities) risk being inappropriately managed after the project, potentially causing water contamination, the spread of vector-borne diseases (e.g. dengue fever) from stagnant water, and exacerbated flooding risks.
Principle 13. Public Health	Low risk (Components 2 and 3)	The majority of project investments focus on protective ecosystem services; however, the project acknowledges inherent Community Health and Safety risks during construction and operation. During construction, localised hazards, heavy vehicle traffic, dust emissions, and risk of accidental drowning in open excavation sites or water bodies threaten both residents and livestock, and improper storage or disposal of construction or hazardous materials (e.g. oils, paints, untreated effluents) could contaminate soil and water. In the post-construction phase, the primary risk stems from structural failure or maladaptation caused by deferred maintenance of irrigation canals or water ponds, which could exacerbate climate vulnerability; substandard septic management or discharge protocols for WASH facilities risk contaminating agricultural land and local water sources, directly jeopardising public health and food security. Climate-smart agriculture piloting under Output 2.3 introduces risks associated with agrochemical handling; inadequate Integrated Pest Management (IPM) or improper fertiliser/pesticide application may cause chronic health issues for beneficiaries and neighbouring communities.
Principle 14. Physical and Cultural Heritage	Low risk (Outputs 1.1–1.3, 2.1–2.3, 3.1–3.2)	Consistent with Principle 7, the project is committed to avoiding alteration, damage, or removal of indigenous and culturally valuable assets, informed by extensive consultation with the Suoy community. Absent safeguards, there is a risk of disturbing unrecorded cultural sites, artefacts, or spiritual areas through culturally inappropriate infrastructure, degradation of ecotourism values, cultural commodification, or conflict over site governance and benefit-sharing without Free, Prior, and Informed Consent (FPIC).
Principle 15. Land and Soil Conservation	Low risk (Components 2 and 3)	Land disturbance across Components 2 and 3 poses soil and groundwater contamination risks: climate-smart agriculture piloting (Output 2.3) without strict IPM adherence; dredging of sediment from geothermal sites, canals, and waterways (Outputs 3.1, 3.3, 3.4, 3.6) that could cross-contaminate agricultural land if reused as embankment fill without quality control; WASH facility installation (Output 3.7) risking leaching from substandard septic design; and reforestation (Output 3.2) risking soil destabilisation from unsuitable species or poor planting technique.

Environmental and Social Management Plan (ESMP)

Grounded in the risk description and category identified through the ESIA (Table 42), this section establishes a structured plan of mitigation and management measures, mapped against the AF's ESP principles and paired with quantifiable monitoring indicators, baseline conditions, and institutional responsibilities to ensure verifiable compliance.

Table 43 Environmental and Social Management Plan (ESMP)

ESP Principle	Risk Category	Identified risks	Safeguard Measures	Monitoring Indicator(s)	Baseline Condition
Principle 1.	Medium	Executing	Prior to physical works under	Permits and	No

ESP Principle	Risk Category	Identified risks	Safeguard Measures	Monitoring Indicator(s)	Baseline Condition
Compliance with the Law	risk	entities/subcontractors could violate national or local laws; reforestation without safeguards could introduce invasive species and damage existing ecosystems.	Output 1.3 and Outputs 3.1–3.7, the project will secure all statutory permits, environmental clearances, and technical approvals; native reforestation under Output 3.2 is contingent on formal EbAMP approval. UN-Habitat will maintain oversight to confirm all civil works and reforestation occur exclusively within legally permitted, agreed sites.	approvals obtained prior to construction; EbAMPs approved by relevant stakeholders prior to planting.	permits/approvals yet obtained; no EbAMP yet approved.
Principle 2. Access and Equity	Medium risk	Construction may temporarily disrupt access to public spaces and utilities; women, indigenous people, and other marginalised groups risk under-representation or exclusion from consultations, training, and site selection.	Minimise disruption via alternative access routes and compressed construction schedules; implement continuous, inclusive consultation before, during, and after construction/planting (Outputs 1.3, 3.1–3.7); apply transparent, criteria-based site selection for the 6 livelihood demonstration plots (Output 2.3) and 18 WASH facilities (Output 3.7); establish a culturally appropriate, accessible Grievance Redress Mechanism (GRM).	Gender-disaggregated attendance lists for consultations/training; site selection criteria and lists of selected sites agreed among IE, EE, and local authorities; log of grievances received and resolved.	Women and marginalised populations currently excluded from education/training opportunities; unequal access to investment benefits due to cultural norms and elite influence over site/beneficiary selection.
Principle 3. Marginalized and Vulnerable Groups	Medium risk	Same as Principle 2: temporary disruption to access/services, and risk of inadequate representation or exclusion of vulnerable groups from consultations, training, and demonstration-site selection.	Minimise disruption to community mobility and livelihoods via alternative access routes and compressed construction timelines; implement a continuous, inclusive consultation framework before, during, and after construction/planting activities (Outputs 1.3, 3.1–3.7) to integrate the needs of women, indigenous people, persons with disabilities, the elderly, and youth and secure equitable benefit distribution; apply a transparent, criteria-based selection process for livelihood demonstration plots and WASH facilities; and establish a culturally appropriate, accessible GRM.	Gender- and vulnerability-disaggregated attendance lists for consultations, training, and workshops; documented site-selection criteria and lists of selected sites agreed among IE, EE, and local authorities; log of grievances received and resolved.	Marginalised populations, including indigenous people and persons with disabilities, are currently excluded from education and training opportunities and from investment benefits due to cultural norms and the influence of local decision-makers.
Principle 4. Human Rights	Low risk	Risks are concentrated in gender equality, core labour rights, and involuntary resettlement (see Principles 5, 6, and 8).	Continuous human rights monitoring across all interventions, with immediate corrective action in consultation with affected communities and stakeholders if violations occur; standardised human-rights and labour-law clauses in all subcontractor/vendor contracts; training/guidance on the AF's ESP, Gender Policy, and the project's ESMP provided at subcontractor onboarding.	Regular monitoring reports with photographs and, where necessary, informal discussion; subcontractor/consultant contracts including required ESP clauses.	No human rights violations recorded to date.
Principle 5. Gender	Medium risk	Structural barriers may limit women's	Proactive measures aligned with the Gender Action Plan	GAP with gender targets; gender-	Cultural norms currently

ESP Principle	Risk Category	Identified risks	Safeguard Measures	Monitoring Indicator(s)	Baseline Condition
Equality and Women's Empowerment		and other marginalised groups' participation in consultations and decision-making; risk of gender-based wage gaps and unequal access to project employment.	(GAP) to mitigate barriers to women's participation, including child-friendly training spaces for women attending with young children, context-specific scheduling, and physically accessible venues; gender-disaggregated attendance monitoring to track progress against GAP targets and refine mobilisation strategies.	disaggregated attendance lists for consultations, training, and workshops.	impede women's participation in consultations and decision-making; risk of systemic discrimination or unequal benefit access.
Principle 6. Core Labour Rights	Low risk	Risk that labourers are mistreated through breaches of the eight ILO core labour standards, even unintentionally.	All personnel engaged under formalised, legally binding contracts explained verbally in workers' native language; access to a confidential, anonymous GRM without fear of retaliation; enforcement of minimum wage compliance and equal pay for equal work; construction restricted to daylight hours; mandatory PPE and fully stocked first-aid kits with displayed emergency contacts at all sites.	Functional GRM; log of grievances received and resolved; monthly monitoring reports; subcontractor/consultant contracts with required ESP clauses.	Risk of breaches of labour law and mistreatment based on literacy, gender, or age; potential exposure to unsafe working practices.
Principle 7. Indigenous Peoples	Medium risk	Risk of marginalising the Indigenous Suoy community in consultations and decision-making, cultural commodification of their practices, and maladaptation degrading the Te Teuk Pus site and related livelihoods.	Free, Prior, and Informed Consent (FPIC) process for all interventions; continuous, iterative consultation across pre-construction, implementation, and post-intervention phases to integrate local concerns and ensure equitable benefit distribution; accessible, culturally sensitive GRM anchored in existing local feedback mechanisms.	Functional GRM; log of grievances received and resolved.	Indigenous peoples currently excluded from decision-making and capacity-building, facing language barriers and limited livelihood/eco-tourism management capacity.
Principle 8. Involuntary Resettlement	Low risk	Pond fencing may restrict previously open livestock access to water; eco-trail works may temporarily restrict community and tourist access during construction.	Install external livestock watering troughs after confirming needs with neighbouring households; establish formal pond management rules and trough maintenance responsibilities with the CPA Committee before civil works; guarantee zero physical displacement, verified through pre- and post-site assessments; pre-site land-use verification for eco-trail works, with construction scheduled during low-tourism seasons or with temporary walkways preserving access.	Pre- and post-site inspection reports; monthly monitoring reports; log of grievances received and resolved.	Construction without safeguards could displace livestock watering access and community access to natural assets.
Principle 9. Protection of Natural Habitats	Medium risk	Construction near protected forest areas could disrupt ecosystem services and NTFP-dependent livelihoods; machinery, earthworks, and	Pre-construction site screening and boundary verification to map demarcation and prioritise Nature-based Solutions (NbS); comprehensive EbAMP based on site-specific ecological assessment prior to reforestation, covering species suitability and invasive-species	Pre- and post-site inspection reports; approved EbAMP; monthly monitoring reports.	Natural environment currently threatened by infrastructure development pressures.

ESP Principle	Risk Category	Identified risks	Safeguard Measures	Monitoring Indicator(s)	Baseline Condition
		reforestation risk damaging habitats or introducing invasive species.	prevention; post-intervention inspection to confirm habitat stabilisation and absence of residual risk.		
Principle 10. Conservation of Biological Diversity	Medium risk	Same as Principle 9: construction near protected forest areas and reforestation activities risk habitat and biodiversity damage and invasive species introduction.	Conduct rigorous pre-construction site screening and boundary verification to map physical demarcation and establish environmental and social risk baselines, prioritising infrastructure rehabilitation using Nature-based Solutions (NbS); formulate a comprehensive EbAMP based on site-specific ecological assessment prior to any native reforestation to ensure species suitability and set out invasive-species prevention protocols and a long-term biodiversity management plan; operationalise post-inspection of project sites to verify the absence of residual risk and confirm successful habitat stabilisation.	Pre- and post-site inspection reports; approved Ecosystem-based Adaptation Management Plan (EbAMP); monthly monitoring reports with photographs.	The natural environment, including the Central Cardamom Protected Forest, Aoral Wildlife Sanctuary, and Kirirom National Park, is currently threatened by infrastructure development pressures, encroachment, and land degradation.
Principle 11. Climate Change	Low risk	Deficient engineering or hydrological assumptions could cause maladaptation and shift climate risk to other areas; material transport and equipment use may generate limited greenhouse gas emissions.	Pre- and post-site inspections to establish a risk baseline and embed mitigation into infrastructure design and verify no unforeseen impacts; prioritise sustainable, locally sourced construction materials and Nature-based Solutions engineered to reduce climate vulnerability versus baseline; prioritise low-carbon travel and local/remote monitoring to reduce fuel use.	Bidding/tender documents identifying sustainably and locally sourced materials; pre- and post-inspection reports; stakeholder meeting reports on construction plans and designs.	Limited current consideration of infrastructure and natural assets for climate adaptation.
Principle 12. Pollution Prevention and Resource Efficiency	Low risk	Construction may cause localised air, water, land, and noise pollution; poor post-project maintenance risks future contamination and vector-borne disease.	Dedicated, secure storage for construction waste, materials, and machinery to prevent leakages or spillage; effluent outlets engineered to prohibit uncontrolled release into fields, waterbodies, or water supplies; targeted training on climate-informed investment planning for sub-national stakeholders; pre-site inspections and continuous monitoring for emerging risks.	Monthly monitoring reports; gender-disaggregated attendance lists for capacity-building training; pre- and post-site inspection reports.	Potential contamination of water, land, and noise pollution around construction sites from inappropriate waste, agrochemical, and sewage management.
Principle 13. Public Health	Low risk	Construction poses safety hazards (traffic, drowning) to residents and livestock; contamination and structural failure could cause health issues and amplify climate vulnerability.	Clear demarcation of construction sites via fencing, barriers, and warning signage to prevent unauthorised entry; unobstructed water flow and drainage maintained through irrigation systems, canals, and ponds during construction; community monitoring mechanism empowering local beneficiaries to track public health, safety, and livelihood impacts.	Monthly monitoring reports; log of grievances received and resolved.	Health issues can be triggered by poor construction-site management, material release, and water contamination.

ESP Principle	Risk Category	Identified risks	Safeguard Measures	Monitoring Indicator(s)	Baseline Condition
Principle 14. Physical and Cultural Heritage	Low risk	Risk of disturbing unrecorded Suoy cultural sites or artifacts through inappropriate infrastructure, ecological degradation, cultural commodification, or benefit-sharing conflicts.	Immediate work stoppage and notification of the Project Manager and MoE focal point on discovery of potentially significant cultural material, with no resumption until written clearance from the Ministry of Culture and Fine Arts; this protocol included as a mandatory clause in all construction subcontracts; ESS Consultant inspection of each earthwork site before works begin.	Monthly monitoring reports; site assessment reports (see also Principle 7 indicators).	Development works may disrupt or degrade indigenous cultural practices, assets, and livelihoods (see also Principle 7).
Principle 15. Land and Soil Conservation	Low risk	Risk of soil and groundwater contamination from agrochemical use, effluent discharge, and dredged-sediment reuse; reforestation risks invasive species introduction.	EbAMP approval from provincial authorities prior to reforestation, using verified nursery-supported native species; criteria-based selection for the 18 WASH facilities (Output 3.7) prohibiting siting on active agricultural land, eco-sensitive zones, or culturally significant sites; effluent outlets engineered against uncontrolled release; structured IPM capacity-building for targeted farmers promoting climate-smart, low-toxicity agroecological practices.	Approved EbAMP; inspection report with list of selected sites; monthly monitoring reports; gender-disaggregated attendance lists for capacity-building training.	Potential land and soil contamination without proper inspection, infrastructure design, and IPM capacity among local farmers.

General Management Arrangements

Institutional management and mitigation protocols are informed by a desk review of local risk profiles in Cambodia, community consultations during project formulation, and the team's regional and international safeguard experience. The operational approach applies successful delivery models and lessons learned from ongoing UN-Habitat climate adaptation initiatives in the Asia-Pacific region funded by the Adaptation Fund.

- **Accountability and Oversight Responsibilities:** The Project Manager within the Executing Entity (EE) holds direct responsibility for project execution in full compliance with the ESMP, including primary compliance and fiduciary oversight. Any adaptive management changes, scope variations, or additional sub-projects within Adaptation Fund thresholds require technical clearance from the Project Manager and formal approval by the Project Management Committee (PMC).
- **Execution and Budgetary Integration of Mitigation Measures:** Risk mitigation protocols, such as stakeholder awareness campaigns and capacity building on the AF's ESP and Gender Policy, are integrated into core project components and fully funded within the baseline project budget. No separate safeguard budget line is required.
- **Gender Baseline Integration:** In compliance with the Adaptation Fund Gender Policy, a comprehensive, disaggregated Gender Action Plan has been developed to guide equity monitoring and is provided as Annex D.
- **Safeguard Resource Allocation:** A dedicated, itemised safeguard implementation budget has been finalised and is detailed in Table 44 below.

The following general directives will be institutionalised across all operational layers to guarantee comprehensive compliance with the Adaptation Fund's ESP and Gender Policy: contractual and legal safeguard integration, whereby all Memorandums of Understanding, Agreements of Cooperation, and contracts with any executing partner, vendor, or subcontractor contain explicit clauses mandating absolute compliance with the 15 ESP Principles and the Gender Policy; dedicated technical oversight and agency clearance, whereby specialised UN-Habitat safeguard and human rights experts conduct routine compliance verification throughout the project lifecycle while the designated Gender Focal Point provides independent oversight of adherence to ESP Principle 5 and the overarching Gender Policy, the project design has been formally cleared by the UN-Habitat Project Advisory Group (PAG), validating its alignment with agency mandates for human rights, gender equity, youth inclusion, and climate resilience; inter-institutional regulatory coordination, with the Project Management Unit maintaining continuous, structured coordination with environmental and social focal points in national and sub-national government agencies to ensure alignment with evolving statutory standards; and proactive capacity building and safeguard mainstreaming, whereby the Project

Manager and Project Executing Unit deliver comprehensive safeguard training, covering risk identification, safeguard measures, and the GRM, to executing entities, local subcontractors, technical consultants, and community leaders during inception and strictly prior to mobilisation of any physical works, with periodic refresher training institutionalised for new personnel and emerging compliance needs.

Grievance Redress Mechanism (GRM)

The project will implement a comprehensive GRM that is accessible to both beneficiaries and non-beneficiaries, providing a transparent and effective way to raise grievances or inquiries about project design and implementation. All project personnel, executing entities, subcontractors, technical consultants, and community members will be trained on the GRM to ensure awareness of available recourse. To address local socioeconomic vulnerabilities, literacy differences, and digital divides, the GRM will integrate with existing community mediation structures and offer culturally appropriate, multi-tiered intake channels in local languages. These channels will not require internet or smartphone access and will include secure physical drop-boxes, trained local facilitators, a dedicated telephone hotline, and confidential event-based reporting, ensuring accessible and anonymous grievance submission for all stakeholders. All project staff, executing partners, and community facilitators will be trained to identify signs of community dissatisfaction, record grievances systematically, and process reports impartially. Field-level monitoring will serve as proactive consultation opportunities, recognizing that marginalized individuals may hesitate to use formal complaint channels due to fear of social friction or retaliation. This approach ensures secure and risk-free avenues for raising concerns. The Project Executing Unit (PEU) will process all grievances with strict anonymization and equal prioritization, regardless of the complainant's identity or reporting channel. Stakeholders will be informed about GRM rights, anonymity protections, and eligibility criteria at project inception or first contact, with periodic reminders provided. For accountability and legal recourse, contact information for the Adaptation Fund Board secretariat (Mail stop MSN P-4-400, 1818 H Street NW, Washington DC) will be shared through public information leaflets, local social media, and community bulletin boards.

The project's GRM fully aligns with the operational procedures required by UN-Habitat's ESSS 3.1. At the global level, stakeholders affected by UN-Habitat interventions can submit grievances through the institutional portal, by email (unhabitat.esss@un.org), or in writing to UN-Habitat Headquarters, ensuring access for those without digital connectivity. Locally, in compliance with ESSS 3.1, the project will provide a dedicated safeguard inbox, confidential telephone hotline, and local postal address. These contact points will be shared during all stakeholder engagements and displayed on public signage and construction notice boards. Trusted community leaders will be trained to act as safeguard proxies, assisting vulnerable individuals in submitting grievances. Grievances will follow a four-stage process: intake and registration in a central ledger; screening and assessment; resolution tracking and documentation; and adaptive management adjustments. Receipt will be acknowledged within 5 working days, a proposed resolution will be provided within 30 calendar days, escalation to UN-Habitat ROAP if unresolved within 45 days, and written notification of the outcome will be sent to the complainant.

Risk Monitoring and Evaluation Arrangements

The monitoring programme in Table 31 will measure action effectiveness and compile results for annual, mid-term, and final reports to the Adaptation Fund. Monitoring will ensure timely action and assess whether safeguard measures effectively address each identified risk or impact, or if adjustments are needed. Annual reports will detail compliance plan implementation and, if necessary, outline corrective actions. The Project Manager will be responsible for direct monitoring, oversight, and compliance. If changes or additional activities are needed, monitoring indicators and safeguard measures will be updated. Gender-specific and disaggregated indicators and targets will be provided in the results framework (Table 26) and Gender Action Plan (Table 52). The safeguard budget is shown below.

Table 44 *Safeguard Resource Allocation (US\$)*

Output	Item	Year 1	Year 2	Year 3	Year 4
1.3	ESS Consultant for monitoring and documentation	5,000	5,000	0	0
2.3	ESS Consultant for monitoring and documentation	0	3,300	3,300	3,400
3.1	ESS Consultant for monitoring and documentation	5,000	5,000	0	0
3.2	ESS Consultant for monitoring and documentation	0	3,300	3,300	3,400
3.3	ESS Consultant for monitoring and documentation	0	5,000	5,000	0
3.4	ESS Consultant for monitoring and documentation	0	3,300	3,300	3,400
3.5	ESS Consultant for monitoring and documentation	0	3,300	3,300	3,400
3.6	ESS Consultant for monitoring and documentation	0	0	5,000	5,000
3.7	ESS Consultant for monitoring and documentation	0	3,300	3,300	3,400
Sub-Total (ESS)		10,000	31,500	26,500	22,000
TOTAL Project Management Budget		90,000	90,000	90,000	90,000

Table 45 Monitoring of ESS Management Measures

Action	Indicator and Method	Responsibility and Frequency
Principle 1 monitoring	Annual confirmation that all permits and clearances are current; violations logged with corrective action within 30 days.	Project Manager / ESS Consultant — Annual
Principle 2 monitoring	Quarterly review of gender-disaggregated attendance against inclusion targets; site selection documentation reviewed at Year 2.	ESS Consultant / Gender Focal Point — Quarterly
Principle 5 monitoring	Semi-annual review of gender-disaggregated participation against GAP targets, included in six-monthly progress reports.	Gender Focal Point — Semi-annual
Principle 6 monitoring	Monthly site visits during active construction to review PPE compliance, wage records, working hours, and first-aid provision.	ESS Consultant — Monthly during construction
Principle 7 monitoring	FPIC documentation reviewed before each phase of physical works; Suoy community focus group conducted semi-annually; language barrier assessment reviewed Year 1 and Year 2.	Project Manager / ESS Consultant — Semi-annual
Principles 9 & 10 monitoring	Pre- and post-construction biodiversity baseline compared by a qualified ecologist; monthly site photos during reforestation; seedling survival checked at 6 and 12 months.	ESS Consultant / Ecological Expert — Monthly during works; bi-annual post-planting
GRM implementation	GRM information displayed at target-area Provincial Halls and on the UN-Habitat project leaflet/website.	Project Manager — within half a year of inception
Consent process	Consent sheets signed by each community member before physical works begin under Components 1, 2, and 3.	Project Manager, PEU — before inception of physical works
Government permission	Full written permission obtained from each required government agency before construction begins.	Project Manager, UN-Habitat, MoE, PMC

Annex D Gender Baseline Assessment and Action Plan in Compliance with the Gender Policy of the Adaptation Fund

This gender assessment analyses gender issues in Cambodia, highlighting the differentiated impacts of climate change and the specific needs and capacities of various subgroups. It proposes gender-responsive measures to ensure equal opportunities for women, men, and marginalized populations to build resilience and adapt to climate change during project implementation, in line with the Adaptation Fund Gender Policy.

This Gender Assessment was prepared during the full proposal stage to ensure the project's results framework, budget, and safeguards address the distinct adaptation needs of men and women, without discrimination or reinforcing gender inequality. A comprehensive Gender Action Plan and gender-targeted indicators were developed to promote equality and women's leadership in project decision-making, informed by consultations with relevant ministries, local women's cooperatives, and community-based organizations. The document will be updated throughout the project lifecycle.

Methodology

The formulation team conducted stakeholder consultations and reviewed existing reports to ensure the project design meets the needs of disadvantaged and marginalized groups, particularly indigenous communities and persons with disabilities.

Gender Equality Status

1) National Gender Equality Status

In the 2022 World Economic Forum Global Gender Gap Index, Cambodia ranked 98th globally (156 countries) with a score of 0.690, an improvement from 103rd in 2021. Cambodia ranked 116th globally on the 2021-22 Human Development Report's Gender Inequality Index (0.470); its Human Development Index was 0.593 (0.570 for females, 0.615 for males). Women in Cambodia have a lower climate resilience index (0.56) than men (0.59), reflecting limited access to safe places, early warning systems, resilient housing, and safe water and sanitation, as well as a greater burden of care work that increases women's mortality risk during extreme weather.

Table 46 Global Gender Gap Index – Overview

Index	Rank 2021	Score 2021	Rank 2022	Score 2022
Global Gender Gap Index	103	0.684	98	0.690
Economic participation and opportunity	46	0.729	61	0.710
Educational attainment	128	0.919	105	0.996
Health and survival	46	0.978	42	0.978
Political empowerment	126	0.111	121	0.107

Cambodia has advanced gender equality through national policies and mainstreaming efforts, integrating gender into frameworks such as the Pentagonal Strategy Phase I, CSDGs, Neary Rattanak Strategic Plan, and climate policies including the Cambodia Climate Change Strategic Plan and NDC. The Ministry of Women's Affairs leads oversight and advocacy. However, there are currently no gender-specific indicators or milestones, so gender outcomes are not yet tracked by the National Monitoring and Evaluation Framework for Climate Change.

Health

Cambodia achieved its maternal and child health MDGs ahead of schedule in 2015. Female life expectancy (72.3) surpasses male (66.8), and both neonatal and under-five mortality have declined significantly over two decades. Maternal mortality dropped from 437 to 160 per 100,000 live births (2000-2017), and 99 % of births are attended by skilled providers. Adolescent fertility has remained stable since 2010 (46 per 1,000 girls aged 15-19 in 2020). Cambodia has eradicated polio and significantly reduced malaria, tuberculosis, and HIV/AIDS. However, remote areas still lack skilled providers and adequate medicine, and poverty and domestic violence continue to affect women's health.

Education

Gender disparity in education has narrowed at all levels due to scholarships, increased schools, and girls' dormitories. Primary enrolment rose from 82 % (1997) to over 97% (2017/18), and 63% of girls complete lower secondary school compared to 52.5% of boys (2021). However, only 18.3% of females complete secondary education versus 31.7% of males, and adult literacy is lower among women (79.8%) than men (88.4%). Learning outcomes remain a concern: nearly 25% of Grade 3 children cannot write a single word in a dictation test, and 55% of adolescents drop out by age

Economic Sector

Cambodia ranked 61st in economic participation and opportunity in 2022, up from 77th in 2014. Female labour force participation is 69.6% compared to 82.1% for males. Low wages and poor working conditions limit the benefits of wage employment, and most women-owned enterprises remain informal and under-resourced. Asset ownership supports economic empowerment: 61.5% of women owned a dwelling in 2014, and 86.3% of women aged 15-49 report having the final say in major household decisions.

Governance

Female representation in the National Assembly has more than tripled over two decades, reaching 21.6 % of seats in 2021, similar to 2010 levels. In 2022, 43.7% of firms had female-majority ownership, and 57.3% had top female managers. Despite this, Cambodia ranked 93rd for women in parliament and 124th for women in ministerial positions in the 2022 Global Gender Gap Index, and no woman has served as head of state in the past 50 years. Women remain underrepresented in decision-making roles across politics, the public sector, and the judiciary, partly due to traditional beliefs about women's suitability for leadership.

Legal and Administrative Framework

The Constitution abolishes all discrimination against women and guarantees equality in marriage and family matters; Cambodia is party to CEDAW and all core human rights treaties. The 2023-2028 Pentagonal Strategy Phase I prioritises gender equality and social protection, and the Environment and Natural Resources Code and Law on Disaster Management both integrate gender considerations, the latter requiring special attention to women, children, older people, and persons with disabilities during disasters.

Climate-specific frameworks include the National Strategic Plan on Gender and Climate Change 2014-2023, the Master Plan for Gender and Climate Change (2018-2030), and the Action Plan on Gender and Climate Change 2019-2023, which guide project formulation. The Cambodia Climate Change Strategic Plan (CCCSP) 2014-2028 aims to reduce sectoral, regional, and gender vulnerabilities to climate impacts, supported by a Gender and Climate Change Committee (GCCC) Working Group under the Ministry of Women's Affairs (MoWA), and Neary Rattanak V (2019-2023) promotes women's resilience-building and gender mainstreaming in climate policy. Cambodia has localised the Sustainable Development Goals as the Cambodia Sustainable Development Goals (CSDGs), which put "No One is Left Behind" at the forefront and prioritise the poorest groups. Selected CSDG targets for Goal 5 (gender equality) and Goal 13 (climate action) are summarised below.

Table 47 Selected CSDG Goal 5 and Goal 13 targets

Target	Unit	Baseline 2016	2023	2030
5.1 End all forms of discrimination against all women and girls everywhere	No.	50	55	60
5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation	%	30.6	28.0	25.0
5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation.	%	1.9	1.7	1.6
5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate.	No	5	9	
5.5 Ensure fully and efficiently participation of women and equal opportunity in leadership in all levels in economic political and public life.	%	17.81	30.0	35.0
5.5.1. Proportion of seats held by women in legislation institutions.	%	16.27	20	31.0
5.5.2 Proportion of female civil servants holding management position (Ministers, Secretary of States, Under-Secretary of States) in public sectors.	%	13.23	20.0	25.0
5.5.3 Proportion of female as member of Capital and provincial Council.	%	13.85	25.0	30.0
5.5.4 Proportion of female as member of Municipalities, Districts, and Khans Council.	%	16.75		30.0
5.5.5 Proportion of women in Commune/ Sangkat council	%	57.6		83.0
5.6 Ensure the access to sexual and reproductive health and reproductive rights as universal agreed on the program of Action of the International Conference on Population and Development and the Beijing Platform for Action and other relevant documents				

5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws. 5.a.1 Percentage of adult women using financial service compare with number of population in the country receiving financial services.	%	51	52	53
5.a.2 Percentage of Adult women received financial service.	%	73	78	92
5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels. 5.c.1: Number of institutions with a system to track and allocate budget to promote gender equality and empower women	No			9
5.c.2 Number of line Ministries, Line Agencies have development and Implement Gender Mainstreaming Strategic Plan	No	6	9	19
13.1 Strengthen resilience and adaptive capacity to climate- related hazards and natural disasters in all countries. 13.1.1 Percentage of communes vulnerable to climate change.	%	47	32	25
13.2 Integrate climate change response measures into national policies, strategies and planning. 13.2.2 The public expenditure for climate change.	% of GDP	1.2		1.7
13.3 Improve education, awareness- raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning. 13.3.1 Institution level that prepared for response to Climate Change indicated as percentage of institutional capacities mainstreamed on 5 components of Climate Change		27		80
13.3.2 Percentage of households (farming, animal raising, fish raising, and fishing) and local community forestry members participated workshops and received training on climate change	%	0.06	0.60	0.90

2) Gender Context of Kampong Speu Province

Increases in extreme weather events such as droughts, storms, and floods are changing economies, development patterns, and migration in Kampong Speu, and are expected to be among the most significant global health threats this century. While all are affected, vulnerability depends on adaptive capacity. Women make up 51 % of the population in the two target districts, with 13% of households headed by women. According to the Cambodia DHS Final Report 2021-22, only 3.2% of women in Kampong Speu have completed education beyond secondary level, below the 3.6% national rural average, and 80.3% are illiterate, above the 75.2% national rural average.

As in other parts of the country, women in Kampong Speu bear greater unpaid care and domestic responsibilities during climate-related disasters, such as caring for sick family members, collecting water, and managing household recovery. They also face more barriers to accessing climate information, finance, land, and productive assets, limiting their ability to adapt and recover. About 75 % of households in the target districts rely on agriculture, with limited irrigation, making them highly vulnerable to climate impacts. Community consultations confirmed shorter, more erratic rainy seasons and more frequent droughts, with agricultural production increasingly dependent on unpredictable rainfall. The gendered division of agricultural labour, with men responsible for ploughing and women for planting, weeding, and winnowing, combined with women's lower access to technology and climate-resilient tools, increases their exposure to climate risks.

Kampong Speu is one of Cambodia's most drought-affected provinces. During scarcity, men can access savings and alternative income, while women often prioritize family members' nutrition over their own. Livestock ownership is a key but climate-vulnerable coping strategy. Declining forest, fishery, and wild-harvest resources add to women's burdens, especially for female vendors of non-timber forest products at eco-tourism sites targeted under Component 2. Persistent gender inequality and limited income opportunities for young women contribute to low household incomes and restricted market access, highlighting the need for targeted support to strengthen women's adaptive capacity and participation in decision-making.

Data baseline – overview of disaggregated data (beneficiaries) in target communities

The proposed project area has a population of 167,222, with 73.9% in Phnum Sruoch District and 26.1 % in Aoral District. Both districts have roughly equal gender distribution. The proportion of poor households is similar (15.3% in Aoral, 14.4% in Phnum Sruoch), as is the prevalence of people with disabilities (1.4% and 1.1%, respectively).

Table 48 Beneficiaries in the target communities (selected communes and district totals)

Project Area	HHS	TOTAL	MALE	FEMALE	YOUTH 18-60	PEOPLE WITH DISABILITY	HHS UNDER POVERTY
Aoral District							
Haong Samnam	1,324	5,773	2,591	3,182	405	83	14.4%
Reaksmei Sameakki	1,450	6,637	3,361	3,276	3,689	95	11.6%
Trapeang Chour	3,887	14,987	7,305	7,682	9,641	215	15.5%
Sangkae Satob	1,745	7,774	3,754	4,020	4,320	111	17.8%
Ta Sal	2,053	8,420	4,148	4,272	5,188	121	16.1%
AORAL	10,459	43,591	21,159	22,432	23,243	624	15.3%
Phnum Sruoch District							
Chambak	1,110	4,053	2,004	2,049	1,110	42	9.1%
Choam Sangkae	2,053	8,773	4,374	4,399	2,053	90	7.6%
Dambouk Rung	1,831	7,369	3,716	3,653	1,831	76	19.6%
Kiri Voan	1,712	6,598	3,337	3,261	1,712	68	7.4%
Krang Dei Vay	2,098	8,668	4,225	4,443	2,098	89	11.5%
Moha Sang	3,311	14,738	7,082	7,656	3,311	151	14.3%
Ou	4,057	16,404	8,169	8,235	4,057	168	9.4%
Prey Rumduol	1,390	5,574	2,753	2,821	1,390	57	19.5%
Prey Kmeng	1,224	5,315	2,590	2,725	1,224	55	13.6%
Tang Samraong	2,295	10,346	4,748	5,598	2,295	106	18.3%
Tang Sya	2,734	12,009	5,848	6,161	2,734	123	22.3%
Traeng Trayueng	2,983	12,591	6,216	6,375	2,983	129	19.8%
Yeaymao Pichnil	2,667	11,193	5,407	5,786	2,667	115	12.3%
PHNUM SRUOCH	29,465	123,631	60,469	63,162	29,465	1,269	14.4%
TOTAL PROJECT AREA	39,924	167,222	81,628	85,594	79,914	1,893	14.5 %

Preparatory Consultation Processes

Field missions and stakeholder consultations were conducted from 24 to 28 May 2026 using a gender-sensitive approach that engaged women, youth, and persons with disabilities to assess gender-differentiated climate vulnerabilities and identify tailored adaptation measures. Meeting minutes are provided in Annex A.

A stakeholder consultation on 25 May 2026 involved sub-national government officials, including provincial and district administrations and relevant departments, to confirm project sites, outcomes, and outputs. Of 31 participants, 26 % were female. Participants expressed full support for both formulation and implementation phases, emphasizing the need to prioritize women and older community members, who are especially vulnerable due to caregiving responsibilities and reliance on informal businesses such as non-timber forest product sales. They also highlighted the importance of preserving and promoting indigenous cultures and practices as part of tourism attractions.

Three community consultations and field assessments were held from 24 to 27 May 2026 to assess whether proposed interventions meet community needs and are practical to implement. Consultations took place at Chambak (14 participants, 6 female), Ko Daun Tey/Te Teuk Pus Geothermal (33 participants, 13 female), and Tasal (35 participants, 13 female), with a total of 82 participants, 39% female. Discussions confirmed that women's reliance on climate-vulnerable agriculture and informal, small-scale businesses, combined with limited irrigation, restricted market access, and increased household and childcare responsibilities during climate shocks, puts them at significant risk of income loss.

A consultation with the Ministry of Environment, the Adaptation Fund's National Designated Authority, was held on 28 May 2026 (13 participants, 6 women) to discuss updated outcomes, outputs, and activities based on field mission findings and technical inputs, as well as gender-disaggregated indicators for climate change impacts. The Ministry agreed to incorporate all identified gender-targeted measures into the project design, with a focus on capacity-building and livelihood support for women and indigenous populations. These measures align with government priorities and strategies, especially NDC 3.0, and will be implemented through green ecotourism and livelihood improvement to ensure equal opportunities for men and women.

Gender-Differentiated Climate Impacts and Tailored Gender-Responsive Measures

Drawing on literature review and the May 2026 consultations, climate-related impacts and proposed adaptation measures for Kampong Speu Province are summarised below.

Table 49 Identified gender-differentiated climate impacts and gender-responsive measures

Key Stakeholder Category	Gender-Differentiated Climate Impacts	Tailored Gender-Responsive Adaptation Measures
Male	Income loss from dependency on climate-vulnerable agriculture; health risks from outdoor informal work (construction, transport).	Capacity-building for climate-smart agriculture, water management, and livelihood diversification; public awareness for disaster preparedness.
Women	Income loss from climate-vulnerable agriculture and outdoor informal businesses; limited access to markets and resources; exposure to GBV risks; increased unpaid care and domestic burdens during disasters; reduced ability to maintain hygiene during dry season and menstruation.	Climate-smart livelihood diversification; accessible meeting times/locations and transport/childcare support; equal participation in decision-making; gender-responsive early warning systems; improved WASH at eco-tourism sites; advocacy for shared unpaid care work.
Youth/Children	Absence from school due to limited accessibility; food/water insecurity; disease risk from insufficient WASH.	Provide WASH facilities; improve flood-resilient school access routes; retrofit climate-resilient school buildings.
People with disabilities	Difficulty accessing clinics and medicines due to limited accessibility.	Improve pathways and drainage to minimise flooding risk.
Indigenous Suoy People	Limited access to information, services, and economic opportunities; strong dependence on natural resources and traditional livelihoods threatened by unpredictable weather and land-use change.	Diversified climate-smart livelihoods; improved water storage; ecosystem protection; culturally appropriate early warning and disaster preparedness; secure land and resources; promote indigenous participation in decision-making.

The gaps and needs identified in the project target areas were also analysed, as summarised below.

Table 50 Identified gender-differentiated gaps and needs

Gaps	Needs
Limited integration of gender-responsive indicators in climate M&E frameworks.	Strengthen gender-responsive climate governance, indicators, and accountability mechanisms.
Women have limited access to climate information, early warning systems, finance, land, and decision-making processes.	Improve women's access to information, financial services, land, and livelihood resources, and participation in adaptation planning.
Women farmers have lower access to climate-smart technologies, extension services, and resilient farming tools.	Expand climate-resilient agriculture, water management, irrigation infrastructure, and farmer training, with targeted extension services for women.
Increased unpaid care work for women during climate-related disasters; limited water availability affects hygiene and health.	Promote gender-responsive disaster preparedness, shared household responsibilities, and improved water storage, harvesting, and WASH facilities.
Livelihoods dependent on natural resources and non-timber forest products are threatened; female vendors at eco-tourism sites are highly exposed.	Diversify livelihoods, strengthen sustainable natural resource management, and improve climate-resilient infrastructure and business support at eco-tourism sites.
Limited market access, skills development, and capital for women.	Strengthen vocational training, entrepreneurship, market access, and financial inclusion.
Schools, access roads, and public infrastructure are vulnerable to flooding, heat, and extreme weather; persons with disabilities face access barriers.	Invest in climate-resilient school facilities, safe access routes, drainage, and improved accessibility for persons with disabilities.
Indigenous Suoy communities have limited access to information, services, and economic opportunities, and depend heavily on threatened	Deliver culturally appropriate information and support; integrate indigenous knowledge with early warning systems; promote indigenous participation in adaptation and disaster risk

Gaps	Needs
forests and traditional livelihoods.	decision-making.

Table 51 Project-specific gender-differentiated recommendations

Category	Recommendations
Project management and approach	Engage at least 30% women in the Project Management Committee and Project Team; strengthen collaboration with the Ministry of Women's Affairs, Provincial Women's Affairs Department, and local women's groups; incorporate gender-responsive indicators into the results framework and monitoring system.
Meetings and capacity-building training	Ensure balanced female participation in all meetings and training; provide transportation for female participants attending training far from home and support for domestic responsibilities; involve women actively in interactive discussions.
Small-scale infrastructure	Design infrastructure accessible to women and persons with disabilities; include women in community committees for construction monitoring, operation, and maintenance.
Livelihood	Prioritise women, including female vendors, women-led businesses, and women-headed households, in livelihood and value-chain activities; provide targeted capacity building, technical training, and access to finance and markets.
Knowledge-management products	Develop case studies on women's participation and leadership; target at least 30% female participation in knowledge-sharing events; collect and report sex-disaggregated data throughout.

Project Gender Action Plan

Social norms in Cambodia have resulted in women being primarily responsible for household tasks such as water and sanitation, health, food management, and childcare, increasing their vulnerability to flood hazards and related risks. The project will ensure women participate in decision-making on infrastructure design, operation, and maintenance. Equal involvement of women and men will be promoted through community planning and consultation throughout the project, using the People's Process, which includes close collaboration with women from design through implementation and monitoring. The project will also encourage women's participation in implementation, advisory, and decision-making roles to address their underrepresentation in science, technology, and construction.

The specific gender objectives for the project are:

- By December 2029, at least 30 % of members of the 18 Commune Councils and nine Community Protected Area (CPA) committees in Aoral and Phnum Sruoch Districts are women, and gender-responsive climate adaptation priorities — including water access, WASH, and livelihood diversification — are explicitly integrated into at least 12 Commune Investment Plans (CIPs) and nine CPA Plans as a direct result of project capacity-building activities under Outputs 1.1 and 1.2.
- By December 2030, at least 40% of all direct beneficiaries across project training, livelihood, and infrastructure activities are women, with sex-disaggregated data collected and reported quarterly, and at least 75 % of female direct beneficiaries surveyed at project close reporting equal access to project benefits compared to male beneficiaries in the same communities.
- By December 2028, women hold at least 30% of seats on the Project Management Committee, and at least 50% of community-level monitoring and maintenance committees established under the nine Community Agreements with CPAs across Outputs 1.3 and 3.1–3.7 are women, with gender-disaggregated participation tracked and reported in every six-monthly progress report.
- By December 2030, at least 500 women in Aoral and Phnum Sruoch Districts have strengthened climate resilience through project interventions — including vocational training at the Te Teuk Pus centre (Output 1.3), climate-smart agriculture training (Output 2.2), rehabilitated water infrastructure (Outputs 3.3, 3.4, 3.6), and climate-resilient WASH facilities (Output 3.7) — with at least 60% of female beneficiaries surveyed reporting reduced time burdens.

Gender-Responsive Indicators

The project will ensure 50 % representation of women during meetings, consultations, community votes, participatory planning, and monitoring initiatives conducted under the People's Process approach, and a comprehensive list of indicators is included in the Gender Action Plan. The main gender-focused indicators the project will aim to achieve are:

- 50% of the members of communities established to implement the project will be female.
- 30 to 50% of trainees at all training/workshops and learning events will be female.
- 50% of direct beneficiaries of improved housing and toilets will be female.

- 75% of beneficiaries in livelihood promotion activities will be female.

Policy Arrangements: The Project Management Committee will enhance gender equality in its composition by reaching out to and including female government representatives.

Management Arrangements: The National Project Manager will serve as the principal Gender Focal Point, supported by designated gender focal points in each Province and District, and by a gender focal point established for each executing entity and partner.

Monitoring: Gender-disaggregated information on climate change-related issues, needs, and perceptions of vulnerable groups; activity prioritisation; and the identification and verification of potential risks and impacts will be collected through community surveys and public consultations to track progress toward and achieve the gender targets set out above. Gender focus group discussions will be conducted every six months, with analysis included in project reports to establish a qualitative baseline of gender perceptions and monitor changes in behaviours and attitudes as the project progresses.

Knowledge Management, Information Sharing and Reporting: The project will maintain a gender- and age-disaggregated database of beneficiaries and stakeholders, and will organise a rapid Knowledge, Attitudes and Practices survey through targeted Focus Group Discussions with women and youth.

Grievance Mechanism: A grievance mechanism established under the project will provide a platform for feedback and consultation where necessary.

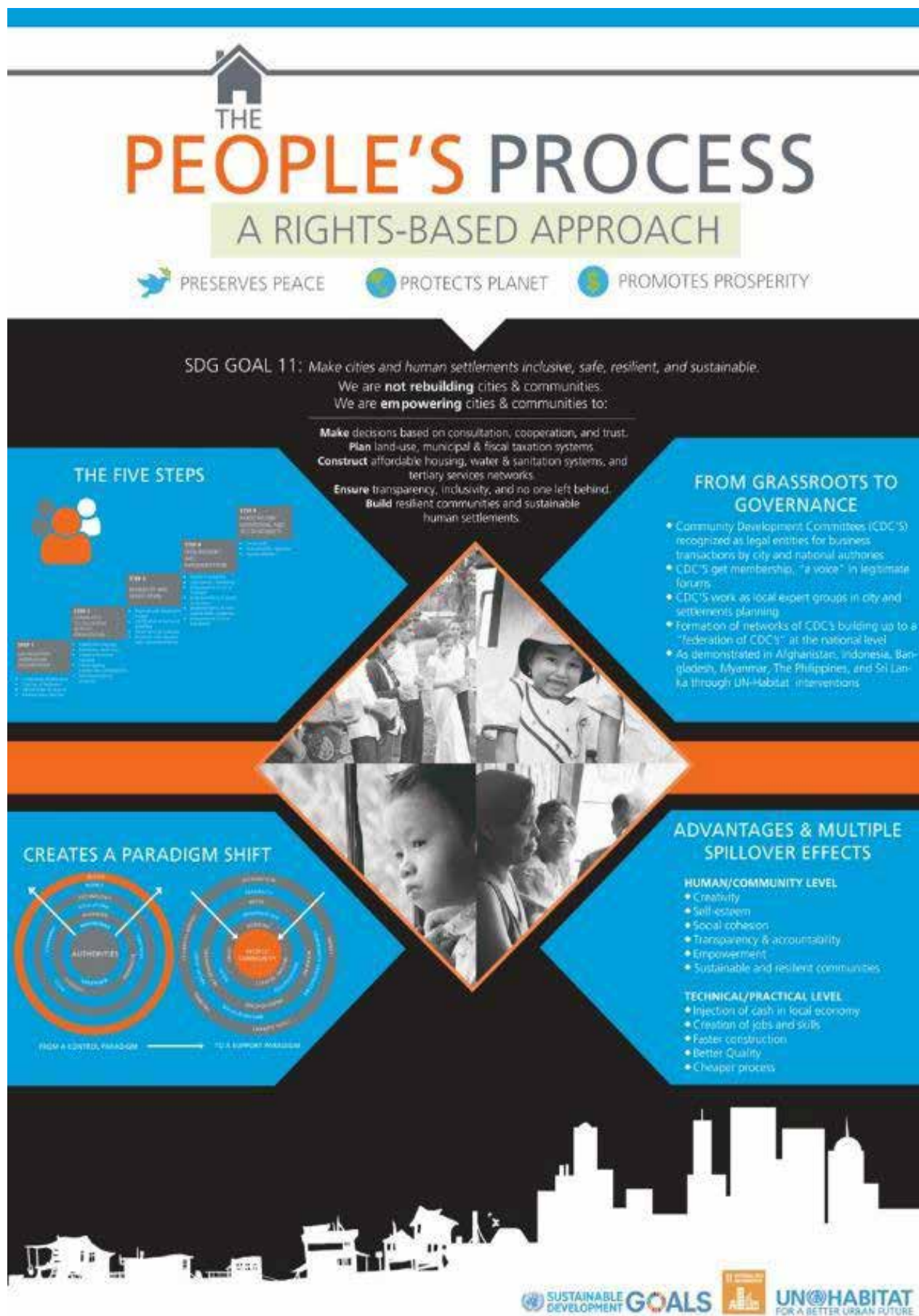
Gender Budget: As gender-responsive measures are embedded throughout the project cycle, embedded in a total budget of \$1,081,000 (Detailed budget line: 1.1b, 1.2b, 1.3e, 2.1c, 2.2c, 2.3e, 3.1b(2), 3.2f, 3.3d, 3.5f(3), 4.1a, 4.1c, 4.2a, 4.2b).

Table 52 Gender Action Plan Summary Table

Project/ Program Components	Expected Concrete Outputs	Indicator	Target	Interim target	Verification Means	Responsibility Party	Related budget
Component 1 Build capacity at the community and sub-national levels to strengthen inclusive climate governance and Protected Area Management	Outcome 1: Local and sub-national institutions demonstrate improved capacity to plan, budget for, and implement inclusive, risk-informed adaptation actions in protected and climate-vulnerable landscapes.	% of women who participated in capacity-building trainings.	40%	40%	- Field mission reports - Periodic progress reports	- Project manager - PEU - PMC - UN-Habitat	140,000
	Output 1.1. Community capacity-building programme implemented in target districts to maintain climate-resilient infrastructure, manage eco-tourism, and monitor ecosystem assets, with at least 40% participation (of 300 total participants) women, youth, and indigenous groups participating <i>(to support sustainable implementation of interventions under Components 2 and 3)</i>	% of women participating in capacity-building training on climate-resilient infrastructure management, operation, and maintenance.	40%	40%	- Training reports - Sex disaggregated attendance sheet - Periodical reports	- Project manager - PEU	75,000 (Budget line 1.1b)
	Output 1.2 18 Commune councils and nine Community Protected Areas (CPA) committees trained in climate-informed investment planning, integrating adaptation budgeting, local risk mapping, and disaster response protocols into Commune/Sangkat Investment Plans (CIPs) and Protected Area Plans.	% of women participating in capacity-building training and climate-informed investment plans improvement.	30%	30%	- Periodic progress reports - Sex disaggregated attendance sheet	- Project manager - PEU - UN-Habitat	30,000 (Budget line 1.2b)
		Shifts in gender norms	Shifted gender norms to increase more female participation				
	Output 1.3 Vocational training centre established (in Te Teuk Pus) and operated to train 400 beneficiaries (at least 200 women), emphasising youth and marginalised groups, annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques	% of female trainees at the vocational training centre	50%	50%	- Training reports - Sex disaggregated attendance sheet - Field reports - Periodical progress reports	- Project manager - PEU	35,000 (Budget line 1.3e)
		Women's reported sense of safety	Improved sense of safety to participate in the training				
Component 2: Promoting Climate-Resilient Livelihoods through Climate-Smart Agriculture and Eco-Economy Solutions	Outcome 2: Vulnerable households, including women, youth, and indigenous groups, adopt diversified and climate-resilient livelihood strategies linked to sustainable agriculture, forest products, and green tourism value chains.	% of targeted female beneficiaries reporting more secure, year-round access to markets.	60%	60%	- Survey reports - Periodic reports	- Project manager - PEU - PMC - Subcontractor (NGO) - UN-Habitat	381,000
	Output 2.1 Market and climate vulnerability assessments conducted in three locations to identify inclusive and gender-responsive value chains in drought-resilient crops, agroforestry, and non-timber forest products, incorporating indigenous knowledge.	% of women participating in the market and climate vulnerability assessments	30%	30%	- Assessment reports - Sex disaggregated attendance sheet - Periodical reports	- Project manager - PEU	45,000 (Budget line 2.1c)

	Output 2.2 At least 100 households (min. 40% women) trained in climate-smart agriculture, including agroecological practices such as organic composting, intercropping, and water-saving irrigation.	% of women who participated in the awareness-raising sessions.	40%	40%	- Training reports - Sex disaggregated attendance sheet - Periodical reports	- Project manager - PEU - Subcontractor (NGO)	120,000 (Budget line 2.2c)
	Output 2.3 Demonstration plots and value-chain pilots (at least 3 per district) established and managed jointly by youth and elder farmers to promote intergenerational learning in climate-resilient livelihoods	% of women and youth managing demonstration plots/value-chain pilots	40%	40%	- Sex-disaggregated list of farmers at the demonstration plots - Survey reports - Periodical progress reports		216,000 (Budget line 2.3e)
Component 3: Restoring Ecosystems and Building Climate-Resilient Infrastructure in Protected and Eco-Tourism Landscapes	Outcome 3: Ecosystems and critical rural infrastructure in protected and eco-tourism zones are restored and made climate-resilient, reducing environmental degradation and enhancing the adaptive capacity of local communities.	% of women participating in the stakeholder consultation to agree on the drafted engineering design.	30%	30%	- Periodical progress reports - Mid-term and terminal evaluation reports	- Project manager - PEU - PMC - UN-Habitat	400,000
	A. IN TE TEUK PUS						
	Output 3.1 Te Teuk Pus geothermal area rehabilitated through sediment removal, slope stabilisation, 2 km eco-trail improvements, and 100 units of solar-powered lighting, with indigenous Suoy communities co-managing the process.	% of women participating in the stakeholder consultation to agree on the drafted engineering design.	30%	30%	- Field mission reports - Sex disaggregated attendance sheet - Periodical progress reports	- Project manager - PEU	70,000 (Budget line 3.1b(2))
	Output 3.2 Biodiversity corridor established within 57 hectares, linking degraded forest patches with native reforestation using nursery-supported species of ecological and livelihood value.	% of women who participate in native reforestation.	50%	50%	- Field mission reports - Periodical progress reports - Sex disaggregated attendance sheet		270,000 (Budget line 3.2f)
	B. IN AORAL DISTRICT						
	Output 3.3 At least 10 village ponds rehabilitated with climate-resilient design features (e.g., raised bunds, sediment traps) to support year-round water access for agriculture and domestic use.	% of women who increase water accessibility through rehabilitated ponds.	50%	50%	- Inspection reports - Survey reports - Periodical progress reports	- Project Manager - PEU	40,000 (Budget line 3.3d)
	Output 3.4 3 irrigation canals (3 km) and 1 water gate rehabilitated in Aoral District with community participation and design standards for dry-season flow retention and flood management.	% of female farmers who benefited from the improved irrigation canal and a water gate.	50%	50%	- Related technical reports - Inspection reports - Survey reports - Periodical progress reports		0
C. IN PHNUM SRUOCH DISTRICT							

	Output 3.5 Eco-trail rehabilitation with integrated firebreak function (1.5 km) constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.	% of female unskilled/semi-skilled labourers participating in signage installation.	30%	30%	- Field mission reports - Periodical progress reports - Sex disaggregated attendance sheet	- Project manager - PEU	20,000 (Budget line 3.5f(3))
	Output 3.6 Irrigation systems (2 km) upgraded using watershed-based design to optimise dry-season storage, flood buffering, and equitable distribution across farm plots.	% of female farmers who benefited from the improved irrigation canal and a water gate.	50%	50%	- Field mission reports - Periodical progress reports		0
	C. IN PHNUM SRUOCH DISTRICT & TE TEUK PUS						
	Output 3.7 Climate-resilient WASH facilities built in 6 priority villages in Chambak commune (16 units) and Te Teuk Pus geothermal area (2 units) with water supply connection, climate-smart design (e.g., elevated latrines), menstrual hygiene spaces, and universal access features for women and persons with disabilities.	% of women who can use the constructed WASH facilities without health and safety risks.	100%	100%	- Inspection reports - Periodical progress reports	- Project manager - PEU	0
Component 4: Capturing, Sharing, and Scaling Adaptation Knowledge for Sustainability and Replication	Outcome 4: Adaptation knowledge and locally led solutions are documented, disseminated, and integrated into sub-national and national strategies to promote replication, policy uptake, and long-term sustainability.	% of female recipients of knowledge products during the workshop, meetings, and training.	30%	30%	- Sex disaggregated attendance sheet - Periodical progress reports	- Project manager - PEU - PMC - UN-Habitat	160,000
	Output 4.1 Project lessons and technical knowledge (translated into Khmer, Suoy), audio, and video formats for inclusive dissemination among non-literate and marginalised populations.	% of female recipients of knowledge products during the workshop, meetings, and training.	30%	30%	- Sex disaggregated attendance sheet		60,000 (Budget line 4.1a & 4.1b)
	Output 4.2 Replication workshops (four workshops and 400 participants) conducted with district, provincial, and national actors (30% women) to integrate lessons into Commune Investment Plans, National Adaptation Plan, and Environment Strategy 2023–2033.	% of women in the reflection workshops	30%	30%	- Workshop reports - Sex disaggregated attendance sheet - Periodical reports		100,000 (Budget line 4.2a & 4.2b)
TOTAL							1,081,000



During the early 1980s, UN-Habitat worked with the Government of Sri Lanka to pioneer a community engagement philosophy that placed the communities at the heart of their own development – this philosophy would later become the cornerstone of UN-Habitat's community development programmes in urban and rural environments.

During that time, the municipality of Colombia integrated the People's Process into its own development agenda and spearheaded over 7500 Community Development Committees (CDC) to work with local government for implementation of a large-scale housing programme. This was the first example of the People's Process being adopted by government.

The People's Process links about a paragraph shift, moving from a model of control by authorities to one of support to people – this is done through a participatory, community development methodology built around 5 steps



The People's Process achieves sustainability by combining technology with local knowledge. Moreover, interventions are cheaper (approximately 50% more value for money), enhance the local economy, attract potential for local entrepreneurial opportunities, and national construction standards are facilitated to local artisans through training. The approach also ensures human rights, through inclusivity and sustainability, through a low environmental footprint.

A vertical timeline titled "Timeline of natural disasters" showing events from 1992 to 2012. The timeline is a vertical line with years on the left. To the right of the line are colored boxes containing descriptions of disasters. Some boxes are connected to the timeline by lines, while others are not. The disasters listed are:

- 1992:** Conflict ends, Peace-Building mission in Afghanistan begins with the launch of the National Solidarity Programme (NSP).
- 1994:** Settlements signing started in Myanmar (2008 programme).
- 2004:** Indian Ocean Tsunami – 100,000+ responds in Indonesia, Sri Lanka and the Maldives.
- 2005:** Earthquake in Pakistan.
- 2006:** Cyclone Nargis in Myanmar.
- 2008:** Conflict ends in Sri Lanka.
- 2010:** Floods in Pakistan.
- 2011:** Tohoku Earthquake & Tsunami in Japan.
- 2013:** Typhoon Haiyan "Yolanda" in the Philippines.
- 2015:** Cyclone Phailin in the Pacific – Fiji, Samoa and Vanuatu.
- 2016:** India Earthquake in Nepal.
- 2017:** Myanmar Earthquake.
- 2018:** Philippines, Myanmar, Thailand.
- 2019:** China and South Korea.
- 2020:** Myanmar Earthquake.
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- 2100:** Myanmar Earthquake.

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Keywords: child sexual abuse; disclosure; self-blame

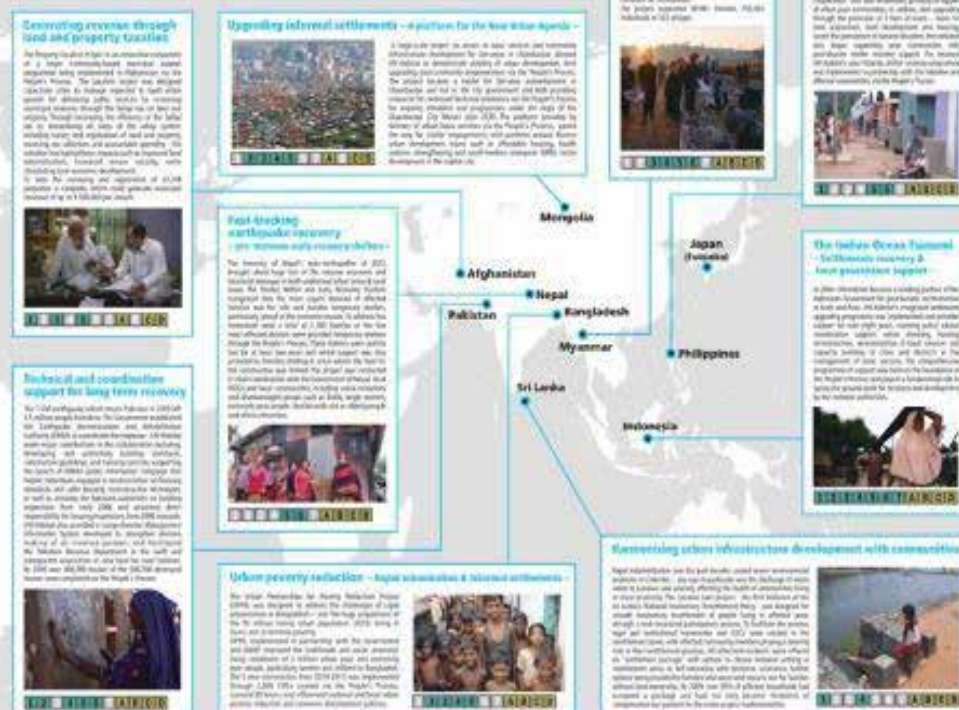
The People's Process: From Grassroots to Governance



Investigations of biological development (ontology) that started as studies on embryos of the common carp, a species of fish, are now



A structural framework that places people's needs and their rights at the heart of urban development



The USAID urban strategy is to increasingly support the institutionalisation & mainstreaming of the People's Process and expand the use of the approach to impact on municipal, provincial and national urban policies.

INSTITUTIONALIZATION
Governments recognize the People's Process as a key modality and approach to sustainable development and joint crisis economy and institutionalize the key elements of Community Development Committees (CDCs), and the Community Contract within national policies and programmes.

Government recognizes the People's Power as a key mobility and approach to sustainable development and joint areas economy and institutionalizes the key elements of Community Development Continuum (CDC), and the Community Continuum within national policies and programmes.

7 FOCUS AREAS

The People's Power contributes in multiple ways, through UNHabitat's urban focus areas and four cross-cutting issues:

- 1 Land, Legislation & Governance
- 2 Urban Planning and Design
- 3 Urban Economy
- 4 Urban Basic Services
- 5 Housing and Slum Upgrading
- 6 Risk Reduction and Rehabilitation
- 7 Research and Capacity Development

CROSS-CUTTING ISSUES

- ☐ A Human Rights

Community ownership and engagement via participatory decision making has demonstrated significant success in creating human dignity, building social cohesion and trust amongst stakeholders, along with the ability to deliver massive opportunities entire a radically different landscape featuring accountability and transparency between communities and authorities, and the empowerment of communities contributes to the sustainability of the projects in the long run.