ADAPTATION FUND

CONCEPT NOTE 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:	
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)

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

Amount of Requested financing for PFG: USD 150,000 (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 concept has been submitted before

☐ This is the first submission ever of the concept proposal

In case of a resubmission, please indicate the last submission date: 12/1/2025

Please note that concept note documents should not exceed 50 pages, including annexes.

A. Project/Programme Background and Context

1. National Context

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 and the capital city, 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] 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]

As of January 2025, Cambodia's population was estimated at 17.8 million, with an annual growth rate of 1.19 per cent. Approximately 75 per cent 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).[6,7]

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 0.461, underscoring persistent gaps in income, education, and political participation, particularly among rural women.[8,9] The average annual HDI growth rate declined from 2.42 per cent (2000–2010) to 0.85 per cent (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 per cent of the labour force and contributed 22.85 per cent to GDP in 2021.[10] Tourism, severely impacted by the COVID-19 pandemic, rebounded in 2023 with 5.5 million international visitors, generating over USD 3 billion, approximately 12.1 per cent of GDP.[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

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 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 events[16]. 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)

[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] https://data.worldbank.org/indicator/EN.POP.DNST?locations=KH
[7] Ministry of Planning (2019). Migration in Cambodia: Report of the Cambodian Rural Urban Migration Project (CRUMP). Kingdom of Cambodia.
[8] 2021-22, p 293
[9] Ministry of Planning (2019). Migration in Cambodia: Report of the Cambodian Rural Urban Migration Project (CRUMP). Kingdom of Cambodia.
[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
[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*.

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).

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

Climate projections indicate that future flood risk and heat stress are expected to intensify in Cambodia. Climate change could cost up to 9 per cent of Cambodia's GDP by 2050 and increase the poverty rate by up to 6 per cent by 2040 without proper adaptation and mitigation measures.[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 25 provinces, impacting over 2.5 million people.

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.

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.

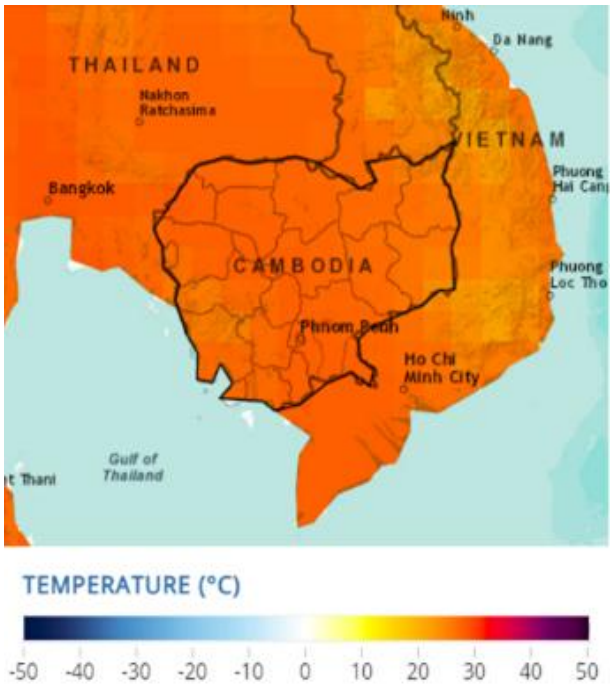


Figure 2.1 Observed climatology of mean-temperature

a. Temperature

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 per cent 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. The hottest month is April, when maximum temperatures often exceed 32°C, reaching an average of 38°C. 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 0.013–0.036ºC/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.[24] In addition, the reports highlight that increases in annual maximum and minimum temperatures are expected to exceed the rise in average temperature.

[17] World Bank (2024). Climate Risk Country Profile: Cambodia
[18] World Bank (2023). Acting on Climate Change is Key for Cambodia to Achieve its Development Goals
[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.
[24] Ibid.

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).[25] The lowest and highest average monthly temperatures during the dry season (January–April) are 27.5°C and 34.3°C, respectively, while the rainy season has average of 26.7°C and 31°C,

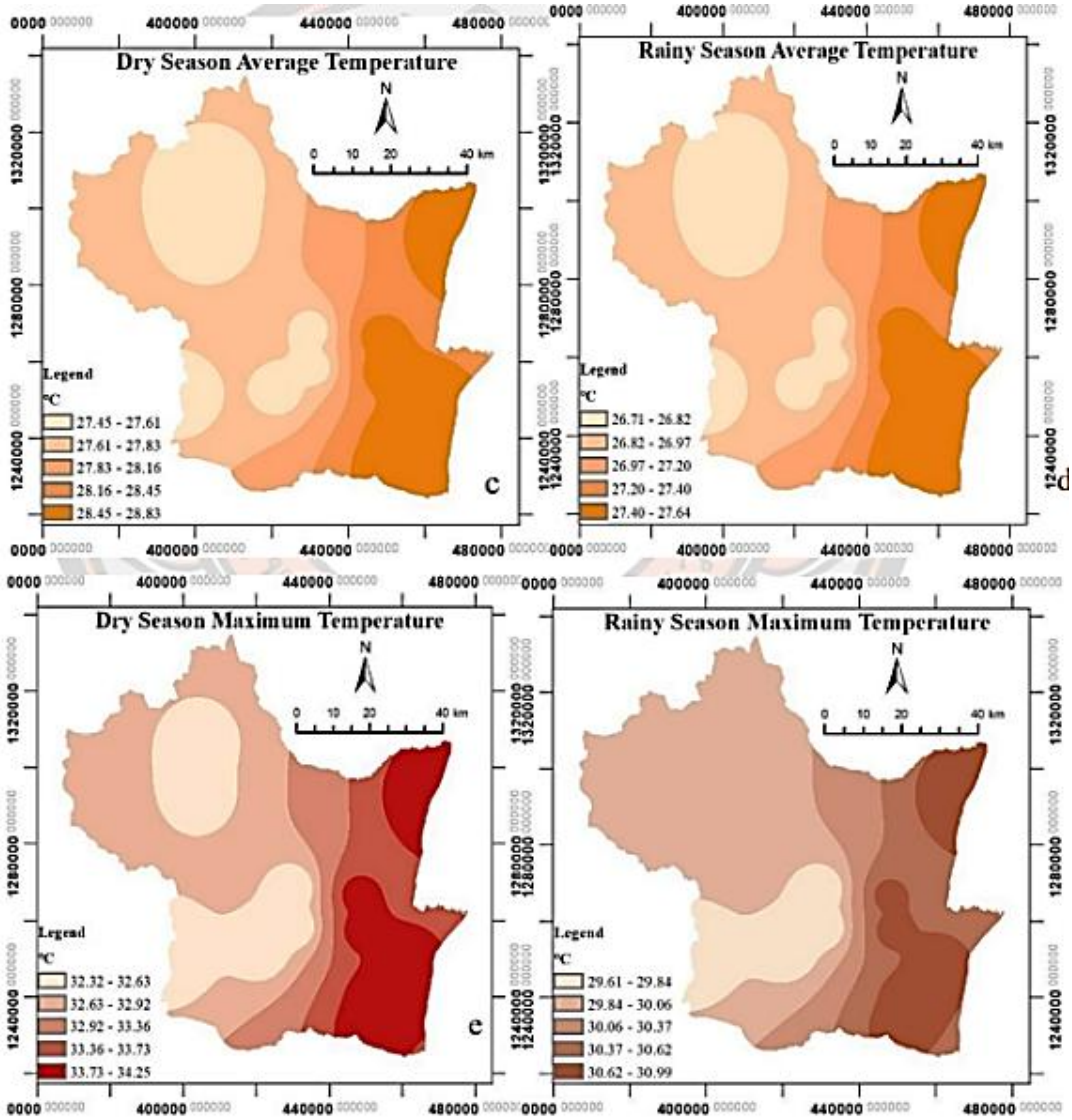


Figure 2.2 Map showing: (a) Dry season average temperature; (b) Rainy season average temperature.

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 in 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.[26] It is projected that high heat index days will increase from 61.27 during 2020-2039 to 111.30 during 2040-2059.[27,28]

These changes are particularly significant in ecologically sensitive zones, where temperatures have risen by approximately 0.18°C per decade since the 1960s.[29] These upland forests now face more frequent f heatwaves, forest fires, and extended dry periods due to increased temperatures, which accelerate evapotranspiration, reduce soil moisture, and intensify water stress.

b. Rainfall

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 rains. Rainfall distribution in Cambodia is highly heterogeneous, driven by orographic effects. The Central Plains receive

[25] https://nuir.lib.nu.ac.th/dspace/bitstream/123456789/5343/3/ChhuonvuochKoem.pdf
[26] Asian Development Bank. (2022, July). Environmental Safeguards Due Diligence Report
[27] World Bank. Climate risk country profile: Cambodia
[28] Ministry of Environment (2013). Cambodia Climate Change Strategic Plan 2014 – 2023. National Climate Change Committee. Royal Government of Cambodia.
[29] CNREC & UN-Habitat (2022): *Climate Risk and Vulnerability Assessment in Cambodia's Mountain Ecosystems*.

significantly less rainfall than upland areas, such as the Cardamoms.[30] 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 per cent, and the Ministry of Environment's projection that a 35.0 per cent increase in rainfall volume may occur from a 2000 baseline.[31] 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.[32]

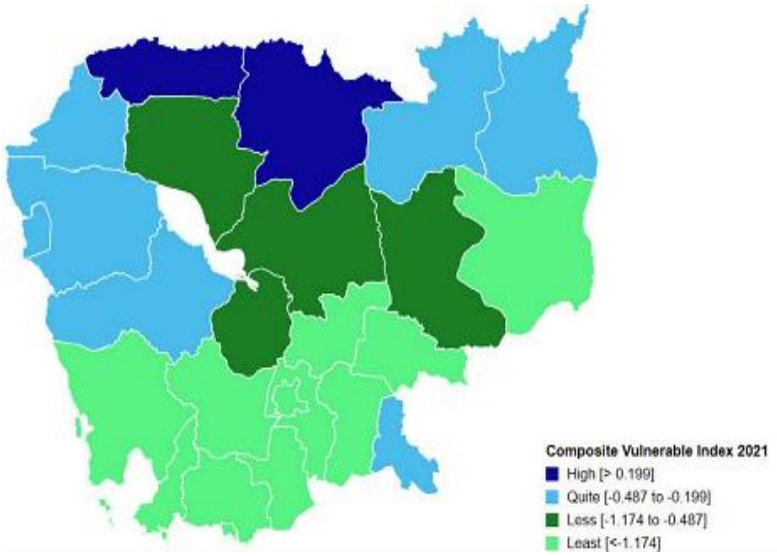


Figure 2.3 National Vulnerability Index

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 per cent to 79 per cent.[33] 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 a delayed onset and shortened duration of the rainy season, resulting in crop failures, topsoil erosion, and an increased demand for climate-resilient irrigation infrastructure.

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. [34] 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.[35] In October 2023, over 500 families were affected by floods, resulting in the evacuation of 17 families to safer locations in Kampong Speu Province.[36]

Based on research 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 per cent.[37] 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). [38] According to Mendoza et al., floods cause more damage, but happen less often than droughts and typically impact only certain areas near the river.[39]

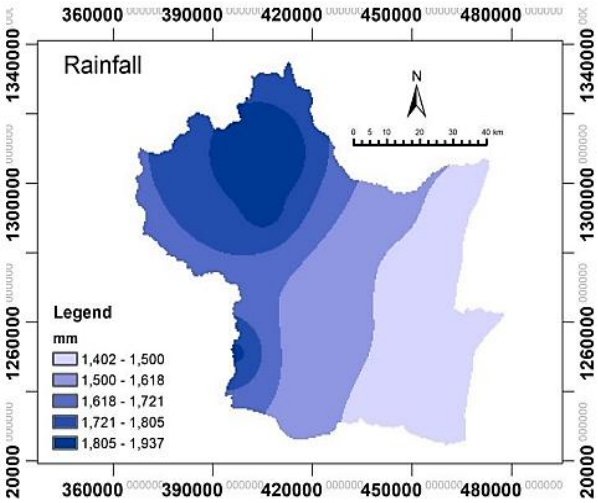


Figure 2.4 Isohyet Map of Average Rainfall over Kampong Speu

c. Drought

Drought remains one of the most pressing and recurring natural hazards in Cambodia, primarily affecting rural agrarian communities.[40] 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.[41] The agricultural sector,

[30] Chhinh Nyda et al. (2022). Quantitative Analysis of Household Vulnerability to Climate Change in Kampong Speu Province, Cambodia
[31] Chinh, N., et al. (2023). The Alteration of Flood Peak Discharge by Land Cover Change in Prek Thnot Watershed, Kampong Speu Provine, Cambodia
[32] World Bank (2023) Acting on Climate Change is Key for Cambodia to Achieve its Development Goals
[33] MoWRAM. (2022). *Hydrology and Meteorology Report*.
[34] NCSD. (2019). Disaster Loss Databases: Temporal Behaviour. Retrieved January 12, 2020, from http://camdi.ncdm.gov.kh/DesInventar/profiletab.jsp
[35] https://floodlist.com/asia/cambodia-floods-september-october-2022
[36] Kim Yutharo. (2023, October 17). Flood relief efforts continue in Kampong Speu province
[37] C. Koem, K. Nusit, and S. Tantanee. (2021). Spatial Distribution of Drought Hazard Mapping Based on AHP and GIS in Kampong Speu Province
[38] 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
[39] 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
[40] Chhinh, N., & Millington, A. (2015). *Drought monitoring for rice production in Cambodia*. Climate, 3(4), 792–811.
[41] Nguyen, H., et al. (2009). Adaptive drought risk reduction in Cambodia: Reality, perceptions, and strategies.

particularly rice production, has suffered substantial losses over multiple decades.

Between 1996 and 2000, drought-related rice losses were estimated to be approximately 20 per cent of potential national production. A severe drought in 2004 affected over 300,000 hectares of paddy fields, resulting in an 82 per cent 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.[42] 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.[43] Community-led drought management and preparedness are especially vital, as local populations are typically the first to experience and respond to slow-onset hazards.

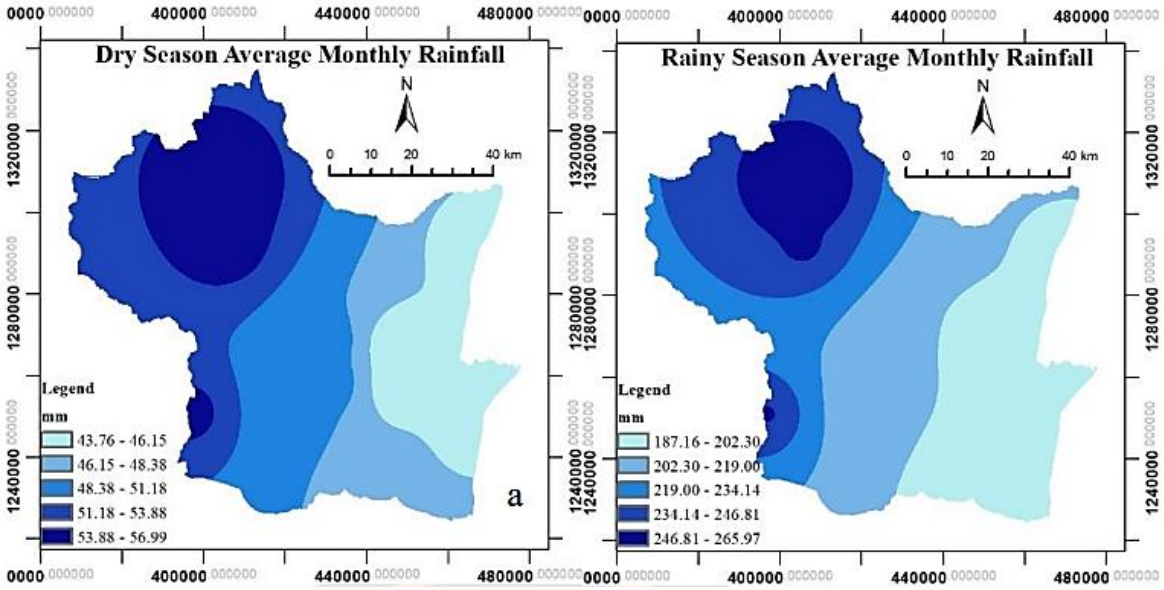


Figure 2.5 Map of Kampong Speu showing: (a) Dry season average monthly rainfall; (b) Rainy season average

According to CFE-DM, Kampong Speu Province is one of the most drought-affected provinces in Cambodia due to delayed rainfall during the rainy season and no or limited rainfall during the dry season (Figure 2.6).[44,45] Based on research focusing on physical parameters and remote sensing data, Koem et al. concluded that 26.30 per cent of the province falls into the moderate drought hazard category, and 24.36 per cent in the very high category, 14.64 per cent in the high category, 20.88 per cent in the low category, and 13.82 per cent in the very low category. The study also categorised some areas within the Basedth, Samraong Tong, Odongk, and Kong Pisei Districts with a high drought hazard level. On the other hand, 13.55 per cent of the total area of the Aoral District was categorised as having a very low, and 12.97 per cent as having a low drought hazard level.[46]

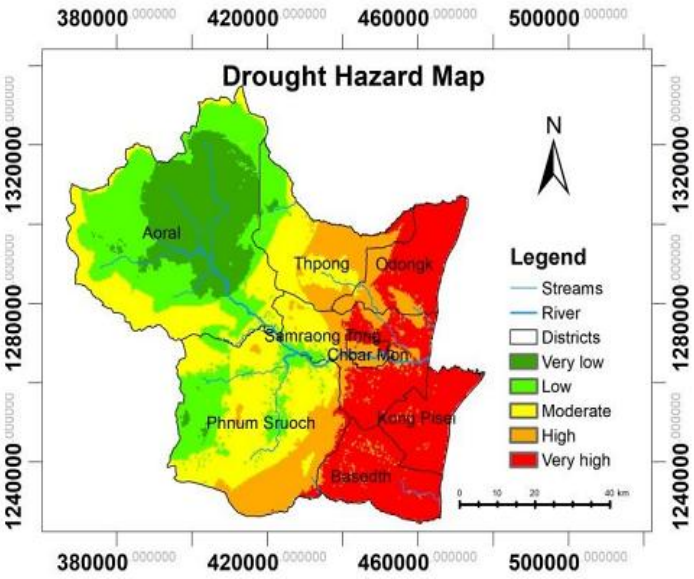


Figure 2.6 Drought Hazard Map of Kampong Speu Province.

During the El Niño events in 2015 and 2016, widespread crop failures, food insecurity, and significant economic losses occurred in the agricultural sector.[47] 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.

[42] Ibid
[43] 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.
[44] CFE-DM. 2017. Cambodia Disaster Management Handbook. Phnom Penh: Center for Excellence in Disaster Management & Humanitarian Assistance.
[45] 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
[46] C. Koem, K. Nusit, and S. Tantanee. (2021). Spatial Distribution of Drought Hazard Mapping Based on AHP and GIS in Kampong Speu Province
[47] Ibid.

3. Project Area

a. Kampong Speu Province

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. [48] , [49] 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.[50]

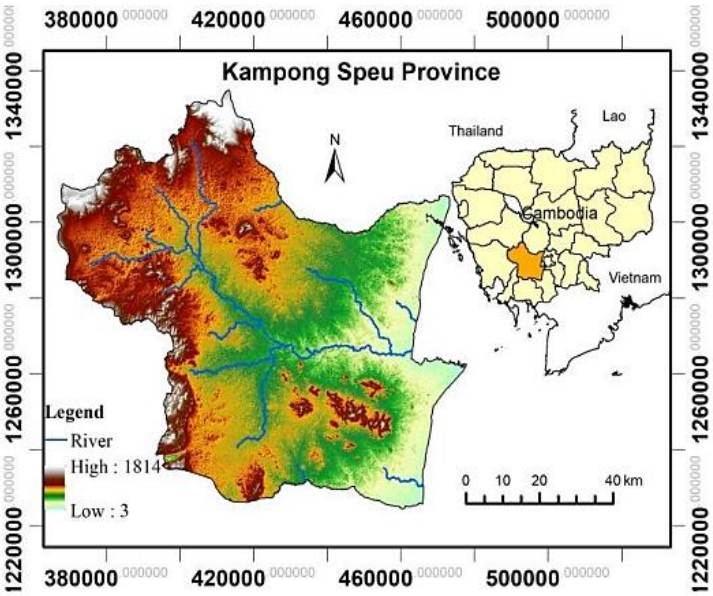


Figure 3.1 Project area in Kampong Speu Province

The socioeconomic profile of the province is marked by a significant reliance on agriculture, which employs approximately 60.2 per cent of the population. In comparison, 39.5 per cent work in the service sector, and only 0.3 per cent are engaged in handicrafts. The poverty rate in Kampong Speu was 20.6 per cent in 2018, with a considerable portion of the population living near or below the national poverty line.[51] 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 households in non-agricultural occupations.[52] 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.[53]

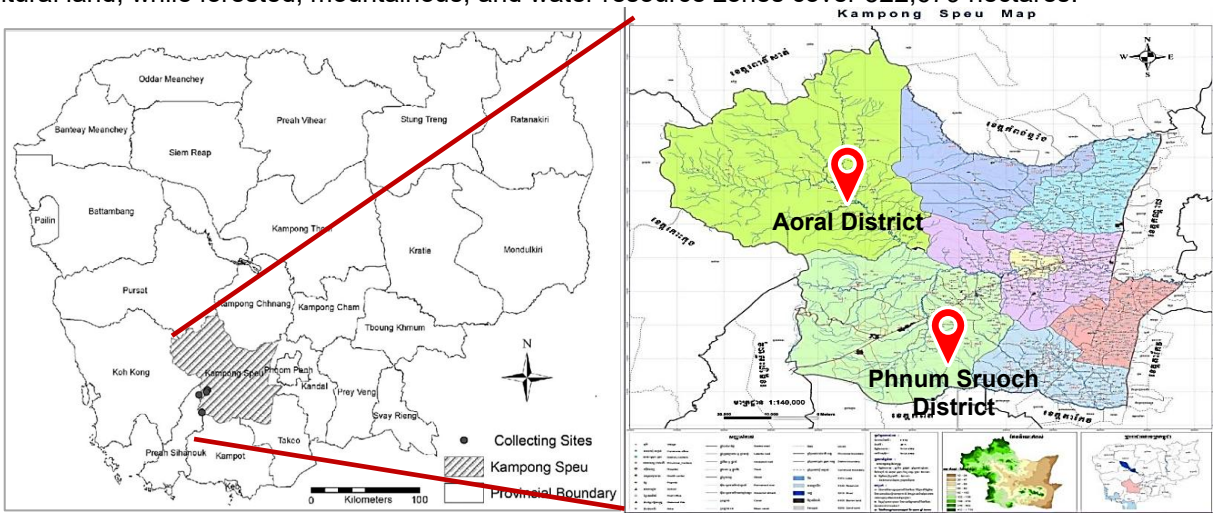


Figure 3.2 Map of Cambodia (left) and Kampong Speu Province (Right)

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.[54,55] From 1999 to 2006, the province faced severe climate events almost annually, particularly in river-adjacent areas where flash floods were especially destructive.[56,57] Tourism is an emerging economic sector, with the province attracting 617,576 visitors in 2020 to destinations such as Ampe Phnom, Chambok Waterfall, V Kirirom Pine Resort, and Te Teuk Pus Hot Springs.[58]

[48] Kampong Speu administrative website (2018)
[49] C. Koem, K. Nusit, and S. Tantanee. (2021). Spatial Distribution of Drought Hazard Mapping Based on AHP and GIS in Kampong Speu Province
[50] National Institute of Statistics (2000). *General Population Census of Cambodia, 1998: Village Gazetteer.* NIS, Kingdom of Cambodia.
[51] World Bank Climate Portal. (2023). *Climate Data for Cambodia.*
[52] Chhinh Nyda et al. (2022). Quantitative Analysis of Household Vulnerability to Climate Change in Kampong Speu Province, Cambodia
[53] C. Koem, K. Nusit, and S. Tantanee. (2021). Spatial Distribution of Drought Hazard Mapping Based on AHP and GIS in Kampong Speu Province
[54] C. Koem, K. Nusit, and S. Tantanee. (2021). Spatial Distribution of Drought Hazard Mapping Based on AHP and GIS in Kampong Speu Province
[55] Cited in Veasna, K. (2022). Climate Change Resilience and Food Security through Water Management in the Basedth district of Kampong Speu province
[56] Chhinh Nyda et al. (2022). Quantitative Analysis of Household Vulnerability to Climate Change in Kampong Speu Province, Cambodia
[57] Mendoza, et al. (2014). Assessing Vulnerability to Climate Change Impacts in Cambodia, the Philippines and Vietnam: An Analysis at the Commune and Household Level
[58] Provincial Tourism Department, 2021

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

The project will target the following high-priority areas within Kampong Speu Province: **Te Teuk Pus, Aoral** and **Phnum Sruoch**. These districts 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.[59]

i. Te Teuk Pus: Geothermal Significance and Challenges

Te Teuk Pus in Sangke Satob Commune of Aoral District is a rare geothermal hot spring site in Cambodia, 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.[60] 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.

ii. Aoral District: Highland Conservation Frontier

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, 10,138 households with 44,808 people, including 22,821 females, live in Aoral District. Fifteen-point five percent of the households are female-headed, and 624 residents have disabilities. Nineteen-point thirty-eight per cent of people live below the poverty line. Only 2,269 households used clean water. In 2022, nearly 7,567 households had proper latrines, and only 0.2 percent accessed the regular solid waste management collection service.

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 per cent of the population works in agriculture, 0.6 per cent in handicrafts, and 24.4 per cent in services.

iii. Phnum Sruoch District: Transitional Zone at Risk

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 Srouch. 15. Fifteen-point five per cent of households are headed by females, and 811 residents have disabilities. Six-point-seven-five per cent of households live below the poverty line. Only 26.4 per cent of households are connected to piped water, while 68.1 per cent use wells, and 5.5 per cent use rainwater harvesting as a water resource. Nearly 40 per cent of households lack proper latrines, and only 0.8 per cent have access to the regular solid waste management collection service.

The district's communities rely on rain-fed agriculture, livestock, and forest-based activities, including resin tapping and bamboo harvesting. Seventy-one point four per cent of residents engage in the agricultural sector, 3 per cent in the handicraft sector, and 28.61 per cent 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 waterbodies 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.

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

[59] National Institute of Statistics (2000). *General Population Census of Cambodia, 1998: Village Gazetteer.* NIS, Kingdom of Cambodia.
[60] Phak Seangly (2025, March 25). Kampong Speu geothermal pools set for formal ecotourism status

Chambak and Traeng Trayoueng, who depend on rain-fed farming and non-timber forest products. These communities face high poverty, limited infrastructure, and few income options. [61,62] 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.[63] 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 80,000 tourists annually, but hazards and weak waste management jeopardize tourism and conservation. Despite limited enforcement, the Chambok 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. [64]

4. Socioeconomic Context and Climate Vulnerability

Cambodia's GDP was estimated at US$29.8 billion in 2021. However, climate change poses a significant threat to long-term economic performance, with projections indicating a potential 2.5 per cent reduction in GDP by 2030 and nearly 10 per cent by 2050. [65] 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.[66] The service sector, mainly made up of informal trade and catering services, provides limited job security and weak protection against climate-related disruptions.

Despite notable poverty reduction over the past two decades, with incidence falling from 60 per cent in 2000 to 13.5 per cent 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.[67] 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 per cent of the population is now considered poor. Rural poverty remains highest at 22.8 per cent, compared to 12.6 per cent in other urban areas and just 4.2 per cent in Phnom Penh. While official unemployment rates remain low (around 2 per cent), these figures mask widespread underemployment, informality, and subsistence-level livelihoods in rural areas. [68] 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 labor. 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.

In Kampong Speu Province, where the proposed project is located, the Human Development Index (HDI) is relatively low at 0.499.[69] Around 60.2 per cent of residents[70] rely on agriculture (including rice cultivation and palm sugar production), while 39.5 per cent 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.[71]

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.

[61] 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
[62] ICEM. (2003). *Field Study Cambodia: Biodiversity and Protected Areas*.
[63] Open Development Cambodia. (2022). *Kirirom National Park Profile*. https://opendevelopmentcambodia.net
[64] Open Development Cambodia. (2022). *Kirirom National Park Profile*. https://opendevelopmentcambodia.net
[65] 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
[66] Embassy of the Republic of Belarus in the Socialist Republic of Vietnam (2022). Cambodian economy. https://vietnam.mfa.gov.by/en/exportby/camobz/cameco/
[67] Asian Development Bank (2021). Employment and Poverty Impact Assessment. https://www.adb.org/sites/default/files/linked-documents/54195-001-sd-03.pdf
[68] 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/
[69]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
[70] Ibid.
[71] International Labour Organisation (2018). *The employment impact of climate change adaptation*. Input Document for the G20 Climate, Sustainability Working Group. ILO, Geneva.

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. [72]

5. Gender Context

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.[73] 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.[74] Maternal mortality fell from 437 per 100,000 live births in 2000 to 170 in 2014, and further to 160 in 2017. [75,76] Access to maternal health care has significantly improved, and 99 per cent of women now give birth with the assistance of a skilled health provider, compared to just over one-third in 2000.[77] 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.[78]

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 per cent in 1997 to over 97 per cent in 2017/18.[79] As of 2021, 63 per cent of girls and 52.5 per cent of boys completed lower secondary education.[80] However, significant gaps persist in secondary and adult education. According to the Human Development Report (SDG 4.4), only 18.3 per cent of females complete secondary education, compared to 31.7 per cent 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 per cent) than men (88.4 per cent, 2021).[81]

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 (then 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 per cent for females and 82.1 per cent for males (2022).[82] 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.[83]

In Kampong Speu Province, women comprise 51.8 per cent of the population (2019)[84], and 25.1 per cent of households were female-headed as of 2004.[85] 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 per cent of women in Kampong Speu reported not being involved in decisions about major household purchases.[86] Furthermore, 19.1 per cent of women aged 15 - 49 reported having experienced emotional, physical, or sexual violence by a current or former intimate partner.[87]

> *"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 Speu[88]

[72] Open Development Cambodia. (2022). *Kirirom National Park Profile*. https://opendevelopmentcambodia.net
[73] World Economic Forum (2022) Global Gender Gap Report 2022
[74] https://www.who.int/cambodia/news/detail/07-04-2023-cambodia-celebrates-significant-health-achievements-on-the-75th-anniversary-of-who
[75] https://genderdata.worldbank.org/countries/cambodia/#:~:text=In%20Cambodia%2C%20the%20labor%20force,labor%20force%20participation%20has%20decreased.
[76] UNDP (2022) Human Development Report 2021-22, p 293
[77] https://www.who.int/cambodia/news/detail/07-04-2023-cambodia-celebrates-significant-health-achievements-on-the-75th-anniversary-of-who
[78] https://genderdata.worldbank.org/countries/cambodia/
[79] https://www.unicef.org/cambodia/education
[80] https://genderdata.worldbank.org/countries/cambodia/
[81] UNDP 2022 Human Development Report 2021-2022
[82] https://genderdata.worldbank.org/countries/cambodia/
[83] PRB (2012). *Women more vulnerable than men to climate change*. https://www.prb.org/resources/women-more-vulnerable-than-men-to-climate-change/
[84] General Population Census 2019
[85] National Institute of Statistics (NIS), Cambodia (2004). Cambodia Inter-Censal Population Survey 2004 – Kampong Speu Province
[86] UNDP. (2024, April). LEAVE NO ONE BEHIND Analysis in Cambodia
[87] 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.
[88] 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

During climate-related shocks such as droughts and floods, gender disparities are significantly amplified. Men typically have greater economic independence and 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.[89] 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.[90,91] 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

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 Phnom 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.

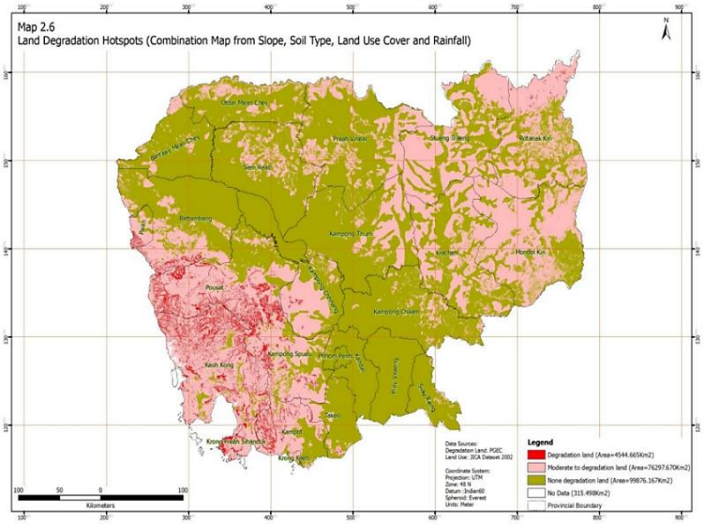


Figure 6.1 Land Degradation Hotspots in Cambodia

a. Land Degradation and Deforestation

The rate of forest loss in Cambodia has been among the highest globally, with deforestation occurring even within areas designated as legally protected (Figure 5.1). 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.

b. Biodiversity Loss

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.

c. Water Resource Challenges

Hydrological cycles in upland areas are becoming less reliable. Springs and streams that feed both ecosystems and human settlements are experiencing irregular flow, dry-season depletion, and wet-season overflow. Wastewater contamination from settlements and tourist areas is degrading water quality and threatening aquatic habitats. Climate change is altering recharge patterns and intensifying demand for increasingly scarce water resources, thereby escalating conflict over usage and reducing adaptive capacity.

d. Economy

Cambodia's economy, which is anchored in agriculture, tourism, construction, and garment manufacturing, is vulnerable to climate disruptions. Agriculture, which sustains nearly 40 per cent of the labour force, is increasingly

[89] PRB (2012). Women more vulnerable than men to climate change. https://www.prb.org/resources/women-more-vulnerable-than-men-to-climate-change/
[90] 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.
[91] Chhinh Nyda et al. (2015). Quantitative Analysis of Household Vulnerability to Climate Change in Kampong Speu Province, Cambodia

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 per cent by 2050.[92] Worker output, especially in outdoor sectors, is also projected to decline due to rising heat stress.

e. Food Security Impacts
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.[93]

f. Flooding, Heat Stress, and Public Health
Cambodia is facing increasing health threats from climate-induced phenomena, including extreme heat, flooding, and vector-borne diseases. Older persons, children, outdoor workers, and those with pre-existing conditions are particularly at risk. Changing weather conditions are expanding the range and seasonality of diseases like malaria and dengue, while poor water and sanitation infrastructure heightens the risk of diarrheal and respiratory illnesses. By 2080, heat-related mortality among older people is projected to increase drastically if emissions remain high.[94] Mental health stress, often overlooked, is also becoming more prevalent due to climate-related displacement, crop loss, and community disruption.

g. Water Resources and Waste Management
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.[95] 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.[96] Communities living downstream are increasingly affected by the decline in water services.

h. Ecosystem and Livelihood Fragility
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.[97] [98] Ecotourism, which offers a pathway for sustainable development, is also at risk from the degradation of natural attractions and the deterioration of access roads.

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.[99] 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.

7. Lessons Learned from Past Projects

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

[92] 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).
[93] 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.
[94] 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
[95] IPCC. (2022). *Summary for Policymakers: Asia*.
[96] Asian Development Bank (ADB, 2022): *Cambodia Water Supply and Sanitation Sector Assessment, Strategy, and Road Map*.
[97] ICEM. (2003). *Field Study Cambodia: Biodiversity and Protected Areas*.
[98] Adaptation Fund. (2018). *Mid-Term Review: Enhancing Climate Resilience of Rural Communities in Protected Areas*.
[99] World Bank & ADB. (2021). Climate Risk Country Profile: Cambodia. https://climateknowledgeportal.worldbank.org

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.

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.

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.

8. Target Area Selection Rationale

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 Sangke Satob Commune 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.

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.

Together, these three nodes, **Te Teuk Pus**, **Aora**l, 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.

B. Project/Programme Objectives

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 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.

Objectives: 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.

1. Strengthen inclusive local governance and institutional capacities by training at least 500 local officials and community leaders to plan, finance, and implement climate risk management strategies by 2030.
2. Enhance climate-resilient livelihoods for at least 100 households through the promotion of ecotourism enterprises, vocational skill development, and adoption of climate-smart agriculture techniques across three target communes.

3. Restore and protect at least 57 hectares of degraded ecosystems using nature-based solutions, including reforestation, agroforestry, and wetland restoration to improve biodiversity and ecosystem services by the end of the project.
4. Improve equitable access to climate-resilient infrastructure by constructing or rehabilitating 34 small-scale water and access facilities (e.g., eco-trails, water points, solar lighting) that support adaptation and reduce vulnerability of residents.

A substantial portion of the total project budget, **84.9 per cent,** 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 1 Summary of Project/Programme Components, Outputs, Outcomes, and Budget

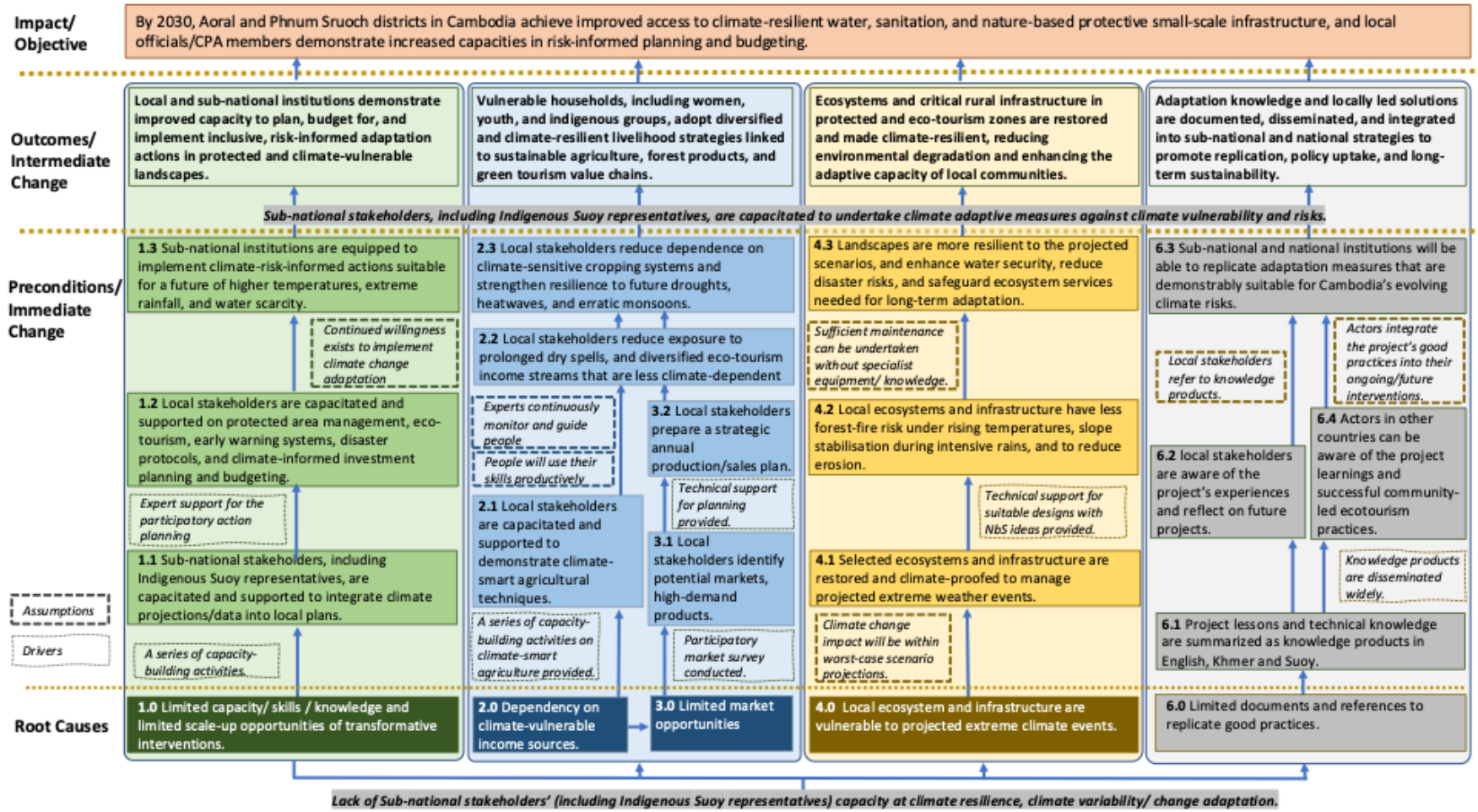
Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
Component 1 Build capacity at the community and sub-national levels to strengthen inclusive climate governance and Protected Area Management	**Output 1.1.** Community capacity-building programme implemented in target districts to maintain climate-resilient infrastructure, manage eco-tourism, and monitor ecosystem assets, with at least 40 per cent participation (of 300 total participants) women, youth, and indigenous groups participating *(to support sustainable implementation of interventions under Components 2 and 3)*	**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 center established (in Te Teuk Pus) and operated to train at least 200 youth, women, and marginalized groups annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques.		680,000
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 per cent 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**		
	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.	**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 3.2 Biodiversity corridor established over approx. 57 hectares, linking degraded forest patches with native reforestation using nursery-supported species of ecological and livelihood value.		650,000
	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
	Output 3.4 3 irrigation canals (7 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
	A. IN PHNUM SRUOCH DISTRICT		

	Output 3.5 Firebreaks (1.5 km) and eco-trails (1.5 km) constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.		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.		250,000
	Output 3.7 Climate-resilient WASH facilities built in 6 priority villages (18 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
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 marginalized 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 (50% 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 per cent)			875,590
7. Total Project/Programme Cost			9,216,590
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			783,410
Amount of Financing Requested			10,000,000

D. Theory of Change Narrative

- **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.
- **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.
- **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.
- **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.
- **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.

Theory of Change Diagram



Key Assumptions

- Continued willingness exists among local stakeholders to implement climate change adaptation.
- Stakeholders will use their learned skills productively
- Experts continuously monitor and guide stakeholders during the project period.
- Climate change impact will be within worst-case scenario projections.
- Sufficient maintenance of ecosystems and infrastructure can be undertaken without specialist equipment/ knowledge.
- Local stakeholders refer to knowledge products.
- Actors integrate the project's good practices into their ongoing/future interventions.
- Local, provincial, and national government officials see the need for and engage in continuous dialogue and knowledge exchange networks.

Risks

- Insufficient buy-in from stakeholders (counterparts at the national and sub-national government offices, etc.), hindering implementation. Insufficient involvement of women and youth
- The absorption capacities of beneficiary institutions are weak, or there is a lack of commitment.
- Inappropriate or dysfunctional Grievance Redress Mechanisms and procedures at the sub-national level.
- Security issues may reduce or restrict access of the implementing entity, executing entity, contractors and other project stakeholders to the project sites.

E. Projected Calendar

Table 2 Project Milestones and Timeline

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

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project Components, concrete adaptation activities.

The actions proposed by the Project have been designed to target the poorest and most vulnerable people in the protected areas of 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.

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.

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 including 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.

1. Component 1: Building Institutional Capacity for 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.*

This component seeks to build a strong institutional foundation for climate adaptation by addressing the systemic capacity gaps at the community and sub-national levels. Recognizing the fragmented climate governance landscape in Cambodia—where Commune Investment Plans (CPAs) and Protected Area 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, ensuring the long-term sustainability of interventions implemented in Components 2 and 3.

• **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 per cent 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 the UN-Habitat People's Process to further strengthen the capacity of the Chambok community. Communities and other project locations will be mentored by this community in community organization and community asset management. The training will include modules on infrastructure maintenance (e.g., pond and canal upkeep), ecosystem monitoring, and community-led tourism services. Community-based early warning systems and preparedness protocols will be operationalized in high-risk zones for fire, drought, and flash floods. At least 40 per cent 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, conducting training needs assessments, preparing training curricula and materials, and delivering initial and refresher trainings.

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 committees on integrating climate risk assessments, adaptation priorities, and disaster response protocols into Commune Investment Plans (CIPs) and Protected Area 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, prioritizing 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 local communities, 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 participants[100] among whom 30 per cent will be women. Potential activities include defining trainees, conducting training needs assessments, preparing training curricula and materials, and delivering initial and refresher trainings.

• **Output 1.3 Vocational training center established (in Te Teuk Pus) and operated to train at least 400 youth, women, and marginalized groups annually in solar repair, eco-guiding, digital skills, and sustainable construction techniques.**

Existing commune center

A permanent vocational training center will be constructed using 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 youth, women, and marginalised groups 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 Aural) and the only hot spring in Cambodia (Te Teuk Pus), digital literacy for climate information access, making of bamboo products, local product marketing, 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 center with youth participation, and post-site inspection.

2. 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.*

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. Recognizing 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.

[100] In average, 10 members for each commune council and 15 members for each CPA Committee

- **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 preparing assessment forms, conducting market and climate vulnerability assessments, and preparing a report summarizing the assessment results.

- **Output 2.2 At least 100 households (min. 40 per cent 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 per cent 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, conducting training needs assessment, preparing training curricula and materials, and providing initial and refresher training.

- **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.**

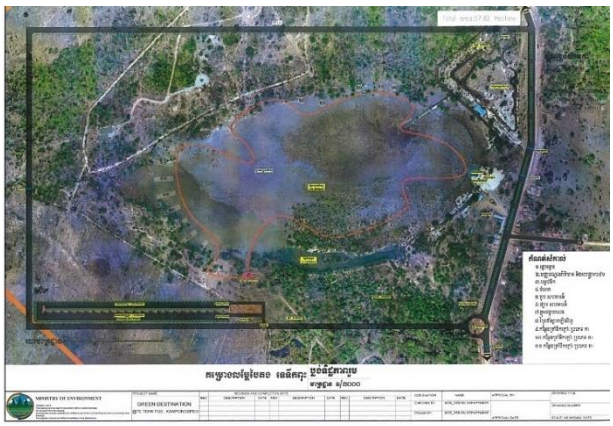
A minimum of three demonstration plots per district will be co-managed by youth and older farmers, showcasing integrated climate-resilient practices and small-scale processing (e.g., organic vegetables, bamboo, and cardamom, resin collection, herbal products, organic produce). Cardamom can be strategically 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 identifying the proper demonstration plots, selecting farmers and youth for pilots, and demonstrating climate-smart agriculture.

3. 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.*

This component tackles the interconnected degradation of ecological and infrastructural systems that underpin rural resilience. Given that protected areas are 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 labours will be mobilized for low-tech construction and maintenance tasks (e.g., eco-trail and irrigation system improvement, and firebreak clearing). Through Community Contracting, local community groups will oversee the entire management of the construction process, including monitoring, accounting, and reporting.

a. In Te Teuk Pus



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 in 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.

- **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 lightings). The intervention enhances visitor safety and preserves geothermal functions, while Indigenous Suoy communities will be engaged in co-management, reinforcing cultural preservation and local ownership. Possible activities include site inspection and consultation, detailed design, sediment removal, slope stabilization, eco-trail improvements, solar lighting installation, field monitoring, and post-site inspection.

- **Output 3.2 Biodiversity corridor established over approx. 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 of approximately 57 hectares will be developed, to link 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. Possible activities include site inspection/ consultation, detailed design, biodiversity corridor establishment, enhancement of nursery, tree planting, field monitoring, and post-site inspection..

b. In Aoral District

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 three irrigation canals and one 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.

- **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 including 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, developing a detailed schedule, rehabilitating the village pond, conducting field monitoring, and performing post-site inspections.

- **Output 3.4 3 irrigation canals (7 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 (in total of seven km) 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. Possible activities include site inspection and consultation, creating a detailed schedule, establishing irrigation canals, rehabilitating a water gate, conducting field monitoring, and performing post-site inspection.

c. In Phnum Sruoch District

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 system 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, recognizing 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.

- **Output 3.5 Firebreaks (1.5 km) and eco-trails constructed with erosion-control structures and safety measures (handrails, signage), improving emergency access and biodiversity protection.**

1.5 kilometers 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 trails will be constructed using local material and the community will be contracted for the construction. Possible activities include site inspection and consultation, detailed design preparation, preparation of community contracts, community mobilization, construction of firebreaks and eco-trails, installation of signage, field monitoring, and post-inspection.

- **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 construction. Of a rock dam and 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.

- **Output 3.7 Climate-resilient WASH facilities built in 6 priority villages (18 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 with menstrual hygiene stations and water points using universal design standards. These facilities will reduce exposure to health risks and enhance dignity and inclusion for women, girls, and persons with disabilities. Possible activities include site inspection and consultation, detailed design preparation, construction of WASH facilities, field monitoring, and post-site inspection.

4. 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.*

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 localized, 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.

- **Output 4.1 Project lessons and technical knowledge (translated into Khmer, Suoy), audio, and video formats for inclusive dissemination among non-literate and marginalized 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 creating knowledge products and sharing them through multiple channels.

- **Output 4.2 Replication workshops conducted with district, provincial, and national actors (30 per cent 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 per cent 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 organizing replication workshops and advocating for the project to a broader group of stakeholders.

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

1. Project Beneficiaries

The proposed project will directly benefit an estimated 26,700 individuals (approximately 5,340 households) residing in 6–8 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 per cent will be women, 20 per cent will be youth (ages 15–30), and no less than 5 per cent 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

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.

3. Social Benefits

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

The restoration of approximately 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 and early warning systems, will decrease wildfire occurrence and improve overall ecosystem health. By promoting energy-efficient cookstoves and solar lanterns, the project will reduce fuelwood consumption, lower emissions, and relieve pressure on forest resources. 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

The project will mainstream gender equality, youth leadership, and social inclusion across all components. At least 30 to 50 percent 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 time poverty, enhancing income control, and expanding the agency of women and girls, particularly in sectors like eco-tourism, agro-processing, and community planning.

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. A dedicated Gender and Social Inclusion Action Plan will be developed during the full proposal stage, supported by sex- and vulnerability-disaggregated indicators and a grievance redress mechanism to ensure ongoing accountability.

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.

Aligned with Cambodia's updated NDC (2020) 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, energy-efficient cookstoves) further contributes to Cambodia's mitigation co-benefits under its NDC, while enhancing climate-resilient infrastructure and governance systems at the local level.

Table 3 Summary of economic, social, and environmental benefits of adopting a gendered approach

Benefit Type	Baseline	Benefits of project actions
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. - 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.	- The project promotes climate-smart agriculture, NTFP value chains, and eco-tourism, creating sustainable income for 4,500 people. - Women 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. - Improved household incomes and access to assets strengthen financial resilience.
Social	- Mountain 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. - Persons with disabilities are often excluded from planning and services.	- Inclusive local adaptation planning promotes participation of women, youth, and marginalized 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.
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 in 57 hectares improve biodiversity, soil retention, and water regulation. - Energy-efficient stoves and solar lighting reduce 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.
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.

C. Cost-effectiveness of proposed programme

1. Integrated Investment Approach

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 summarized in Table 4 to be further updated during the preparation of the full proposal.

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.

Cost-effectiveness was assessed using the unit cost per direct beneficiary, calculated by dividing the estimated cost of each output by the projected number of direct beneficiaries identified through consultations, population data, and vulnerability assessments. This provides a transparent and comparable metric across adaptation measures. Actual cost-effectiveness is significantly higher than the calculation indicates, as it excludes indirect beneficiaries. Many outputs generate wider indirect benefits for downstream communities, future tourists, households using improved services, and populations experiencing reduced disaster risk. If these indirect beneficiaries were included, the cost per beneficiary would be substantially lower. In addition, strong measures of gender, youth, and Indigenous inclusion enhance social equity without increasing per-beneficiary costs.

Table 4 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 4 thus provides a transparent, conservative estimate of the cost per direct beneficiary for each adaptation measure.

***Table 4** Beneficiaries and dimensions of the outputs (preliminary estimate)*

Output	District	Estimated number of direct beneficiaries (A)	Estimated cost (B)	Cost-effectiveness of direct beneficiaries (B / A)
Output 1.1	Aoral and Phnom Sruoch Districts	300 (Women: 120)	$120,000	Cost per beneficiary: $400
Output 1.2		315 (Women: 95)	$110,000	Cost per beneficiary: $349
Output 1.3	Te Teuk Pus	400 (Women: 200)	$680,000	Cost per beneficiary: $1,700
Output 2.2	Aoral and Phnom Sruoch Districts	500 (Women: 200)	$250,000	Cost per beneficiary: $500
Output 2.3		500 (Women: 200)	$500,000	Cost per beneficiary: $1,000
Output 3.1	Te Teuk Pus	22,700 (Women: 11,700)	$1,800,000	Cost per beneficiary: $79.29
Output 3.2		22,700 (Women: 11,700)	$650,000	Cost per beneficiary: $28.63
Output 3.3	Aoral District	4,300 (Women: 2,200)	$250,000	Cost per beneficiary: $58.13
Output 3.4		8,400 (Women: 4,200)	$750,000	Cost per beneficiary: $89.28
Output 3.5	Phnum Sruoch District	4,000 (Women: 2,000)	$1,750,000	Cost per beneficiary: $437.5
Output 3.6		4,000 (Women: 2,000)	$250,000	Cost per beneficiary: $62.5
Output 3.7		4,000 (Women: 2,000)	$850,000	Cost per beneficiary: $212.5

2. Prioritisation of High-Yield, Locally Managed Interventions

Approximately 78 per cent 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 at least 57 hectares of degraded land, rehabilitation of 10 village ponds, construction of 10 kilometres 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 (such as for 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
The project adopts UN-Habitat's proven Community Contracting model, which mobilises unskilled and semi-skilled labour from target communities for the implementation of 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
Without intervention, the project area faces increasing climate-related risks, including forest fires, droughts, soil erosion, and degradation of agricultural productivity. These hazards pose direct threats to livelihoods and food security in Aoral and Phnom Sruoch Districts. Studies by the Asian Development Bank indicate that Cambodia could experience GDP losses of up to 9 per cent 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
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 per cent 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
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
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 between 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
The project enhances the adaptive capacity of marginalized 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 tasks such as eco-trail repair, water system upkeep, and firebreak clearing. 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 5 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 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

D. Consistency with national or sub-national development programmes

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 operationalizes national policies on 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

The project contributes directly to the **Rectangular Strategy Phase IV (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.[101] 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.[102]

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

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

2. Alignment with National Climate Policy and Adaptation Planning

The project directly supports the vision and strategic objectives of the **Cambodia Climate Change Strategic Plan (CCCSP) 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.

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

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

At the macro-policy level, the project is consistent with the **National Strategic Development Plan (NSDP)**, which prioritizes:

- 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 the capacity of commune councils and CPA committees to mainstream climate risks into planning and budgeting.

5. Contribution to Sustainable Development Goals (SDGs)

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

Table 6 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 7 ***Key Government policies/strategies/plans adopted in the project***

National Policy / Responsible Agency	Proposed Project Elements Consistent with Policy
Cambodia Climate Change Strategic Plan (CCCSP) 2024–2033 – Ministry of Environment	Supports CCCSP Strategic Objectives 1, 2 and 3 by integrating sustainable agriculture, water systems, and institutional capacity building into local climate adaptation measures.
Cambodia National Adaptation Plan (NAP) – National Council for Sustainable Development	Addresses upland forest community vulnerabilities through ecosystem-based adaptation, early warning systems, and climate-resilient livelihoods in line with NAP priorities.

Updated Nationally Determined Contributions (NDC 2020 and inputs to NDC 3.0) – Ministry of Environment	Restores 57 hectares of forest, strengthens commune-level climate governance, and promotes inclusive adaptation – aligned with FOLU targets and adaptation priorities in NDC 2020 and 3.0.
National Forest Programme 2010–2029 – Forestry Administration	Promotes participatory forest governance, landscape restoration, and non-timber forest product (NTFP) value chains in support of community-based forest management.
National Strategic Development Plan (NSDP) – Royal Government of Cambodia	Delivers tangible results – including resilient infrastructure and sustainable livelihoods – that support NSDP goals for poverty reduction and rural resilience.
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.

Table 8 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, informs potential baseline data for CPAs in Kirirom.
Effectiveness of Community Forestry in Prey Lang Forest (2014)	Peer-reviewed Study	Lambrick et al.	Confirms positive impacts of community forestry on forest 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	NTFP-EP & ICSO	Supports the project's attention to Indigenous and ethnic minorities in upland forest regions.

E. Compliance with relevant technical standards and policies

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.

i. Environmental and Legal Safeguards

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)**.

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.

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

- **Water Resources:** All water infrastructure (e.g., ponds, irrigation canals, flood gates) 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.
- **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)**.
- **Rural Infrastructure:** Small-scale rural works (e.g., slope stabilization, 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.
- **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

All construction and infrastructure-related activities will comply with 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.

2**. Environmental and Social Safeguards and Adaptation Fund ESP**

The project is anticipated to fall under **Category B**, indicating site-specific, reversible impacts of limited scale. An Environmental and Social Management Plan (ESMP) will be 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.

3. 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.

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.

Table 9 Compliance with national technical standards, rules, regulations and procedures, and ESP principles

Output	AF ESP	Relevant Rules, Regulations, Standards and Procedures	Compliance procedure and authorising offices

	[103]		
1.1 Community training on climate-resilient infrastructure, eco-tourism, ecosystem monitoring	9, 10, 11, 15	Sub-Decree 219 (CDP-CIP guidelines); National Ecotourism Standard; Protected Area Law (2008); EIA Sub-Decree (1999)	Training curriculum reviewed by MoE and GDANCP; eco-trail/monitoring modules follow technical guidelines from MoE and MRD; Commune Councils & CPA Committees oversee local implementation
1.2 Training of Commune Councils & CPA committees on climate-budgeting, risk mapping, disaster response	1, 3, 9, 7, 11, 14, 15	Law on Local Governance; CCCSP (2024–2033); Sub-Decree 219; DRM Law (2015)	Content co-developed with Ministry of Interior and MOWRAM; risk mapping validated by District DRM Committees; Commune structures integrate outputs into CDPs/CIPs
1.3 Vocational centre (Te Teuk Pus): solar repair, eco-guiding, digital, sustainable construction	2, 3, 5, 7, 9, 10, 15	Occupational Training Law (2013); MRD/MLMUPC technical building standards; National Renewable Energy Policy; Protected Area Management Plan	Training center design cleared by MRD/MLMUPC; technical modules certified by MoEYS or MoWRAM; CPAs and Commune Councils partner in host facilities
2.1 Resilient value-chain market & climate vulnerability assessments	2, 3, 5, 7	Cambodia Climate Change Priority Action Plan (2023–30); AG-Extension Policy; MAFF market guidelines	Assessment tools approved by Provincial Ag Office; indigenous knowledge recognized in consultation protocols; findings inform local market plans
2.2 CSA training for 100 households	2, 3, 5, 7, 9, 11	MAFF Climate-Smart Agriculture Circular; Extension Service Standards; Water Resource Law (when irrigation included)	Training by certified MAFF extension agents; CSA demonstration linked to MOWRAM safety standards where pumps installed
2.3 Demonstration plots co-managed by youth/elders	2, 3, 5, 7, 9, 11	National Agroforestry Guidelines; Youth Development Policy; Agricultural safety codes	Plots registered via Commune extension office; gender/youth mentorship supported by MoEYS; compliance with food safety regulations
3.1 Te Teuk Pus geo-site rehabilitation	2, 3, 5, 7, 9, 11, 12, 14	Environmental Law; Green Development Plan; Protected Area Law; Cultural Heritage sub-decree	Civil works EIA-exempted but screened; materials approved; Suoy Indigenous FPIC process facilitated by GDANCP
3.2 Biodiversity corridor (57 ha)	9, 10, 11, 13	Protected Area Law; Forest Code; Biodiversity Strategy; REDD+ Guidelines	Reforestation plan approved by FA & GDANCP; species from local seed bank; community forestry groups co-manage planting
3.3 Village pond rehabilitation	1, 2, 6, 9, 11	Water Resource Law; MOWRAM pond codes; Commune technical standards	Designs reviewed by MOWRAM; built with Commune labour and monitored; pond use governed by local Water Committee
3.4 Aoral irrigation canals (7 km) & gate upgrades	1, 2, 4, 6, 9, 11	Water Resource Law; MOWRAM safety engineering standards; DRM Law	Engineering review by MOWRAM; maintenance protocols built into Commune CDPs/CIPs; seasonal monitoring with CPA/TB
3.5 Phnum Sruoch firebreaks & eco-trails	2, 6, 9, 10, 11, 13, 14	Protected Area Law; Natural Resource Code; Trail design guidelines (MRD/MOE); Fire Safety Standards	Designs screened by GDANCP; erosion-control modules certified by MRD; trails built with community and park ranger oversight
3.6 (Phnum Sruoch) climate-resilient irrigation upgrades	1, 2, 4, 6, 11, 12	Water Resource Law; MOWRAM irrigation codes; WASH Law (if domestic use)	Engineering plans approved by MOWRAM; safety checks done; Commune Water Committees manage operations
3.7 WASH facilities with water supply connection in villages	2, 3, 4, 12, 13	Clean Water Law; National RWSSH Strategy; WASH Safety Standards; UN Disability-Inclusive Guidelines	Designs vetted by MRD; inclusive features reviewed by Disability Coordinator's Office; built with local masons
4.1 Multilingual knowledge materials for non-literate groups	1, 2, 3, 7	NAP Communication Recommendations; Gender & Inclusion Resolutions; MoE communication standards	Materials co-developed with local translators; peer-reviewed with CPA committees; distributed via Commune & partner media
4.2 Replication workshops with 50 per cent women attendance	1, 2, 3, 5, 9, 10, 11, 13	Gender Action Plan; Environment Strategy (2023–33); NAP; CCCSP	Workshop events approved by Provincial Planning Dept; gender targets monitored; inclusion in sub-national plans documented

F. Duplication with other funding sources

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.

[103] AF ESP - 1. Compliance with Law; 2. Access and Equity; 3. Marginalised and Vulnerable Groups; 4. Human Rights; 5. Gender Equality and Women's Empowerment; 6. Core Labour Rights; 7. Indigenous Peoples; 8. Involuntary Resettlement; 9. Protection of Natural Habitats; 10. Conservation of Biological Diversity; 11. Climate Change; 12. Pollution Prevention and Resource Efficiency; 13. Public Health; 14. Physical and Cultural Heritage; and 15. Lands and Soil Conservation

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. Based on the information provided by the Ministry of Environment, the proposed project has considered overlap and potential synergies with nine other ongoing and completed projects.

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.

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.

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.

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 10 Summary of ongoing/pipeline projects

Project Name	Description	Reference	Potential Synergy
Central and Provincial Government Initiatives			
Development of a Buddhist Cultural Center in Kirirom	The Ministry of Environment (MoE) is leading the development of a meditation site and Buddhist Cultural Center inside Kirirom National Park. This aims to promote spiritual practice and eco-tourism while aligning with the park's conservation ethos.	Buddhistdoor Global. (2024). *Cambodia's Ministry of Environment is Developing a Buddhist Cultural Center at Kirirom National Park.* Retrieved from: https://www.buddhistdoor.net/news/cambodias-ministry-of-environment-developing-buddhist-cultural-center-at-kirirom-national-park/	**Output 3.1 and 3.4** The establishment of a Buddhist Cultural Center 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	MoE has launched a green initiative promoting Khmer-style lodging and eco-trails to enhance community-based tourism. Plans include infrastructure that aligns with climate resilience and conservation goals.	Construction & Property News Cambodia. (2024). *MoE is Pushing for Green Recreation Goals in Kirirom and Phnom Kulen National Parks.* Retrieved from: https://construction-property.com/moe-is-pushing-for-green-recreation-goals-in-preah-suramarit-kosomak-kirirom-national-park-and-at-phnom-kulen-national-park/	**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 center (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	A pioneering private eco-city development integrating **eco-tourism**, **IT education (Kirirom Institute of Technology)**, and forest-based recreation. It promotes sustainable economic models while operating inside the park.	Phnom Penh Post. (2023). *Firm Behind Kirirom Resort Gets New Funding.* Retrieved from: https://www.phnompenhpost.com/business/firm-behind-kirirom-resort-gets-new-funding/	**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	The Royal Government of Cambodia approved the allocation of over 200 hectares of national parkland to ONE MORE Ltd. for private tourism and recreation ventures. Environmental assessments are expected during the planning stage.	Construction & Property News Cambodia. (2023). *Govt Allocates More Than 200 Hectares of Land in Kirirom National Park for Private Development.* Retrieved from: https://construction-property.com/govt-allocates-more-than-200-hectares-of-land-in-kirirom-national-park-for-private-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.
200MW solar project in Aoral Eco-City	Real estate developer Hong Lai Huat Group Ltd and China Machinery Engineering Corp (CMEC) will invest $200 million for 20 years in order to sell power to the state-owned utility Electricite du Cambodge (EdC).	Reference: https://www.phnompenhpost.com/business/200mw-solar-farm-set-kampong-speu	**Output 1.3 and 3.7** Collaboration with the solar project can strengthen renewable energy application in water systems, training, and household-level energy resilience. Skills training (Output 1.3) can align with maintenance needs for solar infrastructure installed by private developers.
Donor and NGO Projects			
Chambok Community-Based Ecotourism Project	Operated by NGO *Mlup Baitong* and supported by multiple donors, this project offers homestays, guided forest walks, and cultural tours, empowering villagers to lead conservation through income generation.	NYSEAN. (n.d.). *Chambok Community-Based Ecotourism.* Retrieved from: https://www.nysean.org/teaching-cases/teachingcases-p4jwm-b8wsd-hwey5	**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	Swisscontact Cambodia regularly hosts activities in Kirirom, including tree planting, clean-up drives, and awareness campaigns on sustainable land use and environmental protection.	Swisscontact Cambodia. (2023). *Retreat with a Cause: #GreenOffice Activities in Kirirom National Park.* Retrieved from: https://www.swisscontact.org/en/news/retreat-with-a-cause-greenoffice	**Outputs 1.1, 3.2, and 3.5** Swisscontact's activities can complement the AF project's restoration and awareness campaigns. Jointly organized 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)	Diakonia CCE Supported by the Czech Development Agency implemented the project to offer the solution of building a centre that will target capacity building for agricultural cooperatives (ACs) and their adult members in food processing	https://www.czechaid.cz/en/projects/iagro-improving-the-agricultural-value-chain-in-kampong-speu-province-cambodia	**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-utilize farmer networks or ACs previously engaged.
Development of waterfall to promote local livelihood at Chambak community, Kampong Speu province project	With the GEF Small Grants Programme, UNDP implemented the project to promote livelihood of local villagers at Chambak community so as to enable them to adapt to prolonged drought, heat, and erratic rainfall.	https://sgp.undp.org/spacial-itemid-projects-landing-page/spacial-itemid-project-search-results/spacial-itemid-project-detailpage.html?view=projectdetail&id=17855	**Output 3.2** The GEF-SGP project aimed at livelihood adaptation in response to drought can be expanded through AF-supported interventions such as rehabilitated water points, elevated sanitation, and firebreak-linked tourism corridors.
Local Governments and Climate Change III (LGCC-3)	GCF-funded project, which aims to integrate climate change adaptation into local development planning and finance, supporting	https://www.greenclimate.fund/project/sap058	**Output 1.2** The capacity-building activities of the proposed project can learn from the approaches to integrate climate change adaptation into local plans.

	Cambodia's national climate goals and SDGs across Battambang, Pursat, and Preah Vihear.		
Climate Adaptive Irrigation and Sustainable Agriculture for Resilience (CAISAR) in Cambodia	IFAD's GCF-funded project, which aims to strengthen the climate resilience of Cambodia's agriculture sector and rural communities by improving climate-smart agricultural practices and enhancing the sustainability of rural road infrastructure in the country's most at-risk regions, Kampong Speu, Kampong Chhnang, Kandal, and Pursat provinces.	https://www.greenclimate.fund/project/fp270	**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	GEF-funded project, which aims to improve protected areas management, and to promote ecotourism opportunities and non-timber forest product value chains in the Cardamom Mountains-Tonle Sap landscape.	https://www.thegef.org/projects-operations/projects/10483	**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	FAO's GEF-funded project, whose objective is that rice-based communities in the Tonle Sap region of Cambodia reduce their climate vulnerability and increase their resilience to climate change through an ecosystem-based, market-driven approach.	https://www.thegef.org/projects-operations/projects/10177	**Component 2** The proposed project can learn approaches and good practices on ecosystem-based and market-driven approaches.
Aspire Agricultural Services for Resilience (ASPIRE-AT)	EU funds and IFAD co-financing project that aims to make smallholder farmers and rural workers benefit from inclusive and sustainable agriculture sector growth, based on exports and domestic markets	https://www.eib.org/en/projects/all/20210682	**Component 2** The localization of successful interventions to improve agricultural productivity through enabling market infrastructure for producer organisations and strengthening the enabling environment for competitive agricultural value chains,

G. The learning and knowledge management component

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, Output 4.2 is dedicated to generating and disseminating adaptation knowledge in inclusive, accessible, and culturally appropriate formats. This output will focus on the systematic documentation of best practices and results, tailored for replication and upscaling in ecologically and socio-economically similar settings.

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

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 costs and benefits of adaptation**,** across environmental, financial, institutional, and social dimensions. This will enable evidence-based decision-making for future adaptation planning.

2. Local to National Knowledge Exchange Platforms

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, NCSD, 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

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

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

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.

H. Stakeholder Consultations

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.

Initial consultations commenced in early June 2025 and continued through 24 July 2025 (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 July 2025 provided strategic direction to ensure

alignment with key government initiatives, 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). The MoE also guided the process to avoid duplication with other development partner initiatives and to strengthen synergies with ongoing programmes.

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.

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.

In line with the LNOB principle, women, youth, Indigenous Suoy communities, and other vulnerable groups will meaningfully shape adaptation priorities. During the PFG 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.

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. Gender and social inclusion will be mainstreamed during the full proposal development, with measures to ensure that adaptation benefits are equitably distributed and that the voices of marginalised groups are reflected in decision-making.

As part of the preparation for the full proposal, UN-Habitat will further validate the findings through targeted fieldwork, participatory needs assessments, and disaggregated data analysis. The ongoing engagement with sub-national stakeholders will continue to inform project design, safeguard local ownership, and ensure alignment with the evolving priorities of national and provincial governments.

Table 11 Overview of Stakeholder Consultations

Location	Participants	Date	Topic(s) discussed	Participants
Provincial Department of Environment, Kampong Speu Province	- Ministry of Environment, - Provincial Department of Environment, - UN-Habitat	5 June 2025	Consultation on existing challenges and needs of communities in Kampong Speu Province and the preparation of the community meetings, site investigation, and data collection	9 (female – 3)
Ko Daun Tey Community, Trapeang Cho Commune, Phnom Sruoch District, Kampong Speu Province	- Community representatives - Provincial Department of Environment, - UN-Habitat	06 June 2025	Consultation on existing challenges and needs of communities in Kampong Speu Province	22 (female – 5)
Phnum Sruoch District Hall, Kampong Speu Province	- Representatives of Communities - Provincial Department of Environment, - UN-Habitat	10 June 2025	Consultation on existing challenges and needs of communities in Phnum Sruoch District	16 (female – 5)
Chambak Community, Chambak Commune, Phnom Sruoch Distirct, Kampong Speu Province	- Representatives of Communities - Provincial Department of Environment, - UN-Habitat	10 June 2025	Consultation on existing challenges and needs of communities in Chambak Community	16 (female – 7)
Aoral District Hall, Kampong Speu Province	- Representatives of Communities	11 June 2025	Consultation on existing challenges and needs of communities in Aoral District	20 (female – 3)

	- Provincial Department of Environment, - UN-Habitat			
Chambak Community, Chambak Commune, Phnom Sruoch Distirct, Kampong Speu Province	- Representatives of Communities - Ministry of Environment, - UN-Habitat	23 June 2025	Follow-up discussion	10 (female – 2)
Te Teuk Pus community	- Representatives of Communities - Ministry of Environment, - UN-Habitat	24 June 2025	Follow-up discussion	16 (female – 3)
Ministry of Environment	- Secretary-of-State and Director General - UN-Habitat	28 Jun 2025	Discussion and agreement on the project interventions and approach.	9 (female – 4)

I. Justification for funding requested

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, 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.

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.

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, and early warning systems—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.

While some government and development partner programmes touch on elements of disaster risk reduction or conservation, none provide the integrated, ecosystem-based, and community-driven adaptation model outlined here. The Adaptation Fund grant represents the full cost of enabling this shift—from ecosystem and livelihood degradation to inclusive, resilient development. Neither communities nor sub-national authorities have the means to shoulder this cost alone. The budget is structured to maximise adaptation benefits, with approximately 85 per cent 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, etc), and leveraging existing CPA structures. The project's cost per beneficiary ranges from USD 28.63 to USD 1,000, offering strong value for its significant impact on climate change adaptation in the target area. 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.

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

Project Components	Project Outcomes	Baseline (without AF)	Results achieved (with AF)
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 stabilization, 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

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

Institutional sustainability is essential for embedding climate adaptation into the routine planning, budgeting, and operational frameworks of local governments and protected area committees. In many Cambodian upland communes, adaptation planning remains fragmented and ad hoc, particularly within decentralised structures such as Commune Councils and Community Protected Area (CPA) Committees. This project strengthens institutional capacity at multiple levels—commune, district, 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:

- 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 hard investments, while providing technical guidance to update climate adaptation measures in the local plans,

2. Social Sustainability

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:

- 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 vocational training centers and demonstration plots ensures intergenerational knowledge transfer and the cultivation of future adaptation leaders.

3. Economic Sustainability

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:

- Promote climate-smart agriculture (CSA)—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-king community labours will be mobilised for low-tech construction under Component 3 and long-term maintenance tasks after the project closing. Unskilled and semi-skilled labours will be able to learn additional income by applying the construction knowledge and experiences through on-the-job training.

4. Financial Sustainability

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:

- Communities will contribute in-kind support and labour, reducing operational costs for infrastructure (e.g., water systems, eco-trails).
- 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 kits, efficient cookstoves), allowing low-cost replication and local servicing.

5. Environmental Sustainability

Environmental sustainability ensures that the ecosystems which communities rely on for water, soil fertility, biodiversity, and microclimate regulation are restored and preserved. 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 bio-engineered infrastructure, it ensures that ecological gains are resilient to future shocks. These interventions align 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:

- Rehabilitation of 57 hectares of degraded forest and catchment areas 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 mobilized through community contracting models and forest stewardship agreements, ensuring active participation in 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) and clean cookstoves to reduce biomass consumption and deforestation.
- Alignment with national frameworks such as the National Biodiversity Strategy and Action Plan (NBSAP) and Cambodia's Updated NDC (2020).

6. Infrastructure Sustainability
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:
- 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.

7. Knowledge and Replication
- 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

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.

Based on initial 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, and degraded land restoration 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.

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). 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.

During the full proposal development, the project will operationalise a comprehensive review of safeguards instruments, including: Environmental and Social Management Plan (ESMP), Environmental and Social Impact Assessments (ESIA), Gender Action Plan (GAP) and Grievance Redress Mechanism (GRM). Coordination with focal

agencies at national, provincial, and district levels 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.

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.

Table 13 Brief description of possible risks and preventive/mitigation measures

Checklist of Environmental and Social Principles	No Further Assessment Required for Compliance	Potential Impacts and Risks – Further Assessment and Management Required
1. Compliance with the Law		**Medium risk.** Small-scale infrastructure (ponds, canals, water gate, eco-trails, WASH) may require site-specific authorization from MoE, MRD, or Commune Councils. Mitigation: Conduct legal compliance screening; secure all approvals; ensure contractors comply with PA Law, Construction Standards, MRD Rural Infrastructure Guidelines, and MoE Protected Area regulations.
2. Access and Equity		**Medium risk.** Risk of exclusion for certain households, remote villages, or ethnic minorities during selection of livelihoods, water access, or training beneficiaries. Mitigation: Apply transparent eligibility criteria; conduct participatory targeting; use Suoy- and Khmer-language consultations; ensure mobility and disability inclusion.
3. Marginalized and Vulnerable Groups		**Medium risk.** Women, youth, older persons, persons with disabilities, and Indigenous Suoy may not fully access project opportunities. Mitigation: Conduct gender/ethnicity-disaggregated baseline; ensure tailored outreach; allocate quotas; prioritize vulnerable groups in livelihood, governance, and eco-tourism activities.
4. Human Rights		**Low risk.** No anticipated adverse impacts; all activities enhance rights to participation, water, safety, and livelihood opportunities. Mitigation: Uphold UDHR and UNDRIP principles; embed inclusion in planning; ensure GRM is accessible in Suoy and Khmer.
5. Gender Equality and Women's Empowerment		**Medium risk.** Women may face constraints in participation, benefit-sharing, leadership, or mobility in eco-tourism and livelihood activities. Mitigation: Develop a Gender Action Plan; ensure women-only consultations; ensure 40% minimum participation; design gender-sensitive WASH and lighting for safety..
6. Core Labour Rights		**Low risk.** Construction under community contracting may involve occupational hazards and risk of underpayment. Mitigation: Enforce Cambodian Labour Law, ILO standards; provide training; ensure wage transparency; integrate labour safety monitoring.
7. Indigenous Peoples		**Medium risk.** Risk of cultural exclusion, language barriers, or unintentional harm to sacred sites. Mitigation: Full FPIC process; Suoy-language communication; leadership roles in restoration and eco-tourism; avoid sacred areas by community mapping; ensure culturally appropriate benefit-sharing.
8. Involuntary Resettlement	✓	**Low risk.** No land acquisition or physical displacement. However, reforestation or firebreaks could inadvertently restrict access if poorly sited. Mitigation: Undertake land-use verification; prepare reforestation plan, ensure restoration occurs on public/communal lands only; conduct access mapping; avoid any restriction of customary use.
9. Protection of Natural Habitats		**Medium risk.** Limited disturbance possible near degraded forest edges and eco-trail areas. Mitigation: Conduct ecological screening; avoid intact habitats; apply biodiversity-safe design; restore vegetation after works.
10. Conservation of Biological Diversity		**Medium risk.** Limited disturbance possible near degraded forest edges and eco-trail areas. Mitigation: Conduct ecological screening; avoid intact habitats; apply biodiversity-safe design; restore vegetation after works.
11. Climate Change		**Low risk.** Minimal emissions expected; small embodied carbon from infrastructure materials. Mitigation: Use low-carbon, solar-powered, and renewable materials; ensure designs avoid maladaptation (e.g., waterlogging, over-extraction).
12. Pollution Prevention and Resource Efficiency		**Low risk.** Localized waste, sediment release, or poor disposal of materials during pond/canal rehabilitation. Mitigation: Contractors implement Waste Management Plans; enforce sediment traps and runoff control; use efficient, locally sourced materials.
13. Public Health		**Low risk. T**emporary risks during construction, including dust, noise, unsafe equipment, and sanitation issues. Mitigation: Enforce MRD/MoH WASH and safety standards; PPE; first-aid kits; signage; ensure clean water and sanitation at worksites.
14. Physical and Cultural Heritage		**Low risk.** Potential disturbance to unrecorded Suoy cultural sites, artefacts, or spiritual areas. Mitigation: Heritage screening; community mapping; activate Chance-Find Procedures immediately when items are discovered; supervise with Suoy elders.
15. Lands and Soil Conservation		**Low risk.** Soil erosion possible during earthworks for trails, ponds, and slopes. Mitigation: Apply nature-based stabilization (vetiver, bamboo, mixed planting); terracing; erosion fencing; time works for dry season; monitor post-construction stability.

PART III: IMPLEMENTATION ARRANGEMENTS

Table 14 A. Demonstrate how the project/programme aligns with the Results Framework of the Adaptation Fund

Project Objective(s)[104]	Project Objective Indicator(s)	Adaptation Fund Outcome	Adaptation Fund Outcome Indicator	Grant Amount (USD)
Objective 1: Strengthen inclusive local governance and institutional capacities by training at least 500 local officials and community leaders to plan, finance, and implement climate risk management strategies by 2030.	- # of institutions integrating climate risk into annual plans disaggregated by scale and sector - % of Commune/CPA staff with improved capacity (disaggregated by gender and ethnicity). - # of trained people, disaggregated by gender	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	910,000
Objective 2: Enhance climate-resilient livelihoods for at least 100 households through the promotion of ecotourism enterprises, vocational skill development, and adoption of climate-smart agriculture techniques across three target communes.	- % of households and communities having more secure access to livelihood assets - # of targeted people, disaggregated by gender - # of market and climate vulnerability assessments conducted	Outcome 1: Reduced exposure to climate-related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	110,000
		Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood assets 6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	750,000
Objective 3: Restore and protect at least 57 hectares of degraded ecosystems using nature-based solutions, including reforestation, agroforestry, and wetland restoration to improve biodiversity and ecosystem services by the end of the project.	- # of physical infrastructure improved - # of ecosystem services and natural resource assets maintained or improved - biodiversity index change in restored areas. - Increase in safe visitation rates in protected areas.	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.1. Responsiveness of development sector services to evolving needs from changing and variable climate 4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	5,400,000
		Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	900,000
Objective 4: Improve equitable access to climate-resilient infrastructure by constructing or rehabilitating 34 small-scale water and access facilities (e.g., eco-trails, water points, solar lighting) that support adaptation and reduce vulnerability of residents	- # of population accessible to climate-resilient ponds, canals, and water gates rehabilitated, disaggregated by gender. - % increase in households with reliable dry-season water access	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses 3.2. Percentage of targeted population applying appropriate adaptation responses	271,000
Total outcome level grant amount				**8,341,000**

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

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 Commune/CPA plans integrating climate risks. - % of Commune/CPA members with increased climate adaptation capacity (sex & ethnicity disaggregated) - % of women participating in capacity-building trainings	Output 2.1: Strengthened capacity of institutions to understand and better address climate risks	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender) 2.1.2 No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)	910,000
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 households adopting CSA/NTFP/eco-tourism livelihoods. % increase in average income from climate-resilient sources. - # of households adopted climate-resilient income strategies - % of women and youth promoted alternative livelihood options.	Output 1.1: Risk and vulnerability assessments conducted and updated	1.1. No. of projects/programmes that conduct and update risk and vulnerability assessments (by sector and scale) 1.2 No. of early warning systems (by scale) and no. of beneficiaries covered	110,000
		Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1. No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies 6.2.1. Type of income sources for households generated under climate change scenario	750,000
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 hectares restored and protected. - Length (km) of firebreaks and slope barriers installed - # of water systems made climate-resilient (ponds, canals, water gate) - # of climate-resilient eco-trails improved - # of gender-responsive and disability-inclusive WASH facilities installed - Increase in safe visitor numbers in protected areas.	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale) 4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)	5,400,000
		Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	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 knowledge products produced (Khmer/Suoy) - # of policy platforms integrating lessons - # of learning events conducted - % of female participants in the training events	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge 3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	271,000
Total output level grant amount				**8,341,000**

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: August 28th 2025	Tel. +254-20-762-3736 and email: raf.tuts@un.org
Project Contact Person: Odicea Angelo Barrios, Programme Management Officer, Human Settlements, UN-Habitat Regional Office for Asia and the Pacific	
Tel. (81-92) 724-7121 And Email: odicea.angelobarrios1@un.org	

KINGDOM OF CAMBODIA
Nation Religion King

Ministry of Environment
N° 6468 /0825 MoE

Phnom Penh, 06 August 2025

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

Subject: Endorsement for a Single Country Concept Note on Enhancing Community- Based Adaptation and Ecosystem Resilience in Protected Areas through Green Destination in Kampong Speu Province, Cambodia.

In my capacity as designated authority for the Adaptation Fund in Cambodia, I confirm that the above national project proposal is in accordance with the government's national priorities, especially with the specific commitments to the Cambodia Climate Change Strategic Plan (2024-2033), in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Cambodia.

Accordingly, I am pleased to endorse the above Single Country Concept Note with support from the Adaptation Fund. If approved, the project will be implemented by United Nations Human Settlements Programme (UN-Habitat) and executed by the General Directorate of Policy and Strategy (GDPS), Ministry of Environment in Cambodia and Sub-National Authority of Kampong Speu Province. Several other line ministries/departments, identified sub-national authorities and non-governmental organizations will also be involved in the implementation of this project.

The Project Concept Note builds on the long-standing collaboration between the Ministry of Environment and UN-Habitat. Hence, we are grateful for direct support in this regard.

I sincerely hope that this concept note will be considered favorably by the Adaptation Fund.

Sincerely yours,

H.E. Chuop Paris
Secretary of State
Ministry of Environment

Morodok Techo Building (Lot 503) Tonle Bassac, Chamkarmorn, Phnom Penh, CAMBODIA, Phone: 023 235 004 / 023 235 006

Revised PFG Submission Form[1] (additions in red)

Project Formulation Grant (PFG)

Submission Date: August 6th, 2025

Adaptation Fund Project ID:
Country/ies: Cambodia
Title of Project/Programme: Enhancing Community-Based Adaptation and Ecosystem Resilience in Protected Areas through Green Destination in Kampong Speu, Cambodia
Type of IE (NIE/RIE/MIE): Multilateral Implementing Entity
Implementing Entity: United Nations Human Settlements Programme (UN-Habitat)
Executing Entity/ies: UN-Habitat

A. Project Preparation Timeframe

Start date of PFG	April 2026
Completion date of PFG	October 2026

B. Proposed Project Preparation Activities ($)

Describe the PFG activities and justifications:

The US$150,000 Project Formulation Grant (PFG) will be used to formulate a single country full proposal through extensive local stakeholder consultations, feasibility/ESS and gender assessments, and technical studies. Key activities include community consultations with different stakeholders, translation of key documents, travel expenses, and professional services for proposal development. Additionally, the PFG will support a project consolidation workshop, and a write-shop to finalize the proposal in the proposed target location in Kampong Speu in cooperation with the Department of Climate Change, Ministry of Environment.

List of Proposed Project Preparation Activities	Output of the PFG Activities	US$ Amount	Budget note[2]
Stakeholders' workshops for validating the project design, implementation arrangement, and inputs for full proposal	Workshop report, validated project design, inputs to the design process	13,249	Project design workshops with different stakeholders in Kampong Speu with the support from Ministry of Environment.

[1] As presented in AFB/PPRC.33/40 Annex 1.
[2] The proposal should include a detailed budget with budget notes indicating the break- down of costs at the activity level. It should also include a budget on the Implementing Entity management fee use.

Field visits in the project areas for validating project design, institutional capacity assessment of local stakeholders, and obtaining inputs for full proposal development	Field mission report and validated project design	20,000	UN-Habitat and MoE teams will conduct field visits to the project locations and potential beneficiaries of the project in Kampong Speu.
Detailed analysis of the project components, outputs, and activities	Well described and detailed project components, outputs, and activities	20,000	Desk work with experts to define the project's components, outputs, and activities.
Development of project Log-frame, results framework and budget	Detailed project Log-frame, results framework and budget formulated	15,000	Expert's work for the definition of the project log-frame, results framework, and budget.
Gender assessment	Gender analysis report	15,000	Gender expert for ground activities and survey to produce the gender analysis for the project.
Environmental Impact Assessment (EIA) and gender assessment of the proposed project	EIA report and gender analysis report	25,000	ESS and gender experts for ground activities and survey for the final EIA and gender reports.
Full project proposal development and consultation	Full project proposal developed and workshop report	30,000	Consolidate and finalize full project proposal for submission.
Sub-Total		**138,249**	
Implementing Entity's Management Fee (8.5%)		11,751	Follow and supervision of NEI for the activities for the full proposal development.
Total Project Formulation Grant		**150,000**	

Please describe below each of the PFG activities and provide justifications for their needs and for the amount of funding required:

- **Consultative workshops** to review the concept note and prepare a full proposal formulation. The stakeholders' workshops for validating the project design and gathering input for full proposal development are critical to ensuring the project aligns with local needs and conditions. These workshops will involve a diverse group of stakeholders, including community members, local government officials, NGOs, experts, and other relevant stakeholders. The activities in these workshops include presenting the initial project design, discussing its goals, methods, and expected outcomes, feasible implementation arrangements, and soliciting feedback and suggestions. This participatory approach ensures that the project benefits from local knowledge, addresses actual vulnerabilities, and enhances community buy-in and ownership. The feedback collected is then used

to refine the project proposal, making it more robust, context-specific, and likely to succeed in achieving its adaptation goals.

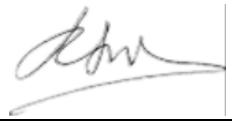
- **Field studies in the project areas** for validating the project design and obtaining inputs for full proposal development. The field visits in the project area are essential for validating the project design and gathering inputs for the concept note formulation. These visits will involve on-site evaluations and interactions with local communities, stakeholders, and environmental conditions. The activities will include assessing the physical and social landscape, identifying climate vulnerabilities, understanding local adaptation needs, and the institutional capacity of planned local stakeholders. Meetings and discussions with community members, local leaders, and experts will help gather firsthand information and feedback on the proposed project design. These interactions ensure that the project is context-specific, addresses actual and future climate risks, and incorporates local knowledge and practices. The insights gained from these field visits will be crucial for refining the project concept note, making it more effective and sustainable in enhancing climate resilience.
- **Conduct detailed analysis of project components, outputs and activities**. A detailed analysis of project components, outputs, and activities will involve several important steps. Project components are detailed, encompassing inputs such as resources (funding, expert knowledge), activities (events, research, capacity building), and intended outcomes. This analysis uses a logical framework (log-frame) to summarize core elements, ensuring clarity and coherence in the project's design. Outputs refer to the direct results of project activities, such as the development of climate-resilient infrastructure. Activities will include the specific actions taken to achieve these outputs.
- **Development of the project log frame, results framework, and budget.** The project log frame and results framework will involve defining the project's goal and objectives, developing a logical framework matrix capturing the hierarchy of results (impact, outcomes, outputs, activities, inputs), establishing indicators and means of verification, identifying assumptions and risks, visually representing the logical linkages between project components, engaging stakeholders for validation, and implementing a monitoring and evaluation plan to track progress and make necessary adjustments, ensuring the project is well designed, effectively managed, and capable of delivering sustainable benefits to vulnerable communities. Developing a detailed project budget will involve several key steps to ensure comprehensive financial planning and resource allocation. First, this activity will detail and categorize all necessary components of the project, such as baseline data collection, capacity building, community engagement, infrastructure development, monitoring, and evaluation. Each category will be broken down into specific activities, with estimated costs for personnel, materials, equipment, travel, and administrative expenses.
- **Gender assessment:** The gender assessment will involve evaluating the different impacts of climate change on men and women and ensuring gender-responsive strategies. This activity will start with collecting gender-disaggregated data to understand the specific vulnerabilities and needs of women and men in the project areas. The assessment will identify gender-specific barriers to adaptation and propose measures to overcome them, such as enhancing youth and women's access to resources, information, and decision-making processes. It will also examine how the proposed adaptation strategies might affect gender dynamics, aiming to avoid reinforcing existing inequalities. Furthermore, the assessment will develop indicators to monitor and evaluate gender outcomes throughout the project. Engaging both women and men in the planning and implementation stages ensures that the adaptation efforts are inclusive and equitable.
- **Environmental Impact Assessment (EIA) of the proposed project**. The Environmental Impact Assessment (EIA) will involve evaluating the potential environmental impacts of the project to ensure it does not adversely affect the environment or hinder its resilience. This process will include screening to determine the necessity of an EIA, scoping to identify key environmental concerns, assessing potential impacts on natural resources and ecosystems, proposing mitigation strategies to

address negative effects, consulting stakeholders to gather feedback, and documenting the findings in a comprehensive report. Moreover, it will involve monitoring the project's environmental effects to ensure compliance with mitigation measures and to adapt strategies as needed for unforeseen impacts.

- **Full project proposal development.** Developing the comprehensive full project proposal will involve several key components. Initially, the proposal will define the specific climate change impacts and vulnerabilities the project aims to address, using data and assessments to justify the need for adaptation. The objectives will be clearly articulated, with detailed activities designed to achieve these goals. Engaging stakeholders, including local communities, ensures that the project is designed taking into account the actual needs and constraints of the target population. The proposal will outline a detailed budget, specifying how funds will be allocated to various activities, and include a timeline for implementation. Furthermore, a robust monitoring and evaluation plan will be included because it is essential to track progress, assess outcomes, and make necessary adjustments. Risk management strategies will also be detailed to address potential challenges that might arise during the project lifecycle. Finally, the proposal will align with the requirements of the Adaptation Fund to enhance its chances of approval.

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Raf Tuts		29/08/2025	Odicea Angelo Barrios	(81-92) 724-7121	odicea.angelobarrios1@un.org

Annex 1: Meetings with stakeholders

Minutes of Meeting at Provincial Department of Environment, Kampong Speu Province		
Date: 05 June 2025	**Venue:**	**Number of attendees: 9 (3 females)**
Participant: Representatives from the 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 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 forest protected area. There are 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.

Photos of the Meeting

Meeting at Kampong Speu Department of Environment

Minutes of Meeting at Ko Daun Tey Community, Trapeang Cho Commune, Phnom Sruoch District, Kampong Speu Province		
Date: 06 June 2025	**Venue:**	**Number of attendees: 22 (5 females)**
Participant: 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 emphasized that the Ko Daun Tey community has in total of 509 families (equivalent to 1326 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 centers, 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 laborers, 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 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)**
Participant: 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 on climate change challenges, local needs, and existing initiatives.

First, Mr. Kiev Leang Kea, Governor of Phnom 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 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 the private water vendors to seek for their supports 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 laborers supporting the mango plantations.
- Water supply is another issue. Only around 10% are connected to 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 Phnom Sruoch District

- Water is the main source to improve livelihood in the district as majority of population rely 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 include the family scale manufacturing and structure to be a strong value chain of mango production to city?

Opening session

Sharing by the district representative

Minutes of Meeting at Chambak Community, Chambak Commune, Phnom Sruoch Distirct, Kampong Speu Province		
Date: 10 June 2025	**Venue: Chambak Community**	**Number of attendees: 16 (7 females)**
Participant: 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 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)**
Participant: 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 Oral 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, 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 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 Kms (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.

Sharing by district and communes

Site visit with relevant stakeholders

Minutes of Meeting at Chambak Community, Chambak Commune, Phnom Sruoch Distirct, Kampong Speu Province		
Date: 23 July 2025	**Venue: Chambak Community**	**Number of attendees: 10 (2 females)**
Participant: Representatives from community, and Ministry of Environment		
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 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), labor, 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, 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 mobilization 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 labor 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, Trapeang Cho Commune, Oral District, Kampong Speu Province		
Date: 24 July 2025	**Venue:**	**Number of attendees: 19 (3 females)**
Participant: 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 emphasized 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)**
Participant: 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 about 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 all of the components for the discussion and decide what action have to put the priorities in the project implementation tailors with Adaptation Fund to enhance the adaptive capacity, ecosystem resilience, and climate-resilient for the livelihoods of vulnerable communities in and around protected areas of Kampong Speu Province. 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 center to build local capacity. The center 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 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 prioritizing 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 upcoming writing the concept note, project proposal, budget allocation, and submission.

Photos of the Meeting