GEF-8 REQUEST FOR CEO ENDORSEMENT/APPROVAL

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General Project Information

Project Title Building resilient livelihoods through nature-based solutions in the Tonle Sap Basin and Siem Reap/Phnom Kulen landscape	
Region Asia	GEF Project ID 11332
Country(ies) Cambodia	Type of Project FSP
GEF Agency(ies): UNDP	GEF Agency Project ID 9682
Project Executing Entity(s) Ministry of Environment	Project Executing Type Government
GEF Focal Area (s) Climate Change	Submission Date 8/28/2025
Type of Trust Fund LDCF	Project Duration (Months) 60
GEF Project Grant: (a) 6,684,703.00	GEF Project Non-Grant: (b) 0.00
Agency Fee(s) Grant: (c) 635,047.00	Agency Fee(s) Non-Grant (d) 0.00
Total GEF Financing: (a+b+c+d) 7,319,750.00	Total Co-financing 15,000,000.00
PPG Amount: (e) 200,000.00	PPG Agency Fee(s): (f) 19,000.00
Total GEF Resources: (a+b+c+d+e+f) 7,538,750.00	
Project Tags CBIT: No NGI: No SGP: No Innovation: No Competitive Window: No	
Project Sector (CCM Only) Climate Change Adaptation Sector	

Taxonomy

Focal Areas, Climate Change, Climate Change Adaptation, Ecosystem-based Adaptation, Least Developed Countries, Livelihoods, Private sector, Climate finance, Climate resilience, Innovation, Influencing models, Strengthen institutional capacity and decision-making, Convene multi-stakeholder alliances, Transform policy and regulatory environments, Deploy innovative financial instruments, Stakeholders, Indigenous Peoples, Beneficiaries, Private Sector, Type of Engagement, Civil Society, Local Communities, Communications, Awareness Raising, Behavior change, Non-Governmental Organization, Community Based Organization, Academia, Partnership, Participation, Consultation, Information Dissemination, SMEs, Individuals/Entrepreneurs, Capacity, Knowledge and Research, Capacity Development, Learning, Theory of change, Indicators to measure change, Adaptive management, Knowledge Generation, Targeted Research, Gender Equality, Gender Mainstreaming, Women groups, Sex-disaggregated indicators, Gender-sensitive indicators, Gender results areas, Access to benefits and services, Participation and leadership, Knowledge Generation and Exchange, Forest and Landscape Restoration, Land Degradation, Sustainable Land Management, Restoration and Rehabilitation of Degraded Lands, Ecosystem Approach, Sustainable Livelihoods, Sustainable Agriculture, Sustainable Forest, Improved Soil and Water Management Techniques, Drought Mitigation, Demonstrate innovative approache, Public Campaigns, Knowledge Exchange, Community-Based Natural Resource Management, Income Generating Activities, Complementarity, Community-based adaptation, Enabling Activities

Rio Markers

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
Significant Objective 1	Principal Objective 2	Significant Objective 1	Significant Objective 1

Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. (max. 250 words, approximately 1/2 page)

The Tonle Sap Basin (TSB), an expansive area of economic importance and the cultural heart of Cambodia, is being severely impacted by climate change, with increasing temperatures and shifting rainfall patterns (dryer dry seasons, wetter wet seasons) having a major impact on water resources and agricultural productivity, as well as increasing the frequency and intensity of extreme events such as drought and flood. Future projections show that these patterns are expected to continue through the rest of the century, further enhancing the impacts that are already being felt by vulnerable communities. The impacts of climate change are exacerbated by the degradation of forest ecosystems, which is happening at a concerning rate – threatening the regulation of hydrological cycles in the region. As the agroecological landscape is degraded, the critical ecosystem services they provide are being lost, with severe consequences for the sustainability of water resources and the livelihoods they support, as well as the tourism industry, which is a major contributor to the local and national economy. The resultant impacts on natural resource-based livelihoods are driving local communities to adopt maladaptive practices such as agricultural expansion into forest areas, fuelling a negative cycle of degradation in the catchments.

To address climate vulnerability and the drivers of environmental degradation in the TSB and safeguard the natural and cultural heritage of the region, the Government of Cambodia will introduce a systematic and integrated approach to landscape management aimed at building community resilience to fluvial floods and droughts in the TSB, contributing to Cambodia's green growth objectives. This will be implemented through two complementary projects – one positioned under the GEF-8 Integrated Programme for Ecosystem Restoration focussing on the conservation and restoration of forest ecosystems across the TSB, and this LDCF project focussing on building the resilience of communities within the TSB against the increasing impact of fluvial floods and drought. Each of these projects will be self-contained and have distinct Outcomes related to the focal areas noted above, with closely aligning Outcomes that maximise overall impact across the landscape in the TSB.

The proposed landscape and watershed management solutions will take a systems-based approach, accounting for three key pillars identified for sustainable investment in Cambodia, namely governance, finance, and people. When underpinned by a foundation of research, knowledge and learning, an approach built on these pillars will ensure that the appropriate enabling environment is created for sustainable and scalable impact, with crosscutting benefits. Improved management of vulnerable landscapes and watersheds across the TSB will include the conservation and active rehabilitation of degraded ecosystems — complementing, but not duplicating efforts under the ER-IP project — to restore the provision of critical ecosystem services, supported by innovative blended finance mechanisms that will align conservation efforts with economic incentives, ultimately driving scalable and impactful climate resilience solutions and facilitate the long-term maintenance and scaling of the approach. This will also involve working with local communities to address the drivers of degradation while maintaining livelihoods and culture.

Against this background, the project will build climate resilience while simultaneously disrupting the key drivers of land degradation to contribute to national efforts to restore watershed ecosystems and their services in the Tonle Sap Basin, with specific focus on Siem Reap province and the Phnom Kulen landscape. Moreover, the project will support sustainable livelihoods, thereby contributing to the country's green growth.

Project Description Overview

Project Objective

To build the climate resilience of local communities in the Tonle Sap Basin through an integrated watershed management approach, while conserving the natural and cultural heritage that sustains local livelihoods and societies.

Project Components

Strengthened national and provincial land use planning and implementation capacities

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing ($)	**Co-financing ($)**
693,071.00	1,551,518.00

Outcome:

Outcome 1
Strengthened capacity for coordination, planning and implementation of integrated watershed management at the national and provincial

Output:

1.1. Adaptive decision-making tools for assessing future climate risk and resilience needs for watershed management
1.2. Policy briefs and training on the integration of future climate risk into national and sub-national watershed management plans
1.3. Updated Tonle Sap Basin Watershed Restoration, Rehabilitation, and Conservation Plan integrating future climate risk and resilience needs
1.4. Participatory action plan and enforcement strategy for climate change adaptation in the riparian zones of the Steung Siem Reap (SSR) Watershed

Investment in integrated watershed management, restoration and conservation, at scale

Component Type	Trust Fund
Investment	LDCF
GEF Project Financing ($)	Co-financing ($)
3,100,744.00	6,961,534.00

Outcome:

Outcome 2: Strengthened resilience of communities in the Siem Reap/Phnom Kulen landscape through scalable nature-based solutions and sustainable finance

Output:

2.1. Nature-based solutions implemented in the Siem Reap/Phnom Kulen landscape to reduce flood impacts and improve water provisioning services
2.2. Sustainable landscape rehabilitation implemented through community-based agroforestry initiatives focusing on diverse, high-value tree species that benefit agricultural livelihoods and enhance carbon stocks
2.3. Sustainable financing mechanism established and operational within the SSR Watershed to promote public-private-community partnership investments and support long-term financing of community-led NbS initiatives

Resilient natural resource-based livelihoods

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing ($)	Co-financing ($)
1,607,994.00	3,608,225.00

Outcome:

Outcome 3: Increased adoption of climate-resilient natural resource-based livelihoods through training, and market development

Output:

3.1. Smallholder farmers trained in climate-resilient agricultural practices that improve productivity under water-stressed and flood-prone conditions

3.2. Enhanced commodity value chains and improved market linkages for key agricultural products and NTFPs

3.3. Community-based enterprises established to facilitate long-term, sustainable support to the implementation of NbS

Knowledge, research and innovation

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing ($)	Co-financing ($)
767,040.00	1,721,183.00

Outcome:

Outcome 4: Innovation in the management of watersheds across Cambodia enabled through high-quality knowledge, research and learning

Output:

4.1. Knowledge of climate change impacts on ecosystem service provision in the SSR watershed enhanced through assessments, research and education to improve understanding of natural and cultural assets of the area, and their role in supporting local livelihoods

4.2. Innovative digital technologies developed for climate smart agriculture and agroecology value chains to enhance community and ecosystem resilience in the TSB

4.3. Knowledge management and outreach strategies developed to facilitate the upscaling of climate adaptation interventions nationally, regionally, and globally

4.4. Scaling strategy developed to replicate IWM practices across other provinces of the TSB

M&E

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing ($)	Co-financing ($)
197,541.00	443,268.00

Outcome:

Outcome 5
Lessons learnt curated through project M&E and disseminated both nationally and internationally to promote the scaling of interventions to other watersheds across Cambodia and the surrounding region

Output:

5.1. Monitoring, Evaluation and Learning system established to collect and curate lessons learnt from project activities

5.2. Project implementation coordinated and measured through proactive steering committee functions, inclusive monitoring and evaluation, and an operational environmental and social management mechanism

Component Balances

Project Components	GEF Project Financing ($)	Co-financing ($)
Strengthened national and provincial land use planning and implementation capacities	693,071.00	1,551,518.00

Investment in integrated watershed management, restoration and conservation, at scale	3,100,744.00	6,961,534.00
Resilient natural resource-based livelihoods	1,607,994.00	3,608,225.00
Knowledge, research and innovation	767,040.00	1,721,183.00
M&E	197,541.00	443,268.00
Subtotal	**6,366,390.00**	**14,285,728.00**
Project Management Cost	318,313.00	714,272.00
Total Project Cost ($)	**6,684,703.00**	**15,000,000.00**

Please provide Justification

PROJECT OUTLINE

A. PROJECT RATIONALE

Describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

The Tonle Sap Basin (TSB), spanning approximately 85,790 km^2 in northwestern Cambodia, is a region of significant ecological and economic importance and the cultural heart of the country. The region is increasingly vulnerable to the impacts of climate change. Rising temperatures, shifting rainfall patterns, and the growing frequency and intensity of extreme weather events — such as droughts and floods — are severely affecting water resources, biodiversity, and agricultural productivity (see Climate Context below for more details).

These climate challenges are further exacerbated by the rapid degradation of forest ecosystems and upland watershed areas, and their rich biodiversity, posing a serious threat to Cambodia's cultural and natural heritage. As forests decline, the essential ecosystem services they provide are being compromised, leading to severe consequences for water resource sustainability, local livelihoods, and the tourism sector — a major contributor to both local and national economies.

The resulting strain on natural resource-based livelihoods is driving communities toward maladaptive practices, including agricultural expansion into forested areas. This, in turn, perpetuates a negative cycle of environmental degradation within the basin's catchments, undermining the resilience of ecosystems and communities that depend on them.

Approximately 4 million people, representing 24% of the population, reside within the TSB, which spans the provinces of Siem Reap, Battambang, Pursat, Kampong Chhnang, Banteay Meanchey, and Kampong Thom, Preah Vihera (Figure 1). Two-thirds of this population live in rural areas and rely heavily on the region's natural resources and cultural heritage to sustain their livelihoods. Activities such as cultural and eco-tourism play a significant role in supporting both local and national economies. Additionally, 50% of the TSB

population — around 2 million people — rely directly on the Tonle Sap Lake for their daily needs. The lake provides critical resources, including water for domestic use, agriculture, aquaculture, and transportation, while also regulating the local climate.

Figure 1: Map showing the 7 provinces that form part of the TSB, as well as the Steung Siem Reap watershed (including Phnom Kulen National Park), which will be the focus of on-the- ground investments

The Tonle Sap Basin, which consists of 11 major tributaries, features the Siem Reap/Phnom Kulen landscape — encompassing the Steung Siem Reap (SSR) watershed — as a focal point for Cambodia's national conservation and restoration efforts. This area has been prioritised by the Government of Cambodia due to its profound cultural and ecological significance. The SSR Watershed spans 3,619 km^2, stretching from the Phnom Kulen Mountain range in the north to the Tonle Sap Lake in the south. It is home to Angkor Wat, a UNESCO World Heritage Site of great cultural importance and the country's premier tourism destination. The SSR Watershed consists of three main rivers: the Puok River, the Siem Reap River, and the Rolous River. All three rivers originate from Phnom Kulen National Park (PKNP) and flow into the flooded forest area of Tonle Sap Basin, with their waters reaching Puok District, Siem Reap Municipality, and Prasat Bakong District, respectively. The cultural heritage of the SSR watershed extends into the upper catchment areas of Phnom Kulen National Park (PKNP), a sacred site for the Khmer people and the historical cradle of the Kingdom of Cambodia.

With the headwaters of these three rivers originating in the PKNP, the park's forest ecosystems and upland areas surrounding tributaries play a central role in regulating hydrological cycles, essential for maintaining river flows and recharging the aquifer that supplies water for irrigation and domestic use by local communities. In addition to supporting local livelihoods, these water resources are critical to the region's tourism industry, including hotels and restaurants, which are major water consumers. The hydrodynamic forces of groundwater also helps maintain the structural integrity of the Angkor Temple Complex. An assessment of land use and climate change effects on hydrology in the upper Siem Reap River and Angkor Temple Complex projected that there under the current land use and climate regime there is sufficient water to sustain the Angkor Temple Complex. However, all future climate projections (RCP 2.6, RCP 4.5 and RCP 8.5) indicate that under current land use trends, there would be insufficient water supply by mid- to end-century[1][1].

Socio-ecological watershed zoning

The socio-ecological zoning of the SSR Watershed provides insight into its hydrological profile in relation to ecological and social dynamics (Figure 2). The zones have been defined by the interactions between land and natural resources, local land use, and management practices. As shown in Figure 2, the watershed's rivers originate in PKNP (Zone 6), flow through the Angkor Wat Protected Landscape (Figure 2), and eventually drain into Tonle Sap Lake.

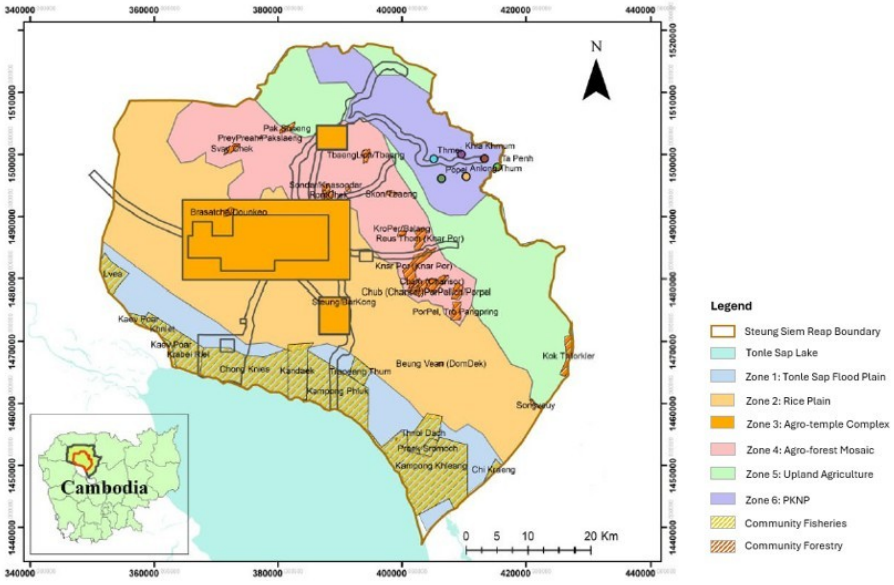

Figure 2. Zoning of the Steung Siem Reap Watershed (Source: COMDEKS 2025)

Zone 1 represents the Tonle Sap Plain, comprising grasslands, shrublands, forests, ponds, and lakes. Land use is primarily focused on fishing, managed through community fisheries and deep-water rice ponds. Zone 2 is an agricultural plain, dominated by rain-fed rice farming. Farmers with access to water storage infrastructure can engage in more intensive, irrigated commercial agriculture. Zone 3 surrounds the archaeological park of Angkor Wat, where family farming is predominant. Overall management of this zone lies with the APSARA Authority.

Zone 4 is an agriculture-forest mosaic that was once predominantly forested. However, extensive deforestation due to agricultural expansion, settlement construction, and illegal logging has resulted in highly fragmented forests. The primary agricultural activity is *chamkar* (non-rice cultivation), practiced by 94% of the Zone 4 population, though a small proportion still cultivates rice[2]. *Chamkar* cultivation includes orchards (such as cashew and mango), vegetable crops (such as cassava), and plantations (such as rubber or pepper). Vegetables are primarily grown for the Siem Reap market. While most crop cultivation depends on rainfall, some farmers with access to streams and springs use irrigation.

To supplement their agricultural incomes, Zone 4 communities also rely on other natural resources. In recent years, small-scale handicraft businesses and shops have emerged, with some households forming "mini-marketplaces" to serve food and beverages to tourists and sell locally made handicrafts using non-timber forest products (NTFPs). However, these activities remain limited in scale and highly dependent on tourist arrivals[3]. Landlessness is a significant challenge in Zone 4, affecting 28% of the farming population. As a result, many residents seek off-farm employment, primarily in the tourism sector[4][2].

Agricultural livelihoods in Zone 4 are challenged by water scarcity due to limited rainfall (see below), inadequate irrigation and storage infrastructure, low soil water retention, and poor soil fertility of the

arenosols[5][3]. Although water scarcity is the primary climate-related issue, flash flooding also poses a threat, causing damage to crops and infrastructure.

To protect the remaining degraded forests, community forest groups have been established under the management and technical support of the Provincial Forestry Administration. These community forests (CFs) serve multiple functions beyond timber production and silviculture, offering potential for integration with other landscape management strategies. Community members see strong opportunities to enhance community forestry initiatives by incorporating agroforestry and ecotourism as alternative income-generating activities[6][4].

Zone 5 is an upland agricultural area that was completely deforested over the past decade and converted into upland cropping systems, including rice, casava, cashew, and mango. Most households (91%) are engaged in cropping activities, with forestry resources having been largely cleared. The challenges faced by farming communities in this zone are like those of Zone 4 communities. In the project target area, there is one CF in this zone: Pak Snaeng Community Forest (207 ha) in Peak Snaeng Commune within Angkor Thum District.

Zone 6 (PKNP) is a protected area co-managed by local communities and the Ministry of Environment through Community Protected Areas (CPAs). Residents who settled before the park's establishment are allowed to practice subsistence farming, growing crops such as rice, cashew, casava and mango, while also participating in ecotourism[7][5].

The Tonle Sap Basin's ecological and cultural significance underscores the urgent need for sustainable management of its critical natural resources. Climate change and environmental degradation are placing immense pressure on water availability, biodiversity, and local livelihoods, threatening key economic sectors such as agriculture, tourism, and fisheries across the six socio-ecological zones. Ensuring the resilience of these sectors requires integrated, long-term strategies that prioritise ecosystem restoration, sustainable land and water management, and community-based conservation efforts.

Climate Change Context

Cambodia has a tropical monsoon climate with two distinct seasons: a wet season from May to October, driven by the southwest monsoon, and a dry season from November to April, influenced by the northeast monsoon. Temperatures are generally warm year-round, ranging from 21°C to 35°C. The country experiences high humidity and significant rainfall, particularly from June to September. Extreme weather events such as floods and droughts are common, posing challenges for agriculture and water resources.

Cambodia is also highly vulnerable to climate change, with significant impacts on natural resources and communities across the country. Water resources, particularly those in the Tonle Sap Basin, are increasingly threatened by shifting rainfall patterns, changes in seasonal cycles, and more intense rainfall. These climatic shifts are impacting both the flow of surface water, and the recharge of groundwater aquifers.

Climate Vulnerability

Cambodia's climate vulnerability has been assessed under the Cambodia National Vulnerability Index, which was conducted following IPCC methodology and defines vulnerability as a function of exposure, sensitivity, and adaptive capacity. This assessment developed a national Composite Vulnerability Index (CVI),

integrating environmental exposure (including the frequency of occurrence of climate extreme events), socioeconomic sensitivity, and adaptive capacity. The CVI indicates that 34.8% of Cambodia's 1,629 communes fall into either the 'High' or 'Quite High' vulnerability categories, with the most at-risk areas concentrated in the northern regions, particularly within the Tonle Sap Basin (TSB)[8]. This includes the northern highland areas of Steung Siem Reap Watershed (Figure 3), where high exposure to flooding results in some of the highest flood vulnerability scores in the country.

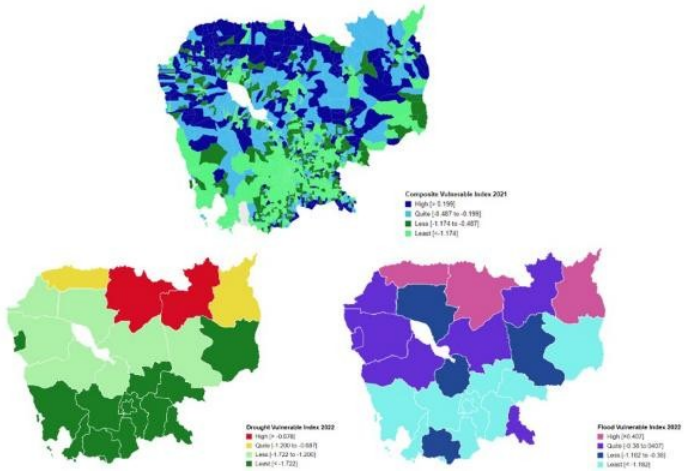

Figure 3. Spatial distributions of climate change vulnerability in the TSB at the commune level. Top center – composite vulnerability; bottom left – drought vulnerability; bottom right – flood vulnerability (Source: National Vulnerability Index)

A more detailed assessment using the same methodology but focusing directly on the project's target area — highland communes within the Steung Siem Reap (SSR) Watershed in Siem Reap Province — further highlights the extent of the vulnerability (See Annex 23 for more detail). As illustrated in Figure 4, three target communes (Peak Snaeng, Prasat, and Srae Nouy) are classified as 'High' on the CVI scale, while five others (Chob Ta Trav, Svay Chek, Rumchek, Run Ta Aek, and Tbaeng) fall into the 'Quite High' category[9].

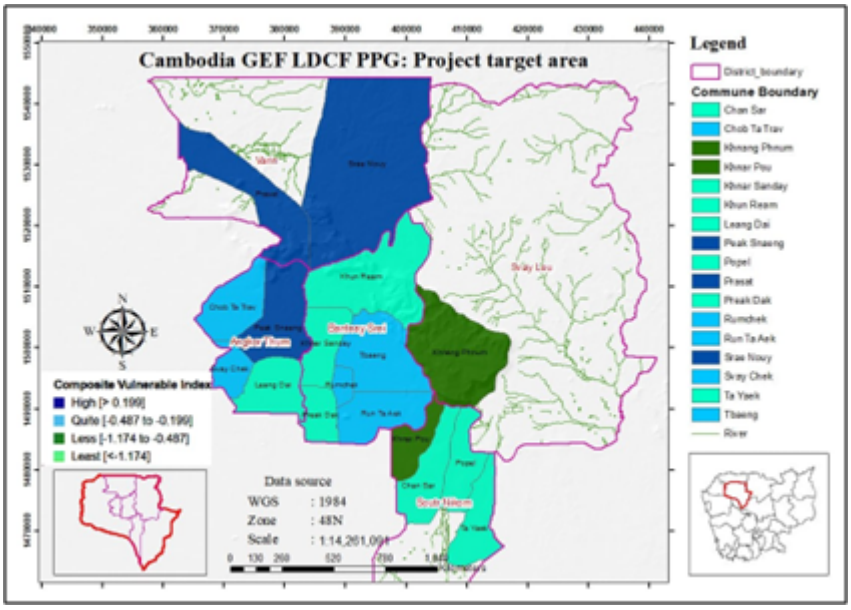

Figure 4. Spatial distribution of climate change vulnerability for the communes in the project target area[10]

In addition to high exposure to climate hazards, Cambodia has limited capacity to cope with climate change. The country ranks 149th out of 181 nations in the 2021 ND-GAIN Index, which assess climate vulnerability

and readiness. This ranking underscores the urgent need to enhance resilience and adaptive capacity to safeguard the country's economic growth and development.

Among the most vulnerable groups are smallholder farmers and rural communities who rely on natural resources for their livelihoods, including forests, agriculture, and resources (fish, fuel wood and timber) from the Tonle Sap and its floodplain. Low adaptive capacity is further exacerbated by high poverty rates — according to the Ministry of Planning ~1.3 million people (9% of the total population) in the TSB live below the poverty line. Many of these households are also land-poor, owning less than a hectare of agricultural land. Women are particularly vulnerable from this perspective as they own only 10% of the country's agricultural land. The increasing frequency and intensity of climate hazards threaten the livelihoods of these communities, with far-reaching implications for Cambodia's economic stability, food security, and social cohesion. The disruptions caused by the Covid-19 pandemic — particularly to agricultural supply chains and market demand — have further highlighted the socioeconomic vulnerabilities of Cambodian farmers, especially economically disadvantaged groups, women, and marginalised communities[11]. Further discussion on the drivers of vulnerability is provided below.

Climate Trends

The country has already experienced a notable increase in average annual temperature, rising from 26.7°C in 1979 to 27.7°C in 2019 (Figure 5. Average annual temperature in Cambodia from 1979–2019). Concurrently, an increasing trend in average annual precipitation has been observed over the past three decades (1981–2021; Figure 5), with the highest rainfall increases recorded in the southwest, followed by the northern regions[12]. Spatial variations in average annual rainfall are also evident, with the coastal zone receiving the highest rainfall (3,000–4,000 mm), followed by the upland areas (2,000–2,200 mm), while the central lowlands receive the least (1,000–1,400 mm). These climatic changes have exacerbated climate hazards, particularly floods and droughts, posing severe risks to local communities.

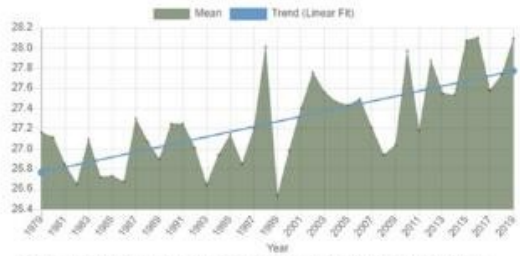

Figure 5. Average annual temperature in Cambodia from 1979–2019 (Source: ECMWF ERA5 data – Earthmap.org)

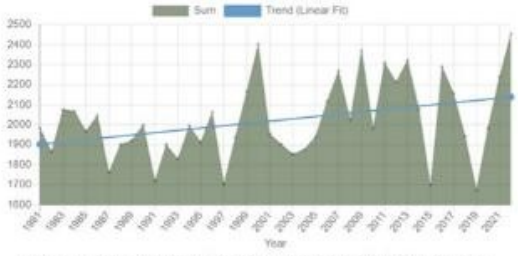

Figure 5. Average annual precipitation in Cambodia from 1981–2021 (Source: CHIRPS data – Earthmap.org)

According to the International Emergency Events Database (EM-DAT), Cambodia recorded 33 major climate-related disasters between 2000 and 2024, including 20 floods, 5 storms, and 4 droughts. These events have affected over 8 million people and caused approximately US$1.8 billion in damages to agriculture and infrastructure between 2005 and 2019[13]. For instance, flash floods and riverine flooding in 2021 impacted approximately 28,450 households (~122,000 people[14]) and damaged 24,862 ha of agriculture land in Banteay Meanchey, Battambang, Siem Reap, Kampong Speu and Ratanak Kiri provinces. Of the 33 disasters, 21 occurred in provinces that encompass the TSB, including 75% of droughts, 65% of floods, and 80% of storms.

Future Climate Projections

Increasing temperature trends are expected to continue, with projections under the moderate Shared Socioeconomic Pathway (SSP) 2-4.5 scenario predicting a +1.5°C change in mean annual temperature mid-century (2040-2059) and +2.2°C change by end-century (2080-2100). Under the worst-case scenario (SSP5-8.5), the rate of increase in average annual temperature across the whole of Cambodia will accelerate through

the mid- to late-century, with a +4.1°C change by the 2080–2100 period (Figure 8). Projections also show that Cambodia will be exposed to much higher heat risks nationally by mid-century, especially considering regional and seasonal variations. According to the SSP3-7.0 scenario, the average annual number of hot days (T-max > 35°C) increase nationally from the 1995–2014 reference period of 49 hot days to 97 days over 2020–2039 and to 150 days by mid-century[15].

The positive rainfall trend is also expected to continue, with RCP4.5 projections showing a +11% change in average annual rainfall in the Siem Reap Province for the 2041–2070 period. This increases to +17% under RCP8.5. Although these projections show an overall increase in total rainfall, the temporal distribution of these changes is not uniform, with more rainfall expected during the wet season, contrasted by a decrease in the dry season. For example, Cambodia's future precipitation intensities, measured by average largest 5-day cumulative anomalies, generally increase the most during the end of the wet monsoon season in the northern provinces and generally decrease the most during the dry season months in the southern provinces[16]. As a result, by mid-century, Cambodia is likely to experience more frequent extreme precipitation events. For the projected period of 2035–2064, the largest 5-day precipitation amounts associated with 100-year historical return periods will be nearly two times more likely to occur in the western highland provinces.

These projected changes in future precipitation intensities show a general pattern of drier dry seasons and wetter wet seasons, with notable regional variation. The largest increases typically occur at the end of the wet monsoon in the northern provinces, while the greatest decreases are seen during the dry season in the south, with the most extreme trends in the west. For example, under SSP3-7.0 by mid-century, Kep sees a decrease of −18.16 mm in March (dry season) and an increase of 19.83 mm in June (early wet season). In Koh Kong (southwest coast and highlands), March intensities decrease by about −10 mm, increase by 17.26 mm in July, and rise by 31.65 mm in October—the highest nationally. In the northeast, Ratanak Kiri records a 21.35 mm increase in October (end of the wet season).

Consequently, as a result of the expected shift in the timing and intensity of rainfall patterns and seasons, the hydrology of Cambodia's major rivers and their tributaries will change — also affecting ground water aquifers. Intense rainfall during the wet season will increase mean annual runoff in Siem Reap by 25% under RCP4.5 (2041–2070), resulting in increased flood risk, while the decreased dry season rainfall will result in prolonged dry spells.[17] More frequently occurring extreme precipitation events underscore future health risks related to flood impacts, agricultural yields, disease ranges, and critical infrastructure, including for water, sanitation, and hygiene[18].

At present Cambodia faces an annual median probability of severe meteorological drought of around 4%, as defined by a standardized precipitation evaporation index (SPEI) of less than −2. While uncertainty remains high, all emissions pathways indicate an increase in median annual drought probability from 4% to 5–9%.[19]

Climate projections indicate that such extreme events will become more frequent and severe, with increased rainfall intensity, higher runoff, and prolonged dry spells[20]. Additionally, increases in wet-season rainfall are expected to expand open water areas in the Tonle Sap Basin by 2–21%, while reducing the area of suitable rain-fed habitats by 2–5% and seasonally flooded habitats by 5–11%[21].

Impacts on water resources and agriculture

Studies on the hydrology of the TSB have also shown that river flow in 11 sub-basins are expected to decrease by 9 to 29%, 10 to 35% and 7 to 41% for the 2030s, 2060s and 2090s projections, respectively. These decreases are likely to be attributed to a change in the seasonal distribution of the rainfall, with drier and longer dry seasons, and lower precipitation occurring in the Lower Mekong Basin in the future climate projections.[22] The greatest flow reduction is during the dry season, with the Siem Reap River showing the most significant flow reductions of all rivers assessed, ranging from 33% to 78%. Table 4 highlights some of the key impacts of future climate change on the vulnerable agriculture sector in Cambodia, noting

considerable impacts on crop productivity as well as damages from extreme events. The vulnerability of key crops is further demonstrated by a study conducted for the Kampong Thom Province within the TSB[23], which highlights that lowland and irrigated rice, soybean and cassava, are all highly vulnerable to increasing temperatures (particularly minimum nighttime temperatures which impact optimal growth conditions for rice), and flooding, while soybean is also highly vulnerable to decreases in water availability during the growing season (Table 5).

Table 4: Projected climate change impacts on crop production as identified in MAFF's Climate Change Strategic Action Plan

Increased Temperature	Reducing crop yields. The yield of rice decreases by 10% for every 1°C increase in the minimum temperature during the growing season.
Pest and Diseases Outbreak	The higher growth rate of pathogens due to the long growth cycle and warmer season and the increase in the growth of weeds due to the increased atmospheric CO_2 concentration.
Increased extreme weather events	Frequent droughts and floods devastate crop plantations. The increasing frequency and intensity of floods and droughts will make the onset of growing seasons less predictable, thereby affecting productivity, especially rice which is sensitive to the timing of the first rains. Mini droughts in the wet season and unexpected rain in the dry season further affect productivity and the livelihoods of farmers.
Changes in Rainfall Patterns	Wet seasons would be shorter but with higher levels of rainfall, while the dry season will be longer and drier. This will result in shifts in the distribution of rainfall between areas. The changes to the length of seasons, combined with the delayed onset of the wet season after a long dry season, will affect traditional cropping practices.

Table 5. Main threats and vulnerability for crops in Kampong Thom Province *(Source: ICEM 2013, in the NC3)*

Lowland Rainfed Rice	Increased Temperature	More than 75% of the maximum daily temperature is above the optimum zone for lowland rainfed rice.	High
Irrigated Rice		More than 50% of the maximum daily temperature greater than optimum temperature for irrigated rice.	
Soybean		Extreme maximum temperature (<25% of frequency) higher than 35°C during soybean crop High growth.	
Lowland Rainfed Rice	Flooding	Flood prone area around the Mekong and Tonle Sap Lake in the southwestern part of the province. In October, precipitation is above 500 mm per month, and total precipitation in the wet season is above 1,700 mm.	High
Cassava			
Soybean			
Soybean	Decrease in Water Availability	The decrease in water availability will be between 10% and 4% during the crop growth.	High

Root causes and drivers of vulnerability

Cambodia is one of the fastest-growing economies in Southeast Asia, with an average GDP growth rate of 7.6% from 1995 to 2019, elevating the country to lower middle-income status in 2015. This growth has been primarily driven by agriculture, industry, and tourism. The government aims to sustain this momentum, targeting upper-middle income status by 2030 and high-income status by 2050. However, progress was disrupted by the Covid-19 pandemic, which reduced GDP growth to 3.1% in 2020 and 3% in 2021. While the

economy rebounded to 5.5% growth in 2022, supported by government's Covid recovery policies, significant challenges remain.

One of the key challenges is the impact of climate change on future economic growth. Projections show that GDP growth will decrease by 2.5% by 2030 and 9.8% by 2050, assuming global temperature increase is limited to below 2°C by 2100[24]. The economy's climate and social vulnerability is largely due to its heavy dependence on the goods and services provided by healthy ecosystems. Given this economic dependence on natural resources, much of the projected loss in GDP growth is expected to result from declining natural resource productivity from both anthropogenic pressures and climate change, posing risks to the country's development goals, natural resource-based livelihoods, and the well-being of its population[25].

Climate-driven hazards compromise natural resource productivity in Cambodia in several other ways. Prolonged droughts and flooding accelerate soil and ecosystem degradation by increasing erosion and reducing soil moisture[26]. Climate-induced soil and ecosystem degradation is further compounded by unsustainable land management practices, including illegal logging and agricultural expansion. Declining crop productivity — driven by a combination of climate impacts and non-regenerative farming practices — forces many farmers to adopt maladaptive strategies. One common response is the expansion of small-plot agriculture into previously forested areas, as farmers seek fertile soils to offset productivity losses on degraded croplands. However, this conversion of native forests into farmland perpetuates a destructive cycle of deforestation and unsustainable crop production, further degrading ecosystems and reducing their resilience to climate change.

Global Forest Watch (2022) identified Cambodia as having one of the world's highest deforestation rates, with a 30% loss of forest cover between 2006 and 2022, a trend reflected in the substantial forest loss and fragmentation observed in the TSB during this period. The forest cover change analysis shows that 1,707,644 ha were lost over the period[27]. This deforestation undermines Cambodia's carbon mitigation efforts, with the forest and land use sector being the largest contributor to the country's GHG emissions (80% in 2016[28]). The vulnerable northern upland areas of SSR, including PKNP, are experiencing rapid ecosystem degradation. Forest cover loss in this region has occurred at a rate of 1.22% annually over the past three decades, driven primarily by the rapid expansion of cash crop farming and illegal logging. This rate is higher than the national average deforestation rate of 0.8%–1%.

The mosaic upland areas of SSR — consisting of agricultural lands and forest ecosystems — plays a critical role in regulating hydrological cycles, controlling surface runoff and recharging groundwater aquifers. However, as forest ecosystems degrade and unsustainable crop production expands, the rate of surface runoff increases, reducing infiltration and aquifer recharge. This leads to soil erosion, nutrient loss, and decreased water retention in soils, ultimately impairing water resources and soil health. These disruptions to critical ecosystem services weaken ecological and agricultural productivity in the catchment, perpetuating a negative cycle of degradation and loss of critical ecosystem services.

The combined challenges of climate change and ecosystem degradation have cross-cutting impacts, increasing the vulnerability of both the economy and population residing within the TSB[29]. Key sectors at risk include water resources, agriculture, forestry, fisheries, and tourism[30], which together support the rural livelihoods of approximately 2.6 million people in the basin — two-thirds of the total population residing in the TSB. These communities depend on natural resources such as water resources, forest products (both timber- and non-timber), fisheries, and fertile soils for crop production.

The TSB is a the key agroecological zone in Cambodia, contributing approximately 12% of the country's annual rice production, and supporting crops such as corn, cassava, soybeans, and fruit and nut plantations such as banana, mango, and cashew. However, climate change and environmental degradation are disrupting water regimes and soil productivity, threatening agricultural output and food security. A study by Peng et al., 2004 indicates that a 1°C rise in average temperature could reduce annual rice crop yields by 10%, making farming increasingly unprofitable. Additionally, a shorter wet season with more intense rainfall is altering

water availability, leading to prolonged dry seasons and flooding. These shifts disrupt traditional cropping practices, further undermining agricultural resilience[31].

Many economically disadvantages and climate-vulnerable communities in the TSB rely on agriculture for their livelihoods and food security. However, their dependence on rain-fed farming makes them highly susceptible droughts, while soil and ecosystem degradation increase their exposure to droughts as well as floods and storms. Limited access to modern irrigation infrastructure, along with insufficient technical knowledge of conservation agriculture, alternative cropping strategies, and agroforestry constrains their ability to adopt resilience-enhancing agricultural practices. These barriers to adaptation are further compounded by lack of access to finance and technology.

The degradation of water resources affects not only land-based livelihoods but also downstream communities that depend on the Tonle Sap Lake. Although the majority (53.5%) of the lake's water originates from the Mekong River, a significant amount (~34%) originates from the surrounding watersheds of the TSB, with the remaining 12.5% derived directly from precipitation over the lake itself[32][6]. The loss of critical regulating services in the upper catchments will have far-reaching consequences for the 2 million people who rely on the lake for their livelihoods. This includes the loss of valuable fishing grounds, which support an average annual fish harvest of approximately 300,000 tonnes.

Due to the concentration of cultural and natural heritage sites, the economic contribution of tourism in Cambodia is disproportionately concentrated in Siem Reap Province, which alone accounted for almost a quarter of national tourism revenue (~$1.2 billion), as well as accounting for almost 40% of tourism-sector jobs (248,000) in 2019. Much of this tourism is linked to the natural and cultural heritage of the area, including eco-tourism and activities related to the Angkor Temple Complex. Though the Covid-19 pandemic causes a sharp decline in tourism from 2020 to 2022, the sector began recovering in mid-2022 and is expected to continue growing, reinforcing its importance to the local economy[33][7].

Tourism in TSB is closely tied to water resources, with a reliable supply essential for sustainable tourism. However, tourism both impacts and is vulnerable to changes in the hydrological cycle. High water demand, especially during peak seasons, depletes groundwater and surface reserves, while tourism-generated waste degrades water quality. Unsustainable infrastructure development — such as hotels, resorts and restaurants — further harms ecosystems, reducing the area's natural appeal and increasing water scarcity in dry seasons and flood risk in wet seasons.

The SSR Watershed faces a critical water-related vulnerability that threatens Cambodia's tourism revenue. Angkor Wat's longevity is intrinsically tied to the natural hydrological cycle[34][8]. The temple foundations depend on a delicate balance of groundwater levels, and seasonal fluctuations in the water table affects the structural integrity of sandstone blocks, leading to potential instability and subsidence. Reduced water availability due to climate change and excessive groundwater abstraction can cause soil drying and contraction, weakening temple foundations and increasing structural stress. These threats are compounded by deforestation and land use changes in the upstream watershed, which are altering water flow patterns, further disrupting the hydrological balance. Therefore, protecting the hydrological balance is essential for preserving both the site and the tourism sector.

The connection between climate change, water resources, commercial enterprises, and the economy underscores the opportunity to engage the private sector as a driver of sustainable water management in Cambodia, particularly within the Siem Reap watershed. Tourism, agribusiness, and other water-intensive

industries depend directly on healthy ecosystems and reliable water supplies, positioning them as both beneficiaries and stewards of these resources. By adopting water-efficient technologies, investing in ecosystem restoration, and supporting collective watershed management initiatives, private actors can help safeguard the services on which their operations rely. At the same time, their participation can unlock new streams of sustainable finance, strengthen climate resilience across value chains, and create shared value by aligning environmental protection with long-term economic competitiveness.

There are approximately 24 different indigenous peoples[35] in Cambodia (known as Khmer Leu) distributed across 22 provinces and constituting 2-3% of the national population. These groups include eight registered ethnic minority groups[36], including the Kuoy people who are present in the Varin district with 177 families, totalling 599 persons. Efforts have been made to form an indigenous community within this district, specifically in the villages of Srenoy, Sre Samuth, Lvea, and Kork Wat in the Sre Noy commune. These villages have applied for community membership to preserve their traditions, culture, and beliefs inherited from their ancestors. This initiative reflects a broader push for cultural preservation among indigenous groups in Cambodia, particularly in areas like Siem Reap where historical and cultural landmarks are prevalent. Indigenous peoples livelihoods are strongly linked to their land use systems and access to forest resources; these groups are engaged in crop rotation and animal husbandry, and in the forest harvest rattan and vines, cardamom and honey. While the government of Cambodia has recognised the rights of Indigenous Peoples in law, the implementation and practical support for cultural preservation and sustainable development are still limited. There's an ongoing call for a national action plan to better serve these communities.

Summary of climate impacts and vulnerabilities.

The table below provides a summary of the major climate change threats facing Cambodia, outlining their associated impacts, the most vulnerable populations and systems, and key strategies to reduce vulnerability. It is based on current climate trends, future projections, and evidence from national vulnerability assessments and sectoral studies, as presented above. The table highlights how rising temperatures, changes in rainfall patterns, and the increasing frequency of extreme weather events affect critical sectors such as agriculture, water resources, and ecosystems. It also identifies the communities most at risk—particularly smallholder farmers, women, and those in ecologically sensitive or economically disadvantaged areas—and presents a range of non-infrastructure adaptation measures, including climate-resilient agriculture, ecosystem-based approaches, and enhanced climate information services.

Table 6. Summary table of projected climate change, the impacts of change, vulnerabilities and potential adaptation strategies.

Rising temperatures (up to +4.1°C by 2100 under SSP5-8.5)	• Reduced crop yields (e.g. 10% rice yield loss per +1°C in minimum temperature) • Increased pests and disease outbreaks	• Smallholder farmers • Lowland and irrigated rice crops • Crops sensitive to temperature (soybean, cassava, rice) • Economically disadvantaged people • Land-poor households • Women who face disproportionate challenges due to limited land ownership (own only 10% of	• Introduce climate-resilient and heat-tolerant crop varieties; improve access to climate information and training for farmers, especially women. • Promote climate-smart agriculture

Increased frequency of hot days (150+ days/year by mid-century)	• Heat stress on people and crops • Altered growing conditions	agricultural land), restricted access to agricultural inputs, financial services, and climate information.	• Expand access to seasonal forecasts and early warning systems
More intense and erratic rainfall (+17% in Siem Reap under RCP8.5)	• Increased flooding risk • Increased runoff • Damage to crops and livelihoods	• Tonle Sap Basin • Flood-prone areas • Economically disadvantaged communities	• Promote ecosystem-based adaptation (e.g. wetland and forest protection) • Support community-based disaster preparedness
Drier and longer dry seasons	• Water scarcity • Decreased river flows (e.g., 33–78% reduction in Siem Reap River) • Drought-related crop failures	• Farmers relying on rain-fed agriculture • Groundwater-dependent communities	• Promote diversified livelihoods • Develop water-saving agricultural practices • Strengthen land-use planning
Shift in seasonal patterns (delayed wet season, shorter growing windows)	• Reduced planting predictability • Mismatch between crop cycles and rainfall	• Rice farming systems • Subsistence farmers with limited inputs	• Adjust cropping calendars • Strengthen extension services for climate-adapted planning • Promote agroecological practices
Higher probability of extreme events (floods, droughts, storms)	• Cropland destruction • Reduced crop productivity • Food insecurity • Loss of physical assets • Economic disruption (US$1.8 billion in damages 2005–2019)	• 35% of communes classified as high/very high vulnerability • Upper watershed communes	• Strengthen early warning systems • Support local climate risk assessments and preparedness plans
Changing ecosystem dynamics (e.g., Tonle	• Loss of seasonally flooded and rain-fed habitats	• Communities relying on forest/fisheries resources • Women in informal natural resource sectors	• Protect critical ecosystems • Integrate traditional knowledge into adaptation planning

Sap floodplain)	• Fisheries and biodiversity impacts		• Enhance women's participation in climate action

Future Narratives

As noted above, the root causes and underlying narratives driving the development challenge in Cambodia could progress along several pathways, the interaction of which would create differing future narratives that need to be accounted for in designing sustainable interventions that remain impactful in the long term. Given that the development challenge centres on the multiple impacts of deforestation/land degradation, three areas of uncertainly frame the future narratives for this project: the productivity of agriculture, the rate of climate change, and the rate of economic development.

Narrative 1: Under more optimistic climate scenarios, the rate of change will be lower, and with that there is expected to be a decrease in the intensity of climate impacts. Assuming that the slower rate of change, combined with continued support for improved practices, enables communities to maintain or even improve agricultural productivity, the drivers of deforestation will become more manageable. If combined with strong economic growth, both nationally and regionally, the potential for livelihood diversification – including through ecotourism and value chain development – will be bolster local communities, further reducing extractive pressure on natural resources.

Narrative 2: If under optimistic climate trajectories agricultural production still declines or fails to accommodate population growth, the pull factors driving maladaptive practices that lead to deforestation and degradation may increase. This includes potential expansion of agricultural areas to increase production, or the uptake of cashew production – both of which could lead to illegal deforestation to accommodate the changes. However, if accompanied by strong economic growth both locally and regionally, the opportunity for livelihood diversification will increase through improve market opportunities and potential for tourism growth.

Narrative 3: Under less optimistic climate scenarios, the rate of change for climate impacts will increase, which will exacerbate challenges to agricultural productivity and increase pressures on natural resources. This will likely include more intense flooding which would not only damage crops, but also infrastructure needed for economic development. Under such conditions, natural resource-based livelihoods will increasingly be driven to maladaptive practices that degrade ecosystems, with the resulting loss of ecosystem services perpetuating the viscous cycle of degradation. Should this be paired with strong economic growth, opportunities will present to develop livelihood alternatives that are less dependent on vulnerable natural resources.

Narrative 4: Should the climate and agricultural production scenarios under Narrative 3 be paired with slowed economic growth – either as a result of pressures economic pressures from climate change or external factors – then the opportunities for livelihood development would become more dependent on self-sufficiency, sustainable use of resources and working within local markets.

Under all future narratives, there is clear need to address the drivers of degradation in a manner that builds the resilience of local communities. While more optimistic climate scenarios will slow the impact of CC, the need for building resilience among natural resource-based livelihoods is present under all future climate scenarios. For future narratives of rapid economic growth, there is opportunity to diversify livelihoods to take advantage of a broader regional and international market for sustainable products and green destinations. However,

should economic growth be slower, additional efforts will be required to break the cycles of degradation through improved land-management practices and protection of ecosystem services.

Preferred Approach

A systematic, integrated approach to watershed management is required to address the climate vulnerability and environmental degradation in Cambodia's Tonle Sap Basin (TSB), while safeguarding its natural and cultural heritage. This approach should be systems-based, incorporating three key pillars for sustainable investment in Cambodia, namely governance, finance, and people. When underpinned by a foundation of knowledge and learning, these pillars create an enabling environment for lasting and scalable impact.

Integrated water resource and flood risk management must account for spatial interlinkages and dependencies between land use, ecosystem health, and climate vulnerability. Protecting and restoring important ecosystems will enhance the provision of ecosystem goods and services, reducing susceptibility to droughts and floods, while strengthening community resilience. Sustainable landscape management across the TSB should include the conservation and active rehabilitation of degraded ecosystems to restore critical ecosystem services. This requires collaboration with government, the private sector, and local communities to address degradation drivers by incentivising sustainable practices while maintaining the livelihoods and culture of climate-vulnerable communities. Private sector participation can also unlock new streams of sustainable finance, strengthen climate resilience across value chains, and create shared value by aligning environmental protection with long-term economic competitiveness.

Barriers

Barrier 1: *Policy and institutional capacity gaps for integrated planning, coordination and implementation at the national, provincial and watershed level.* Watershed management in the TSB is currently fragmented, with responsibilities distributed among multiple stakeholders and government departments overseeing different sectors[37]. This has led to siloed efforts and limited coordination. The Tonle Sap Authority, established in 2009, was intended to enhance management but has a mandate focused on research, education and information dissemination. However, it's high-level representation allows it to support coordination by identifying gaps and advancing knowledge.

At the local level, subnational watershed management committees, chaired by provincial governors and compromising relevant provincial departments, facilitate coordination within their jurisdictions. Despite these structures, integrated planning remains inadequate, particularly in addressing climate change alongside forest, water, biodiversity and cultural assets in protected areas (PAs) and watersheds. This challenge is further compounded when watersheds span administration boundaries.

Across the TSB, watershed management committees have limited capacity to make informed, evidence-based decisions that balance development goals, environmental protection and cultural values. Limited data on the interactions between forestry, water and cultural assets hampers effective management. This challenge is compounded by limited availability of geospatial information and tools — such as land and forest cover maps, tourism data, and climate trends — and a lack of capacity among decision makers to apply available evidence in planning.

Additionally, the committees primarily consist of key ministry representatives, excluding other vital stakeholders, including the private sector, research institutions, women and youth groups, and commodity value chain actors. The absence of a multi-stakeholder platform reduces engagement and local ownership. Consequently, key management strategies — such as the SSR Watershed Management Plan and PKNP Management Programme — are not in synergy and are not achieving the desired sustainability.

At a policy level, there are currently no appropriate agriculture and land use management policies that integrate climate resilience, land use, water conservation, soil preservation, erosion control, and pollution reduction. Instead, current interventions for ecosystem management in the TSB are mostly project based and focus on specific geographical locations and individual sectors. This leads to the siloing of ecosystem and watershed management efforts, limiting a holistic landscape approach. Furthermore, climate vulnerabilities are not assessed in land use planning, and the lack of integrated watershed planning hinders monitoring of land use and forestry. This fragmentation enables continued degradation, further exacerbating climate change impacts.

Barrier 2: *Limited capacities to operationalise/implement sustainable financing mechanisms and mobilise investments at scale for integrated watershed management.* Cambodia faces a significant adaptation financing gap. The Cambodia NAP Financing Framework reports that only about 8% of prioritised adaptation actions were funded between 2015–2018. The updated NDC estimates at least US$ 2 billion is needed to meet adaptation needs in the country, with the majority expected to be mobilised from external sources. However, the NDC lacks a clear mobilisation strategy.

An initial proposal to pilot sustainable financing options — such as Payments for Ecosystem Services (PES), performance-based climate-resilient grants (PBCRG) and REDD+ — was developed for the SSR Watershed. However, further work is needed to operationalise these options to support watershed management plans across the TSB and local-level actions like the PKNP management programme.

A major barrier to scaling investment is the limited capacity of watershed management committees to operationalise sustainable financing solutions and engage key partners, including the private sector and International Finance Institutions (IFIs). For example, the pilot PES initiative developed by MoE with UNDP support has been constrained by the provincial administration' limited technical capacity to mobilise financial contributions from the tourism sector or channel funds to upstream communities for sustainable livelihoods that protect the landscape.

Additionally, local knowledge gaps hinder investments in nature-based solutions (including agroforestry and conservation agriculture) that could enhance cultural heritage protection and benefit Siem Reap's economy, particularly tourism. Similarly, performance-based climate resilience grants (PBCRGs) have faced challenges in securing co-financing for long-term implementation. The terminal evaluation of a project that piloted PBCRGs, highlighted the need to better align funding cycles with sub-national budgeting and planning processes.

In the existing national budgeting system, Ministry of Economy and Finance (MEF) is the main government body responsible for the allocation of national budget for both national and sub-national administration. As indicated in the "Budget in Brief for Fiscal Year 2025", the country is under deficit for its subnational budget allocation (comparison of revenue against its recurrent and capital expenditure). Despite the absence of physical subnational mechanism for the management of climate finance, this may hinder the project to establish long-term sustainable finance mechanism for both ecosystem and climate resilient funds. Experiences from previous piloting on different mini-trust fund modalities indicated that reliance on local community alone without intervention at the subnational budget and private sector will not secure the sustainability of proposed financing modality. Though in this 2025 budget brief, the government is planning to allocate part of their USD 2.7 Billion loan to establish the Cambodia Climate Finance Facility. Though there is still no information if the facility would reach the subnational budget.

Private sector financing remains an untapped opportunity. Many businesses in the TSB, including those in tourism and mineral water extraction, depend on natural resources, yet no mechanism exists to manage revenue for strengthening ecosystem and community resilience. Greater engagement with the private sector is essential to unlocking sustainable finance for adaptation and conservation efforts.

Barrier 3: *Limited formalised knowledge on natural and cultural asset value, and nature-based solutions (NbS), undermining sustainable tourism and resource management in the TSB.* In Cambodia, gaps throughout the knowledge value chain — from generation, to dissemination, and application — hinder the effective integration of scientific, local, and indigenous knowledge into land and resource-management. This lack of integration limits informed decision-making for sustainable development at all levels of governance. Without adequate knowledge on the economic and social benefits of healthy ecosystems and biodiversity, climate change adaptation efforts are not optimal.

At the national and institutional levels, limited knowledge generation results in an inadequate understanding of the value of national assets in delivering essential ecosystem services. In the TSB, ecosystem service valuations are rarely integrated into decision-making, with investment in natural capital often assessed through short-term cost-benefit trade-offs rather than long-term sustainability. Reliable, locally specific valuations — demonstrating the links between ecosystem services, livelihoods and business — are essential for mobilising and sustaining investment in nature-based solutions, including conservation, restoration, and sustainable land management practices such as conservation agriculture and agroforestry.

Institutions like the Phnom Kulen Orchid Research and Conservation Centre have been established by government to generate knowledge on natural resources. In 2020, its mandate was expanded to promote linkages between natural and cultural assets for local development. However, the centre lacks the technical capacity and financing resources to fulfil its knowledge-generation role; with recent government priorities shifting away from further investment in the centre. As a result of limited knowledge-generation by this institution and others, decision-making bodies, including Watershed Management Committees and sectoral ministries/departments have limited understanding of suitable NbS for restoration, conservation, and sustainable land and resource management for business and livelihood resilience. With adequate support, the centre could serve as a national hub for conservation, rehabilitation and restoration, disseminating best practices through research and project-based monitoring. Establishing demonstration sites around the centre and within PKNP would further showcase the effectiveness of NbS over time.

Beyond knowledge generation, gaps also exist in data dissemination, including the availability of data management systems and decision-making tools for subnational development planning and budget allocation. While some tools have been introduced through decentralisation efforts, there has been limited focus on integrating scientific data with local and indigenous knowledge, leading to inefficient planning, poor coordination, and repetitive piloting of interventions. Additionally, inadequate monitoring, analysis and reporting on proven approaches prevent the scaling up of successful pilot initiatives. Although platforms like the NDC-tracking system exist, they require further strengthening to enhance accessibility of information, lessons learnt, and best practices for local planners and decision-makers.

The consequences of inadequate knowledge generation and dissemination extend to the application stage, where policy formulation and on-the-ground implementation do not reflect the interconnected climate and degradation challenges in the TSB. As a result, individual sectors prioritise short-term economic gains over climate resilience and sustainability, leading to continued environmental degradation.

For instance, while tourism generates revenue in the TSB, it does not substantively contribute to the protection of natural or cultural assets. Unplanned tourism, particularly during festival periods at popular sites such as the PKNP and Angkor Wat, has damaged to the archaeological sites, increased littering, and polluted water bodies. Although some villagers earn income from selling goods and services to tourists, these benefits remain unsustainable and unevenly distributed. traditional villages located far from tourist hubs are often excluded from economic opportunities related to tourism, exacerbating rural inequalities.

Similarly, farmers in TSB have limited technical knowledge of agroecological practices that could prevent deforestation, soil degradation, and the loss of carbon stocks and land productivity. Without information on changing ecological and climate trends, they struggle to adapt their cultivation practices or adopt NbS that

enhance water conservation, groundwater recharge, and soil fertility. These technical gaps are further compounded by a lack of entrepreneurial capacity to strengthen commodity value chains and market access for products such as cashews and non-timber forest products (NTFPs) like resin, honey, and medicinal plants. As a result, poverty-driven forest encroachment and other maladaptive practices persist.

Addressing these gaps across the knowledge value chain — from generation to dissemination and application — is critical to ensuring sustainable land and natural-resource management in Cambodia. Strengthening institutional capacity, improving data accessibility, and enhancing knowledge-sharing mechanism will enable informed decision-making and drive long-term environmental and economic resilience. Some advancements have been made to improving knowledge management in Cambodia in recent years, particularly through the establishment of the Cambodia Environmental Management Information System (CEMIS). These efforts are being expanded through the recently approved GEF-8 Ecosystem Restoration Integrated Programme (ER-IP) project, which was developed in conjunction with and to be complementary to the proposed LDCF project. The ER-IP project will further strengthen the CEMIS platform by developing a knowledge management system and associated decision support tools for adaptive integrated watershed management, which together will close some gaps in the knowledge value chain. However, there is still need for further consideration of climate change in the knowledge systems.

Objective

To build the climate resilience of local communities in the Tonle Sap Basin through an integrated watershed management approach, while conserving the natural and cultural heritage that sustains local livelihoods and societies.

Baseline in the absence of the project

Without urgent intervention and long-term investment, the degradation of both natural and agroecological systems in the TSB — particularly in the Siem Reap/Phnom Kulen landscape, where deforestation rates are highest — will persist. As a result, the loss of regulating ecosystem services will impact water availability and soil health. These environmental changes will, in turn, affect the local economy, leading to a decline in agriculture and other natural resource-based livelihoods, as well as a potential downturn in tourism if cultural heritage is lost or water supply become restricted.

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[3] UNDP. 2025. Landscape Profile and Situation Analysis (Annex 20).

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[5] Sandy soils with a loamy sand or coarser texture, characterized by a lack of significant soil profile development and low humus content

[6] UNDP. 2025. Landscape Profile and Situation Analysis (Annex 20).

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[24] MEF and NCSD, 2018.

[25] Third National Communication, 2022.

[26] It is projected that forest areas, particularly in the northeast and southwest, will be exposed to longer dry periods.

[27] UNDP, 2023.

[28] Biennial Update Report of Cambodia, 2020.

[29] MoE and NCSD, 2021

[30] Third National Communication. 2022.

[31] Third National Communication. 2022.

[32] Chantha, O. *et al*. 2019. Assessing Climate Change Impacts on River Flows in the Tonle Sap Lake Basin, Cambodia. *Water*, 11(3), 618. doi:10.3390/w11030618

[33] Trading Economics, 2022.

[34] Chim, K. et al. 2019 and Jacobson, C. et al. 2022.

[35] 'Indigenous Peoples' in Cambodia are defined in the National Policy on the Development of Indigenous Peoples (NPDIP; 2009) as groups living in the Kingdom of Cambodia who express their ethnic, social, cultural, and economic unity, practice their traditional way of life, and cultivate the land they occupy according to customary rules of collective land use. This definition emphasizes self-identification, cultural distinctiveness, and a historical connection to specific territories, aligning with the broader concept of indigenous identity while tailored to Cambodia's context.

[36] Bunong (~50,000 people); Tumpoun (~30,000 people); Kuoy (~35,700 people); Jarai (~25,000 people); Kreung (~20,000 people); Brao (~15,000 people); Stieng (~10,000 people); Kavet (~10,000 people) - Ministry of Rural Development (MRD) 2024

[37]The MoE is mandated to manage environmental protection — including natural resource conservation, Protected Areas (PAs) management and climate change. The MoWRAM leads water resources management and development — including the management of the Tonle Sap. The MAFF is responsible for the protection and management of forest, wildlife and fisheries resources outside PAs as well as Economic Land Concessions (ELCs). APSARA Authority I responsible for management of areas within the Ankor Archaeological area. Tonle Sap Authority (TSA) is a national institution leading in research and coordination of sustainable management, conservation and protection of the lake. Finally, the MLMUPC, is responsible for land administration, land management and land distribution.

B. PROJECT DESCRIPTION

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF's policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the guidance document. (Approximately 3-5 pages) see guidance here

Theory of Change

1. The Government of Cambodia is implementing an integrated, systems-based approach to climate-resilient watershed management through two complementary projects: one under the GEF-8 Integrated Programme for Ecosystem Restoration, focusing on forest conservation and restoration across the TSB[1][9],

and this LDCF project focusing on community resilience to increasing drought and flood impacts. While each project operates independently with distinct outcomes, their aligned objectives maximise impact across the TSB landscape.

2. The LDCF project aims to enhance climate resilience for vulnerable communities in the TSB while disrupting the key drivers of land degradation to support national watershed restoration efforts. It will specifically target rural communities that rely on natural resources — including water — for their livelihoods yet face high exposure to floods and droughts with limited capacity to adapt to these impacts without external support. By promoting sustainable livelihoods that incentivise ecosystem restoration and conservation efforts, the project will also contribute to Cambodia's green growth agenda. On-the-ground efforts in the Siem Reap Province will generate critical evidence of the effectiveness of these solutions, enabling replication and scaling across the TSB and beyond through governance, finance and knowledge-based enablers.

3. The project's theory of change is structured as a coherent pathway from activities that enable strategic outputs to long-term resilience outcomes in the Tonle Sap Basin — aligned with the three pillars of sustainable investment — *Governance, Finance and People* — supported by a foundation of *knowledge and learning* (Figure 16). This structure ensures crosscutting, complementary, and sustainable benefits, creating a fully integrated solution.

4. At its core, component 1 of the project enhances the capacity of national and provincial institutions to coordinate and implement integrated watershed management, creating a robust planning framework that embeds climate resilience into decision-making processes. This essential outcome, which forms the *governance* pillar of the sustainable investment framework, enables multi-stakeholder collaboration, whereby local communities, government agencies, and private sector partners work in concert to drive nature-based solutions (NbS), including sustainable agroforestry and agricultural practices — addressing barrier 1. These collaborative efforts are supported by targeted investments and innovative financing mechanisms that reinforce the capacity to implement and scale effective conservation measures.

5. The second project component focuses on targeted investments in critical ecosystems of the upper SSR watershed, including the Phnom Kulen National Park, to enhance ecosystem service provision. This will include a combination of NbS in degraded forest and riparian ecosystems, as well as the promotion of community agro-forestry across the agroecological landscape — with the outcome of strengthening community resilience to climate hazards such as floods and drought while simultaneously strengthening agricultural livelihoods. This cost-effective approach will be further enhanced under Component 3, complementing the NbS with sustainable, climate-resilient livelihoods that disrupt the drivers of degradation and reduce pressure on natural ecosystems. The outcome of this support will not only enhance agricultural productivity under changing climate conditions but will develop the value chain for sustainably produced agricultural outputs and non-timber forest products — building the adaptive capacity of rural communities in line with the *People* pillar of the sustainable investment framework.

6. Both Components 2 and 3 include complementary Outputs directed towards the second pillar of sustainable investment — namely *finance*. This will include establishing a framework and implementation roadmap for a blended finance mechanism that will support long-term financing of community-led NbS initiatives in the SSR watershed, as well as establishing an innovation challenge fund that will leverage private investment into the development of sustainable livelihoods in rural communities. Combined, these instruments will address barrier 2, creating a sustainable platform for streamlining investment at the interface of watershed management, ecosystem restoration and community resilience.

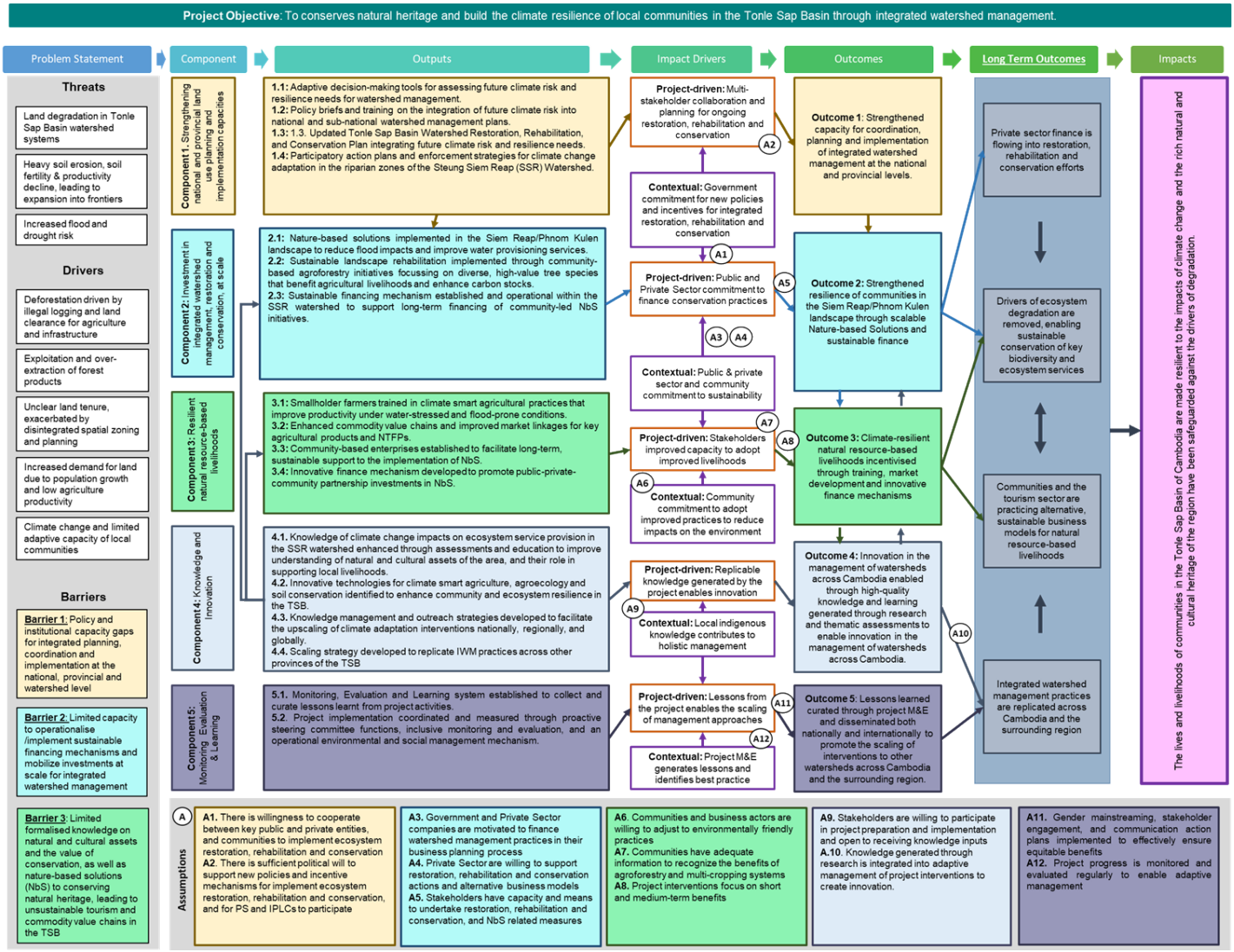
7. The project's fourth component will directly target the foundational *knowledge and learning* aspect of the sustainable investment framework, directly enhancing knowledge of climate impacts on the agroecological landscape and the communities that rely on it, and introducing innovative digital technologies for agricultural value chains. The knowledge generated through these actions, as well as through the continual monitoring of

other project activities under component 5, will be made easily available through a robust knowledge management system, allowing for adaptive management and informed decision making — thereby addressing barrier 3. This foundation of knowledge will lead to an outcome of enhanced innovation in watershed management in the long-term.

8. As these strategic outputs take root, they activate key impact drivers: coordinated multi-stakeholder planning, strong financial commitment from both public and private sectors, enhanced capacity for agroforestry and nature-based solutions, and the dissemination of replicable knowledge. These impact drivers catalyse the transition from improved planning and governance to tangible outcomes, such as restored forest ecosystems, improved water resource management, and sustainable livelihoods for communities in the TSB. In doing so, the project builds resilience against the severe impacts of climate change by breaking the cycle of degradation and fostering a sustainable balance between economic development, environmental conservation, and cultural heritage preservation.

9. The theory of change is underpinned by critical assumptions: that key stakeholders are committed to and capable of sustained collaboration; that there is sufficient political will and financial support to drive the necessary policy and behavioural changes; and that communities will adopt and benefit from the innovative practices introduced. These assumptions ensure that, with regular monitoring and adaptive management, the project will successfully transform the challenges posed by climate change into opportunities for sustainable development in the Tonle Sap Basin.

10. The Project Outputs and activities are summarised below, with more detailed activity descriptions presented in the accompanying Project Document.



Site Selection

11. While broader management interventions under Component 1 will cover the entire Tonle Sap Basin (TSB), on-the-ground investments under Component 2 will focus on the Steung Siem Reap (SSR) watershed — particularly focussing on water source areas in the Phnom Kulen National Park (PKNP) and the forest mosaic in the middle to upper reaches. The Royal Government of Cambodia (RGC) has prioritised the SSR watershed for several reasons, including: i) its diverse habitats and stressors; ii) the presence of nationally important protected areas and cultural heritage sites[2]; and iii) its economic and strategic importance as the country's main tourism destination[3]10. The significance of the Siem Reap Province to the tourism sector is further highlighted by the 'Visit Siem Reap 2024' initiative, launched by the Prime Minister to boost post-Covid-19 recovery through private-sector partnerships, supported by tax and travel incentives. Additionally, Phnom Kulen National Park has been identified as a priority for tourism revitalisation, with plans to develop it into a premier green destination for cultural, natural, adventure, and religious tourism.

12. Within the SSR watershed, intervention sites have been identified based on activity type, community needs, and land ownership. These interventions will span diverse habitats, including community-protected areas (CPAs) within the PKNP, upstream community forests (CFs) surrounding the PKNP, and agricultural land suited for climate-resilient practices such as regenerative agriculture and agroforestry. This habitat diversity allows the project to not only maximise the scale of impact but also demonstrate the suitability of different restoration approaches, tailored to their surrounding habitats. Given the site's

geographical similarities to other provinces in the Tonle Sap Basin, successful interventions could be replicated to support broader conservation and sustainability efforts across the TSB and into the wider Mekong River landscape.

13. Due to the sensitivity of the area, on-the-ground interventions will not take place within the Angkor Archaeological Area; the management of this area is instead overseen by the APSARA authority, which has ongoing initiatives working with communities to conserve and restore forest ecosystems. Additionally, cultural heritage considerations have been integrated in the project's social safeguard assessment and plan[4]11.

Component 1: Strengthening national and provincial land use planning and implementation capacities

(Total Cost: US$ 2,244,589; GEF project grant requested: US$ 693,071; Co-financing: US$ 1,551,518)

14. The first Component is aligned to the Governance pillar, and will improve the coordination, planning and implementation capacities of national and provincial leadership. This will address Barrier 1 identified above and create an enabling environment for ongoing and effective watershed management. In the absence of the project, the lack of integrated planning and coordination will continue to constrain sustainable development efforts in Cambodia.

Outcome 1: Strengthened capacity for coordination, planning, and implementation of integrated watershed management at the national and provincial levels

15. The first Outcome will be achieved through four Outputs, each of which will complement efforts under the Integrated Programme for Ecosystem Restoration by specifically building on the aspects of climate resilience.

16. The combined impact of these outputs will result in significantly strengthened capacity for coordination, planning, and implementation of integrated watershed management at both national and provincial levels. By equipping decision-makers with adaptive decision-making tools, the project ensures that watershed management strategies are informed by climate risk assessments and resilience needs. The development of policy briefs and training programs will further embed gender-sensitive climate resilience into planning frameworks, ensuring that national and sub-national agencies have the knowledge and guidance required to align their policies with emerging climate risks and their differential impacts on different societal groups. Together, these efforts enhance institutional coordination, creating an enabling environment where multi-stakeholder governance structures — such as Watershed Management Committees (WMCs) — can effectively integrate climate considerations into land use planning, water resource management, and disaster risk reduction efforts. The project will leverage the support of WMCs that will be strengthened through the ER-IP project, expanding on the capacity development efforts to better integrate climate change across the various levels of planning. This will enable multi-stakeholder representation from local communities, civil society and the private sector (including tourism, water bottling and agriculture sectors), all of which play a critical role in effective implementation. Of particular importance is the inclusion of women's interest groups, as well as indigenous groups and cultural leaders, to ensure that the management of the Tonle Sap Basin (TSB), and the Steung Siem Reap (SSR) Watershed in particular, is fully gender and socially responsive. The strengthened WMCs will also enable effective inter-administrative coordination.

17. At the landscape level, these strengthened capacities will translate into more cohesive and climate-responsive watershed management. The updated Tonle Sap Basin Watershed Restoration, Rehabilitation, and Conservation Plan will serve as a guiding framework for integrating future climate risks into watershed governance, ensuring that interventions are aligned with national adaptation priorities. The participatory action plans developed for the Steung Siem Reap (SSR) Watershed will further operationalise these strategies, fostering community-driven conservation and adaptation efforts in one of the most vulnerable riparian zones. By embedding climate resilience into both high-level planning and local implementation strategies, the project will establish a scalable model for integrated watershed management that can be replicated across other provinces, ultimately enhancing national resilience to climate-induced water and land degradation challenges.

Output 1.1: Adaptive decision-making tools for assessing future climate risk and resilience needs for watershed management

18. To support the planning processes described above, the project will establish an adaptive watershed management decision-support tool focused on future climate risk and response. This will build on the existing Cambodia Environmental Management Information System (CEMIS), as well as other existing decision-making and assessment tools/software that support

enhancing the function of CEMIS in enabling climate-resilient watershed management — creating a single, user-friendly interface for informed decision making on watershed management.

19. The resulting tool will provide an ongoing support platform for decision makers in both the public and private sectors, driven by the WMCs, ensuring planning decisions are informed by the latest science and lessons related to climate risk, nature-based solutions and green economy development. By integrating training protocols into MoE systems, the project will create an enabling environment for scaling the use of the decision-making tools across Cambodia, transforming the planning process in the country, thereby strengthening the role of the green economy in national priorities to graduate the country to upper-middle-income status. The tools will include specific consideration of gender-specific climate impacts and adaptation needs to ensure that adaptation planning using these tools is gender responsive.

- Activity 1.1.1: Develop a web-based decision-support tool integrated within CEMIS for watershed management and monitoring

- Activity 1.1.2: Develop standard operating procedures for the operationalisation of the decision-support tool, including its data storage and maintenance

- Activity 1.1.3: Facilitate the designation of specific personnel at MoE to operationalise and maintain the Platform and Tool

- Activity 1.1.4: Initiate a training-of-trainers (ToT) approach to build the technical capacity of relevant personnel within MoE to operate the platform and train decision-makers on its use and application

- Activity 1.1.5: Establish a long-term capacity development programme operated through the MoE to apply knowledge in decision-making processes

Output 1.2: Policy briefs and training on the integration of future climate risk into national and sub-national watershed management plans

20. With strengthened coordination mechanisms and decision-support tools in place, the project will support the integration of climate resilience considerations into national and sub-national watershed management plans across key sectors, including forestry, water, agriculture, and tourism. Targeted plans will include: i) the PKNP Management Programme and Action Plan; ii) National/Protected Area Strategic Management Plan; iii) the National Forest Programme; iv) National Action Programme for Combating Land Degradation; v) the National Biodiversity Strategy and Action Plan; and vi) the National PES Financing Roadmap [5]12. This process will involve a comprehensive review of existing policies and frameworks, identifying gaps and opportunities to incorporate future climate risk projections. Policy briefs will be developed to provide actionable recommendations for mainstreaming climate resilience, ensuring coherence across sectoral plans while addressing the needs of diverse stakeholders, including vulnerable communities, indigenous groups, and women who rely on the natural resources provided by the watershed ecosystems for their livelihoods (including the tourism sector). These briefs will also be underpinned by a Social and Environmental Strategic Assessment conducted in line with UNDP safeguard policy. The project will adopt a collaborative governance approach, engaging Watershed Management Committees (WMCs), government agencies, and civil society to ensure that policy revisions are inclusive, evidence-based, and aligned with Cambodia's national climate adaptation and biodiversity goals. Recommendations will be validated through stakeholder consultations and integrated into policy frameworks through targeted training programs for decision-makers at the national and sub-national levels. Lessons learnt from activities in target landscapes, such as the local-level planning under Output 1.3 and the establishment of the innovative finance under Output 2.1, will serve as key references to the revision and/or formulation of the coherent national level policies/frameworks related to watershed governance.

- Activity 1.2.1: Review national and sub-national plans across relevant sectors related to watershed management (including forestry, water, agriculture, and tourism)

- Activity 1.2.2: Prepare policy briefs to guide the coherent and gender-balanced integration of climate resilience into sectoral plans

- Activity 1.2.3: Host a multi-stakeholder validation workshop to present policy recommendations and garner support for their uptake

- Activity 1.2.4: Train decision-makers at local, provincial, and national government levels on the use of project-developed tools to implement policies and integrate future climate risk into watershed management plans

Output 1.3: Updated Tonle Sap Basin Watershed Restoration, Rehabilitation, and Conservation Plan integrating future climate risk and resilience needs

21. Building on strengthened inter-administrative coordination mechanisms, this output will update and enhance the Integrated Tonle Sap Basin Watershed Restoration, Rehabilitation, and Conservation Plan to incorporate climate resilience, gender responsiveness, and nature-based solutions. The revised plan will provide a strategic framework for balancing environmental conservation with socio-economic development, ensuring that watershed management efforts support both ecological integrity and community resilience. This process will be informed by comprehensive land use, land cover, and climate risk assessments, as well as ecosystem mapping to identify critical areas for restoration and sustainable management. These mapping exercises will complement, and build on, those being done under the ER-IP project through a more focused biophysical analysis of the SSR watershed that covers an Ecosystem condition assessment, an Ecosystem services supply analysis, and a Socio-ecological assessment — enabling a data-driven understanding of ecosystem service supply, risks, and economic dependencies, supporting sustainable resource management and long-term resilience planning. Additionally, the updated plan will align with national policies and international commitments, ensuring integration into Cambodia's National Biodiversity Strategy and Action Plan (NBSAP), the Land Degradation Neutrality (LDN) Action Plan, and the broader national spatial planning framework.

22. To ensure practical implementation, the plan will be developed through a participatory approach, incorporating insights from diverse stakeholder groups, including local communities, indigenous leaders, the private sector, and conservation organisations. Special attention will be given to identifying economic opportunities that align with conservation efforts, such as ecotourism, agroforestry, and payment for ecosystem services. The updated plan will serve as a guiding document for decision-makers at national and sub-national levels, ensuring that future watershed management initiatives are informed by scientific data, local knowledge, and climate resilience principles. All activities under this Output will consider ongoing efforts to update the Tonle Sap Basin Watershed Restoration, Rehabilitation, and Conservation Plan under the ER-IP project, sharing resources where feasible, with the LDCF project focused specifically on the climate-responsiveness of the plan. The final revised plan will incorporate inputs from both projects, with the ER-IP project holding primary responsibility for consolidating and validating the plan.

- Activity 1.3.1: Review the existing Integrated Tonle Sap Basin Watershed Restoration, Rehabilitation, and Conservation Plan to identify gaps and opportunities for integrating climate risk and resilience

- Activity 1.3.2: Conduct land use, land cover, and climate risk assessments for the TSB, underpinned by extensive stakeholder engagements

- Activity 1.3.3: Conduct integrated ecosystem mapping to identify remnant forest areas and riparian zones along critical waterways and mapping potential partnerships for sustainable socio-cultural and economic actions across the TSB

- Activity 1.3.4: Assess land degradation to identify areas for restoration and rehabilitation

- Activity 1.3.5: Incorporate the results of land use and land cover analysis as well as ecosystem mapping, climate hazard and vulnerability information to formulate a climate-resilient and gender-responsive Tonle Sap Basin Watershed Restoration, Rehabilitation, and Conservation Plan

- Activity 1.3.6: Incorporate the revised plan into the existing national spatial plan and environmental-related action plans such as NBSAP and LDN Action Plan

- Activity 1.3.7: Develop SOPs for regional and national decision-making bodies to internalise the management and decision-making processes laid out in the plan, including streamlining the use of decision-making models and tools proposed under Output 1.1

Output 1.4: Participatory action plan and enforcement strategy for climate change adaptation in the riparian zones of the Steung Siem Reap (SSR) Watershed

23. The Steung Siem Reap (SSR) Watershed has been identified by the Government of Cambodia as a priority area for restoration, rehabilitation, and conservation due to its high levels of degradation, its economic and cultural significance, and its considerable vulnerability to future climate change threats. Working in close coordination with the sub-national planning under the ER-IP project, this output will develop a participatory action plan for climate change adaption under the umbrella of a watershed management plan for the SSR Watershed, supported by enforcement strategies and spatial maps to ensure effective,

community-led watershed management that maximise the mutually reinforcing aspects of conservation, local livelihoods, and climate adaptation. Through its prioritisation under both the ER-IP and LDCF projects, the SSR Watershed will serve as a pilot site for nature-based solutions (NbS), co-management strategies, and investment planning, providing a replicable model for scaling successful approaches across Cambodia and regionally. This replication potential will be facilitated by the innovative finance mechanisms under Component 2, the market development and public-private-community partnerships under Component 3, and the knowledge management under Component 4.

24. The project will adopt a stakeholder-driven, multi-sectoral approach to ensure that traditional and customary knowledge is integrated with scientific assessments, ecosystem service valuation, and climate hazard analysis. Extensive stakeholder dialogues will be facilitated through WMCs to document traditional land-use practices, climate vulnerabilities, and local conservation knowledge. This information will be blended with scientific data to develop an inclusive, gender-responsive, and climate-informed management plan. Additionally, a detailed spatial map and zoning framework will be established to support the demarcation, land registration, and governance of conservation, sustainable use, and core protection zones in the SSR Watershed and Phnom Kulen National Park (PKNP). The key deliverable under this output will an updated SSR Watershed Management Plan[6]13, providing detailed, effective co-management strategies and actions for the nature-based solutions in SSR Watershed, with a great emphasise on the protection of the PKNP.

25. The careful vertical integration of the SSR Watershed Management Plan with national land use policies — along with its positioning under the broader framework of the updated Tonle Sap Basin Restoration, Rehabilitation, and Conservation Plan — will create a long-term governance structure that supports effective enforcement and sustainable watershed management. Moreover, the stakeholder-driver, multi-sectoral approach that will be adopted for the SSR Watershed Management Plan will ensure that the implementation of the plan is sustainable in the long term. All activities under this output will be subject to the safeguard screening and associated processed as outlined in the SESA.

- Activity 1.4.1: Host extensive stakeholder dialogues to identify traditional/customary and cultural values/knowledge about watershed management, as well as climate hazards and vulnerabilities in the area

- Activity 1.4.2: Develop detailed, effective co-management strategies and actions for the nature-based solutions in SSR Watershed, with a great emphasis on the protection of the PKNP

- Activity 1.4.3: Develop and adopt a detailed spatial map and zoning for SSR and PKNP governance to facilitate demarcation, land registration, and zoning (sustainable use, conservation, and core zones) of community-based ecosystem conservation, restoration, and rehabilitation

Component 2: Investment in integrated watershed management, restoration and conservation, at scale

(Total Cost: US$ 10,329,548; GEF project grant requested: US$ 3,100,744; Co-financing: US$ 6,961,534)

Outcome 2: Strengthened resilience of communities in the Siem Reap/Phnom Kulen landscape through scalable nature-based solutions and sustainable finance

26. The second component of the project will focus on building the resilience of vulnerable local communities in the TSB to the impacts of extreme climate events, including storms, floods and droughts, by improving the provision of regulating ecosystem services within the agroecological systems of critical watershed areas. The approach to on-the-ground interventions will align with and directly support the implementation of the plans developed under Outputs 1.3 and 1.4. This outcome is central to the project objective of conserving natural and cultural heritage, investing directly in nature-based solutions that enhance ecosystem service provision and reduce the impact of extreme climate events on vulnerable communities. To maximise impact, on-the-ground restoration efforts will focus largely on the upper catchment areas of the SSR watershed, which are particularly vulnerable to the impacts of extreme climate events (see Climate Change Context above). By focusing restoration on specific geographic areas, with different treatments/approaches applied at different sites within the agroecological forest mosaic, as well as allowing for control sites that are exposed to the same monitoring protocols, the project will generate a strong evidence base of best practice that can be replicated elsewhere in the TSB. Finally, a blended finance framework will be developed to create a platform for scaling of the approach both locally and across the rest of Cambodia, addressing barrier 2. All outputs

under this outcome will be covered by the Environmental and Social Impact Assessment, and of the subsequent Environmental and Social Management Plan.

Output 2.1: Nature-based solutions implemented in the Siem Reap/Phnom Kulen landscape to reduce flood impacts and improve water provisioning services

27. The first step will be to invest directly in nature-based solutions (NbS) in the Siem Reap/Phnom Kulen landscape to promote the provision of critical ecosystem services, based on the ESIA/ESMP. The proposed NbS include direct restoration of 2,174 ha of degraded forest ecosystems as well as riparian zones along the upper catchment areas of the Siem Reap River and its tributaries. These restoration efforts will complement the efforts under the ER-IP project by expanding the area of riparian zones, as well as adding addition efforts in water source areas that extend beyond the immediate areas surrounding springs, with more targeted focus on reducing runoff and erosion on hillslopes and riverbanks as well as improving the concentration of soil organic carbon — thereby reducing flood risk, improving groundwater recharge, and improving soil moisture and nutrients. Such actions will also increase carbon stocks, contributing to Cambodia's mitigation NDCs. Rehabilitation efforts will centre around local/endemic species with global significance and aimed at mimicking the surrounding habitats. Where possible, restoration efforts will focus on High Conservation Value Areas (HCVAs), aimed at improving habitats and creating biodiversity corridors within different landscape mosaics. Note that the planting densities reflect the targeted overall density after restoration, and the actual number of seedlings required will vary depending on level of degradation at each site. For example, heavily degraded land will be targeted for full active restoration through high-density tree planting, while light–moderately degraded land will be targeted for assisted natural regeneration involving lower density planting and increased focus on protection and management. Monocultures will be avoided, instead a diverse range of trees species will be selected, targeting indigenous trees that represent the natural species assemblage. Where possible, preference will be given to species with high value to communities, for example in terms of the provision of non-timber forest products (NTFPs). Planting efforts will prioritise using labour from local communities wherever possible, creating seasonal employment opportunities, including at least 30% women.

28. Direct restoration efforts will be complemented by other NbS, including hybrid solutions for flood control and water storage that will benefit local communities. The project will identify suitable options for low-impact water harvesting ponds that work within the natural ecosystems. This supplementary water supply is considered critical for maintaining supply to farmers in the surrounding landscape during the dry season. Such options may be replicated in other locations, particularly those important to the tourism industry.

29. The targeted intervention area includes the PKNP, which hosts the headwaters of 36 tributaries to the Siem Reap River and holds significant cultural value to the people of Cambodia[7][14]. Implementation will target government land where land tenure rights are clear, and implementation would not be delayed by the finalisation of ESMP and FPIC processes during the first year of implementation. While target communes have been identified through the baseline studies conducted during project preparation, the detailed spatial map developed for the SSR Watershed Management Plan (Output 1.4) will be used to demarcate specific sites for the on-the-ground implementation of NbS that will build the climate resilience of local communities. For both the NbS and agroforestry, it will be important to ensure resilience of the proposed interventions in the long term. To this end, proposed interventions have been assessed for their suitability under future climate scenarios, adjusting the proposed approach for each intervention as needed. For example, the species used for restoration and/or agroforestry have been selected that demonstrate a level of tolerance to the potential temperature and rainfall regimes of the area.

- Activity 2.1.1: Restore degraded dry deciduous, evergreen, and semi-evergreen forest ecosystems to reduce runoff and erosion, as well as improve the concentration of soil organic carbon

- Activity 2.1.2: Restore degraded riparian zones along the upper catchment areas of the Siem Reap and Rolous Rivers and their tributaries

- Activity 2.1.3: Rehabilitate low-impact rainwater harvesting ponds that provide multiple benefits for ecosystem and agricultural resilience and water security

Output 2.2: Sustainable landscape rehabilitation implemented through community-based agroforestry initiatives focusing on diverse, high-value tree species that benefit agricultural livelihoods and enhance carbon stocks

30. The implementation of NbS will be further supported through the introduction of 3,000 ha of community-based agroforestry to supplement restoration efforts in the agroecological landscape of the SSR Watershed. This intervention aims to restore ecological functions in areas where forest cover has been lost to agriculture, by integrating high-value and multi-purpose tree species into existing farming systems. The approach enhances key ecosystem services — such as water regulation, soil stability, enhanced water infiltration, and biodiversity conservation — while supporting sustainable agricultural productivity and climate resilience. This improves groundwater recharge, ensuring more consistent water availability for both crops and local communities. These benefits have been recognised by farmers in the SSR watershed who have trialled agroforestry practices.

31. Farmers face several challenges related to tree production, including limited knowledge of best agroforestry practices, pest and disease outbreaks, unpredictable weather conditions, and water scarcity. Poor soil quality in certain areas reduces tree growth rates, requiring additional soil enrichment techniques. Market access issues also discourage some farmers from investing in agroforestry, as they struggle to sell timber, fruits, or nuts at competitive prices. Additionally, land tenure insecurity in some target locations prevents farmers from making long-term investments in tree cultivation.

32. The project will support farmers by providing technical training on agroforestry management, including best practices for tree planting, pruning, soil improvement, and pest control. These initiatives will target high-value tree species that provide multiple benefits, including the provision of non-timber forest products (NTFPs), regulating ecosystem services (particularly for water and soil quality), and carbon sequestration. By focusing agroforestry efforts on high-value tree species, the project will incentivise the scaling and maintenance of agroforestry initiatives, thereby disrupting the drivers of degradation linked to the maladaptive expansion of agriculture into forest areas (in conjunction with improved agriculture under Component 3). Technical support will be provided to local farmers on suitable agroforestry practices, along with the provision of seedlings and other required inputs.

33. The implementation of agroforestry will be further supported through several other activities under the project including: i) the establishment of community nurseries (Activity 3.3.1) to improve access to high-quality tree seedlings; ii) rehabilitation of rainwater harvesting ponds (Activity 2.1.3) to help manage water shortages and enable sustained irrigation; and iii) advisory services on market access, which will include the formation of cooperative structures, enabling farmers to benefit from economies of scale. The inclusion of women not only in agroforestry activities themselves, but in capacity development across the value chain, will ensure that this output is gender responsive, directly building the resilience of vulnerable women in rural communities. The scaling of agroforestry practices across the TSB and further abroad will be further supported by redirecting government programmes where possible, as well as scaling through future donor projects. The potential for scaling will also be further enabled by the innovative finance mechanisms developed under Output 2.3, as well as the knowledge and learning systems developed under Outcome 4.

- Activity 2.2.1: Establish agroforestry demonstration sites in underserved communes
- Activity 2.2.2: Host an awareness campaign for local farmers in the SSR Watershed to promote community-based agroforestry
- Activity 2.2.3: Provide technical support to local farmers on suitable agroforestry practices, including providing seedlings and other required inputs
- Activity 2.2.4: Knowledge exchange through open days for farmers and extension service providers from across TSB, enabling the replication of agroforestry practices
- Activity 2.2.5: Provide advocacy support and recommendations to redirect government programmes towards the scaling of agroforestry practices across the TSB as well as other catchments within the country

Output 2.3: Sustainable financing mechanism established and operational within the SSR Watershed to promote public-private-community partnership investments and support long-term financing of community-led NbS initiatives

34. To ensure the long-term sustainability and replication of watershed management, restoration and conservation efforts, the project will establish scalable and lasting finance mechanisms to mobilise resources for ongoing investment in climate-responsive watershed management, prioritising the wide-scale implementation of nature-based solutions. This requires innovative solutions that engage the private sector alongside the public sector and local communities to create lasting and mutually beneficial finance mechanisms. The financial mechanism will be composed of two elements — those that finance ongoing restoration and those that incentivise the uptake of sustainable livelihoods practices — integrated under a single blended finance mechanism. This process will leverage the enabling environment created under Outcome 1 of both this project and the ER-IP project to engage with the diverse range of necessary stakeholders to achieve the project objectives.

35. Given the close ties between biodiversity, natural capital and climate change adaptation, Output 2.3 will adopt a blended finance approach, drawing resources from different sources[8] to meet the complementary objectives of biodiversity, land degradation and climate adaptation, while ensuring that mechanisms are coordinated and avoiding overlap. Blended finance has been identified as an effective approach for scaling sustainable watershed management by strategically combining public, private, and climate finance to mobilise greater investment while reducing financial risk for private sector participation. By using public funds to create enabling conditions—such as policy support, capacity building, and initial restoration efforts—the approach attracts private investment that might otherwise be deterred by high upfront costs or uncertain returns. Additionally, by integrating biodiversity finance, payment for ecosystem services, and corporate sustainability contributions, blended finance ensures long-term financial sustainability while aligning conservation efforts with economic incentives, ultimately driving scalable and impactful climate resilience solutions. The project will undertake a structured process to identify and develop pathways for a blended finance mechanism that can sustainably fund watershed management at the landscape scale. As the central pillar of the Cambodian economy, the private sector will be a key stakeholder in any sustainable finance mechanism, and will be closely engaged throughout the development process to identify opportunities for partnership and investment. To this end, the final framework will incorporate various financial models being developed in Cambodia, including the payment for ecosystem services model under the ER-IP project, and as well as innovative new mechanisms to be developed under this project (discussed below). Specific focus will be given to inclusive access, ensuring that the resulting mechanisms are accessible to, or at least benefitting the most vulnerable groups.

36. As part of this sustainable finance mechanism, the uptake of resilient practices will be incentivised through the introduction of complementary finance mechanisms specifically targeting the sustainability and scaling potential of agriculture- and natural resource-based enterprises. There is currently a rapidly evolving financial landscape for sustainable development initiatives within Cambodia, with efforts underway to create a national framework for mobilising investment for implementing initiatives on-the-ground. At the local level, the project will seek to create partnerships between the public and private sectors, while also involving local communities through livelihood/cultural-based financing options (linking to the livelihood support described above). This will include a focus on gender equality in access to finance. At the national-level, the project will provide a framework to redirect budgetary funding flows and other government-led funding mechanisms — including engagements with international finance institutions and programmes — with the objective of mobilising resources towards the national goal of reaching upper middle-income status by 2030.

37. Key to this output is the establishment of a Sustainable Livelihood Innovation Facility (SLIF) to bolster the long-term sustainability and scaling of enterprises in key sectors — including agroforestry, non-timber forest products (NTFPs), crafts, ecotourism, and sustainable agricultural products — within rural Cambodia. Under the SLIF, MoE will put out a call for proposals for innovative initiatives that unlock local investment potential while using donor funds solely as catalytic support over a three-year implementation phase, after which project support is phased out. This approach leverages donor funds as an initial catalyst for innovation rather than a permanent subsidy and fosters local capacity through community-led financial instruments, ensuring the sustainability of the enterprises supported, with supported enterprises becoming self-sufficient in the long term.

38. The SLIF call for proposals will target innovative proposals that:

- leverage partnerships between private investors and rural communities (as well as public sector actors where suitable) to drive investment that directly strengthen community livelihood resilience;
- unlock or crowd in additional finance by establishing partnerships with finance institutions, attracting private capital, or establishing revolving fund mechanisms;
- are gender responsive and improve access to finance for women and other vulnerable groups;
- include mechanisms for providing technical assistance and training for communities to engage in private partnerships;
- incorporate a strong monitoring component and opportunities for performance-based incentives;
- have potential to link with or incorporate digital technologies and/or are complementary with NbS approaches; and
- provide cofinance, including potential investment from other donors or direct in-kind support for TA activities.

39. All proposals should also include a clear exit strategy for creating self-sustaining enterprises, with project funds primarily going to community development. During the preparation of the proposal, several potential instruments were identified through stakeholder engagements. While the call for proposals will include scope for innovation, preliminary options include matching grants with a phased exit strategy; credit saving groups and revolving funds; and mini trust funds for conservation enterprises.

40. Throughout this process, the Ministry of Economy and Finance will be closely engaged to mobilise larger investors beyond the local private sector, including international financial institutions. The design of the financial mechanisms considers specific exit strategies for the project, ensuring that the proposed mechanisms are self-sustaining in the long term – including through ensuring local ownership alongside effective management arrangements and transparent fiscal processes for directing income to impactful upstream investments[9]. In the absence of such efforts to mobilise private sector finance towards climate change adaptation, a key opportunity for crowding in the diverse investment needed to bridge the finance gap for sustainable development in Cambodia will not be fully realised.

41. The actions under this initiative will coordinate closely with the efforts through the project under the ER-IP project to create cohesive, complementary finance mechanisms that maximise potential impact for the region. Demonstrating the effectiveness of the financial mechanisms will create the evidence base required to catalyse replication of the models at scale. Moreover, by designing the financial mechanisms with the principle of adaptive management, they will generate valuable lessons that can be used to continually refine the financial mechanisms going forward. To this end, the project will aim to have the models in place by the end of year four of the project, accompanied by strong monitoring, evaluation and learning systems (Component 5), building on the knowledge management systems developed under Component 4.

- Activity 2.3.1: Conduct a comprehensive assessment of potential funding sources, including public budgets, private sector investments, biodiversity finance, and climate finance.
- Activity 2.3.2: Organise multi-stakeholder roundtables and policy dialogues
- Activity 2.3.3: Develop innovative finance mechanisms for sustainable enterprise growth
- Activity 2.3.4: Design a blended finance framework for climate-responsive watershed management in the TSB
- Activity 2.3.5: Develop a policy and institutional framework for sustainable finance mechanisms

Activity 2.3.6: Develop an implementation roadmap for opertaionalising a blended finance mechanism in the SSR Watershed

Component 3: Resilient natural resource-based livelihoods

(Total Cost: US$ 5,411,828; GEF project grant requested: US$ 1,607,994; Co-financing: US$ 3,608,225)

Outcome 3: Increased adoption of climate-resilient natural resource-based livelihoods through training, and market development

42. A key element of the proposed approach lies in the third pillar: *people*. Ultimately, the project aims to build the resilience of local communities while conserving the natural and cultural heritage that underpin local societies. To achieve this, it is essential that people remain at the core of all aspects of project design. Under Component 3, the project will support communities in strengthening the resilience of natural resource-based livelihoods while also developing associated value chains and markets. This approach will incentivise the adoption of improved, climate-resilient practices — particularly for women and other vulnerable groups. Furthermore, livelihood development will enhance the impact of nature-based solutions under Component 2 by disrupting the current cycles of degradation in the TSB and improving ecosystem service provision — an outcome that would not be possible without the catalytic funding provided by the proposed project. Similarly, the sustainability and scaling potential of livelihood activities will be strengthened by the blended finance mechanism under Component 2, together with the complementary Sustainable Livelihood Innovation Facility under Output 3.4 of this component. All outputs under this outcome will be subject to the Environmental and Social Impact Assessment and of the subsequent Environmental and Social Management Plan.

Output 3.1: Smallholder farmers trained in climate-resilient agricultural practices that improve productivity under water-stressed and flood-prone conditions

43. Under this Output, the project will train vulnerable smallholder farmers in climate-resilient agricultural practices to safeguard agricultural productivity under future climate conditions. This will include conservation agriculture techniques that improve soil health, reduce erosion and runoff, and conserve water — such as reduced tillage, mulching, intercropping, and crop rotation. To further support these practices, the project will promote the use of flood- and drought-tolerant crop varieties,

selected based on local and seasonal risks, as well as crop diversification. Diversifying crops will help farmers mitigate the risk of crop loss, improve soil fertility, and ensure a stable and varied supply of food and income. Additionally, farmers will receive training on using seasonal forecasts and agricultural advisories produced by MoWRAM, enabling them to make informed decisions about crop selection and planting time each season. This initiative will be closely coordinated with the GCF-funded PEARL project, which promotes climate-resilient agriculture in the TSB — adding the specific focus of leveraging support for improved agriculture to reduce the drivers of degradation linked to unsustainable livelihood practices.

44. The proposed project will focus on food-producing crops and trees. Table 8 summarises the population and farming demographics of each of the target communes. Assuming each farmer in the target area has 1.5 ha of agricultural land for cultivation, there are approximately 37,500 ha of agricultural land in the target area. The project is targeting 20,000 ha of agricultural land, resulting in the participation of approximately 13,350 farmers (50% women). The 13,350 farmers selected for participation will be those who have neither previously received nor are currently receiving support from other CRA initiatives, such as the GCF PEARL project.

Table 8. Summary of households and farming plots in the target communes

					15	16
1	Angkor Thum	Chob Ta Trav	4,236	3,050	726	1,089
		Leang Dai	11,564	8,326	1,982	2,974
		Peak Snaeng	6,316	4,548	1,083	1,624
		Svay Chek	7,038	5,067	1,207	1,810
2	Banteay Srei	Khnar Sanday	8,262	5,949	1,416	2,125
		Khun Ream	7,374	5,309	1,264	1,896
		Preah Dak	8,952	6,445	1,535	2,302
		Rumchek	3,238	2,331	555	833
		Run Ta Aek	7,497	5,398	1,285	1,928
		Tbaeng	8,415	6,059	1,443	2,164
3	Soutr Nikom	Chan Sar	10,364	7,462	1,777	2,665
		Khnar Pou	6,205	4,468	1,064	1,596
		Popel	11,681	8,410	2,002	3,004
		Ta Yaek	13,806	9,940	2,367	3,550
4	Svay Leu	Khnang Phnum	4,711	3,392	808	1,211
5	Varin	Prasat	5,384	3,876	923	1,384
		Srae Nouy	20,749	14,939	3,557	5,335
			145,792	**104,970**	**24,993**	**37,489**
	Project target (as a subset of the available land)				**~13,350**	**20,000**

45. Training for smallholder farmers will follow the Farmer Field School (FFS) model, which emphasises experiential learning through hands-on demonstrations and interactive group sessions. The training will be structured as a cascading capacity-building approach consisting of three phases. Phase 1 involves capacity building for government extension officers, followed by training for lead farmers in Phase 2, and training for follower farmers in Phase 3.

- Activity 3.1.1: Establish demonstration plots to showcase climate-resilient agriculture practices and technologies

- Activity 3.1.2: Train government extension officers on climate-resilient agricultural practices and technologies to safeguard productivity under a changing climate

- Activity 3.1.3: Train vulnerable smallholder farmers on climate-resilient agricultural practices and technologies to safeguard productivity under a changing climate

- Activity 3.1.4: Facilitate linkages between smallholder farmers and certified distributors of climate-resilient seeds

Output 3.2: Enhanced commodity value chains and improved market linkages for key agricultural products and NTFPs

46. Communities in the target area face several market challenges for sustainably produced agricultural and NTFP commodities, restricting their economic potential and exacerbating unsustainable and maladaptive practices. These challenges include:

- Weak market coordination among producers, limiting their ability to collectively manage seasonal production cycles and price fluctuations. This results in oversupply during peak seasons — leading to price drops and scarcity in off-seasons, which disrupts income stability.

- Informal market linkages, resulting in commodity sales through unstructured channels, such as middlemen, rather than through well-regulated supply chains that offer better market stability and pricing.

- Lack of standardised branding or certification makes it difficult for consumers or buyers to distinguish sustainably produced commodities from conventionally produced goods, limiting their ability to command premium prices.

- Lack of traceability systems makes it impossible to track a product's origin and production methods, which is increasingly important for buyers, especially premium markets that prioritise food safety and sustainability.

- Poor post-harvest practices reduce the quality and quantity of products available for sale, leading to financial losses for producers and limiting their ability to compete in higher-value markets.

47. Without formal market recognition through labelling, traceability, and certification, rural producers struggle to access high-value markets, such as organic food retailers or export opportunities. Additionally, value chain constraints limit producers' capacity to meet quality standards for formal markets, supermarkets, or export buyers. As a result, they are often forced to sell at lower prices in undifferentiated markets where prices are lower and more volatile, reducing their profitability and incentives to maintain sustainable, climate-resilient agroecological practices.

48. To catalyse further uptake and long-term sustainability of agroforestry initiatives (under Component 2) and climate-resilient agriculture (under this Component), the project will create an enabling market environment for sustainably produced products. This will be achieved by supporting community-based enterprises to enhance the commodity value chains of key agricultural products and NTFPs (such as cashews, which are an important product in the region), including facilitating market links and value addition practices. Support will include active training on value-add practices, market access and business management. This will include the targeted development of opportunities for women, youth and other vulnerable or marginalised groups. Consideration will also be given to the climate resilience of the value-chain development activities themselves, ensuring that the nature of the activities are suited to future climate impacts. Business models for NTFP value chains will be developed and implemented in the target markets, focusing particularly on women-led enterprise development. Opportunities for introducing incentives for sustainably sources NTFPs will be explored, alongside providing advisory services and facilitating market access. . The incentives will focus on strengthening market linkages between NTFP producers and the tourism sector, enabling communities to access more stable, higher-value markets. This will be done through structured mechanisms such as business-to-business forums, matchmaking events, and digital platforms, which will allow producers to secure fair contracts and benefit from transparent pricing, input support, and logistical assistance. Complementary measures — including branding and storytelling to highlight the cultural and environmental value of NTFPs, promotional partnerships with hotels and tourism operators, and eco-tourism experiences — will enhance visibility and create diversified sales opportunities. Together, these incentives will increase household incomes, promote sustainable harvesting practices, and foster long-term, mutually

beneficial partnerships that align conservation with economic resilience. This activity will leverage the growing demand in Cambodia and globally for environmentally sustainable and socially responsible products[12]17.

The private sector is a key stakeholder in this activity, and will be closely engaged throughout to identify opportunities for creating partnerships between community entities and commercial private enterprises.

- Activity 3.2.1: Develop business models for commodity value chains of key agricultural products and NTFPs in the target markets, focusing primarily on community-based and women-led enterprise development

- Activity 3.2.2: Train local communities to implement business models, including training on value-add practices, market access, and business management

- Activity 3.2.3: Link farmers to commodity off-takers and provide advisory services to facilitate market access for climate-resilient agricultural products and NTFPs

- Activity 3.2.4: Introduce incentives for sustainably sourced NTFPs

Output 3.3: Community-based enterprises established to facilitate long-term, sustainable support to the implementation of NbS

49. The market development under Output 3.2 will be complemented by the establishment of community-based enterprises — particularly targeting vulnerable women's groups. Potential enterprises identified to date include seedling nurseries to supply suitable indigenous trees for restoration initiatives and agroforestry, as well as seed multiplication and distribution businesses for climate-resilient and diversified crops. Options will also be explored for establishing restoration-focused businesses that implement and maintain NbS in the target areas (linking with the PES model from Component 2), as well as expanding the potential for village- and eco-tourism initiatives that incentivise the sustainable management of natural resources. Training will be provided to support communities in creating self-sustaining businesses that facilitate investments at scale. Extensive stakeholder consultations will be held during the next phase of development to identify entry points for livelihood support — including options for developing strong partnerships with community-based enterprises and the private sector — as well as to ensure equitable distribution of benefits, including to women and other marginalised groups.

- Activity 3.3.1: Establish community-based nurseries to supply suitable trees for the restoration and agroforestry initiatives

- Activity 3.3.2: Support the development of local seed multiplication and distribution businesses for climate-resilient and diversified crops

- Activity 3.3.3: Support the establishment/strengthening of community-based businesses that complement and support the implementation and maintainancemaintenance NbS in the target areas

- Activity 3.3.4: Train local community groups on the establishment of village- and eco-tourism initiatives that incentivise the sustainable management of natural resources

Component 4: Knowledge, research and Innovation

(Total Cost: US$ 2,512,273; GEF project grant requested: US$ 767,040; Co-financing: US$ 1,721,183)

Outcome 4: Innovation in the management of watersheds across Cambodia enabled through high-quality knowledge, research, and learning

50. The proposed project intends to facilitate transformational, behavioural change on the ground in Cambodia, promoting climate change adaptation efforts while demonstrating their benefits to communities and industries across the TSB. This change will be underpinned by robust data generated through project activities that will promote innovation during the implementation of activities under Components 2 and 3 — which will be monitored under Component 5 — as well and new research and innovation under Outputs 4.1 and 4.2. This will include a strong research component, alongside knowledge management and

outreach strategies. Activities under this output will be initiated early in the implementation period and will directly feed into the implementation of the other components.

51. The outcome of Component 4 will be high-quality knowledge that is generated, managed and disseminated both nationally and internationally to enable and promote the scaling of interventions to other watersheds across Cambodia and the surrounding region. This will catalyse additional investments in integrated watershed management, restoration and conservation, replicating success models to multiple the environmental and climate resilience benefits achieved through Component 2.

Output 4.1: Knowledge of climate change impacts on ecosystem service provision in the SSR watershed enhanced through assessments, research and education to improve understanding of natural and cultural assets of the area, and their role in supporting local livelihoods

52. Cambodia's forests provide critical ecosystem services, including water flow regulation, erosion control, and biodiversity conservation, which underpin the country's economy. Agriculture, which relies heavily on these services — particularly water regulation, erosion control, and nutrient retention — accounted for 22% of Cambodia's GDP in 2024. Similarly, tourism and ecotourism, which depend on the country's rich biodiversity in forest landscapes contributed approximately 9.4% to GDP that year.

53. Recognising the importance of these ecosystem services, the Cambodian government is increasingly prioritising their valuation as a key input for improved decision-making on protected area, forests and natural resources. This commitment is reflected in Cambodia's Natural Capital Accounts (NCA) initiative. The Ministry of Environment (MoE) and Ministry of Water Resources and Meteorology (MoWRAM) have expressed strong interest in integrating ecosystem service values into decision-making related to forest conservation, protected areas, and watershed management. Proper valuation not only strengthens protection efforts but also helps address the root causes of forest degradation. However, the widespread application of ecosystem service valuation remains limited due to data gaps, the absence of standardised methodologies, and institutional and technical capacity constraints[13]18. Consequently, economic analysis has played a limited role in shaping forest management and financing strategies in Cambodia.

54. A key recommendation from the World Bank study, *Valuing the Ecosystem Services Provided by Forests in Pursat Basin, Cambodia* was the development of a national roadmap for scaling up ecosystem service valuations using a National Capital Accounting (NCA) approach. Establishing an NCA Roadmap would have several advantages, including: i) a standardised methodology for valuing ecosystem services and integrating the data into decision-making; and ii) more cost-effective and reliable data collection, analysis, and access through a coordinated NCA framework[14]19.

55. This output aims to advance Cambodia's Natural Capital Accounts, using the System of Environmental-Economic Accounting (SEEA). By doing so, it will help clarify the linkages between ecosystem services provided by Cambodia's forests and their benefits to society. Additionally, it will establish an evidence base for NCA in the country, guiding integrated planning, decision-making and public budget allocation across multiple sectors.

56. To improve the climate-resilience and adaptation impact of future investments in ecosystem restoration, watershed management and agricultural development, the project will partner with local research institutions to investigate tailored solutions for the local biophysical conditions and socioeconomic contexts of the SRW Watershed. These studies will consider several key research themes, including: i) suitable native species for ecosystem-based adaptation and improve understanding of their roles in maintaining the function of the local ecosystem services[15]20; ii) the function of wetlands and riverbank stabilization techniques in flood mitigation, sediment control, and ecosystem regeneration; iii) multi-strata agroforestry systems and the role of native species in improving soil fertility, biodiversity, and climate resilience; and iv) suitably resilient cultivated species (such as crops, fruits and vegetables) and farming techniques that strengthen climate resilient agriculture practices, improve competitiveness of local products, and support local livelihood. To this end, the project will seek to partner with institutions such as the Royal University of Agriculture, and Preak Leap National College of Agriculture — both of which are actively engaged in research and innovation in the area of climate smart agriculture — to support the agricultural studies.

57. Finally, the project will consolidate the data, insights, and findings generated through the biophysical assessments and ecosystem services valuations into targeted knowledge products that support evidence-based policy and investment decisions on forest and watershed management in the SSR Watershed and Cambodia's broader forest landscapes. The knowledge generated through this output will be integrated into the knowledge management system being developed under Output 4.3, which in turn informs the DST under Output 1.1. By doing so, this knowledge will inform future decision making. Moreover, the project management unit, guided by the M&E Specialist, will continually assess the lessons learned through these valuations and use the information to inform annual work plans to adaptively manage activities under Components 2 and 3 of the project.

- Activity 4.1.1: Develop a government-endorsed ecosystem services valuation methodology and NCA Roadmap
- Activity 4.1.2: Conduct an economic valuation of ecosystem services in the Steung Siem Reap Watershed
- Activity 4.1.3: Conduct research into climate-resilient restoration and agriculture practices suited to the local context of the Steung Siem Reap Watershed
- Activity 4.1.4: Develop knowledge products for informed decision-making

Output 4.2: Innovative digital technologies developed for climate smart agriculture and agroecology value chains to enhance community and ecosystem resilience in the TSB

58. This output aims to enhance the integration of digital technologies into agroecological value chains to improve market access, traceability, and sustainability certification for smallholder farmers. By leveraging digital solutions, farmers will gain greater transparency in value chains, better access to premium markets, and improved compliance with sustainability standards, ultimately increasing their incomes and market competitiveness.

59. Through a feasibility and needs assessment, the project will identify suitable digital solutions, assess farmers' digital readiness, and map existing initiatives and potential technology partners. Based on these findings, a Challenge Fund will be established to incentivise local innovation and private sector engagement in digital agroecology solutions – targeting local and export markets. Private entities, NGOs and CSOs will be invited to submit proposals for the development of innovative digital solutions for the agroecological value chain. The Challenge Fund will be structured with two funding windows, one targeting export markets (rice, cashews, mangos) and the other focused on local tourism markets for agricultural and NTFP products. Proposals will go through a two-phase selection process: first, concept submissions leading to six shortlisted candidates, and then detailed proposal development supported by small grants. At least one winning initiative from each window will be awarded a larger grant, disbursed in tranches linked to performance milestones, alongside project-provided technical assistance to ensure solutions are fully integrated into national systems such as KAS. Selection will be guided by mandatory criteria, including sustainability, strengthened market linkages, digital traceability, and farmer inclusion, while also encouraging innovations such as certification facilitation, financial services access, and integration with wider value chain actors. This structure ensures transparent competition, strong accountability, and alignment with both local needs and long-term market development goals.

60. By strengthening digital market linkages, promoting traceability, and supporting farmer-focused technological capacity-building, this output will enhance smallholder farmers' resilience to climate and economic shocks. Digital tools will enable better decision-making, reduce transaction costs, and facilitate access to financial services, contributing to more climate-resilient and economically sustainable farming systems.

- Activity 4.2.1: Conduct a feasibility and needs assessment for digital technologies, including digital traceability and market access systems
- Activity 4.2.2: Establish the challenge fund for digital agroecology solutions

Output 4.3: Knowledge management and outreach strategies developed to facilitate the upscaling of climate adaptation interventions nationally, regionally, and globally

61. Linking closely to the robust decision-support tool (DST) developed under Output 1.1, the project will establish an integrated knowledge management system (KMS) managed by the Ministry of Environment at the national level. This KMS will be embedded within Cambodia's Environmental Management Information System (CEMIS) and designed to be interoperable with other sectoral knowledge systems, including the agricultural knowledge systems being developed under the PEARL project as well as UNDP's other national and global knowledge platforms.

62. The platform will serve as the central repository for capturing, storing, and disseminating project research outputs, lessons learnt, and best practices, thereby enhancing decision-making through cross-sectoral collaboration. In addition, a detailed, gender-responsive communication strategy and action plan will be developed to target local communities, government officials, and private sector stakeholders through various media channels. This integrated approach will facilitate the replication and scaling of climate adaptation interventions both nationally and globally.

- Activity 4.3.1: Establish a knowledge-management system to disseminate project-generated knowledge
- Activity 4.3.2: Develop an online platform linked with national knowledge hubs and UNDP's global networks
- Activity 4.3.3: Develop a detailed, gender-responsive communication strategy and action plan
- Activity 4.3.4: Conduct an outreach programme to share knowledge and lessons learnt

Output 4.4: Scaling strategy developed to replicate IWRM practices across other provinces of the TSB

63. While the project will focus its direct interventions in Siem Reap and the Phnom Kulen landscape, its long-term objective is to catalyse the replication of Integrated Watershed Management (IWM) practices across other provinces within the Tonle Sap Basin (TSB). To achieve this, the project will develop a scaling strategy that outlines clear pathways for expansion, including the specific actions, institutional responsibilities, and potential finance mechanisms required to sustain and replicate project successes.

64. The scaling strategy will be designed to integrate into existing national and provincial government programmes, ensuring that it aligns with Cambodia's broader environmental and economic policies. Additionally, it will leverage the knowledge management system (KMS) developed under Output 4.3, ensuring that best practices, decision-support tools (DSTs), and relevant policy frameworks are accessible to stakeholders across multiple governance levels. Through technical assistance, the project will also equip key government ministries with the necessary expertise and resources to incorporate IWM principles into future watershed management programs. By establishing clear institutional roles, securing financial pathways, and embedding adaptive management practices, the scaling strategy will create a roadmap for sustainable and long-term replication of IWM practices across the TSB.

- Activity 4.4.1: Identify national and local government programmess for scaling and integrate them into the KMS
- Activity 4.4.2: Develop a gender-responsive scaling strategy based on lessons learnt from the project
- Activity 4.4.3: Provide technical assistance to government ministries for scaling IWM approaches

Component 5: Monitoring, Evaluation and Learning

(Total Cost: US$ 868,152; GEF project grant requested: US$ 197,541; Co-financing: US$ 443,268)

Outcome 5: Lessons learnt curated through project M&E and disseminated both nationally and internationally to promote the scaling of interventions to other watersheds across Cambodia and the surrounding region

65. By targeting on-the-ground implementation in the SSR watershed, this will serve as a flagship project that provides a unique opportunity to catalyse replication given that it hosts the globally renowned Siem Reap/Angkor Archaeological Area, the presence of which will magnify the project's innovations, behavioural change, and learnings on the co-dependency between watershed ecosystem services, human settlements, and economic/cultural activities nationally/internationally. While Component 4 will engage in new research and innovation — as well as establishing a KMS to collate and disseminate knowledge — actions under Component 5 will ensure that the proposed project is smoothly implemented, and that all lessons learnt through this implementation are adequately monitored, evaluated, and integrated into the KMS. The resultant spotlight effect will lead to systems transformation and assist in the project's capacity-building replication efforts on restoration-focused land management practices.

Output 5.1: Monitoring, Evaluation and Learning system established to collect and curate lessons learnt from project activities

66. To ensure that project interventions are measurable, adaptive, and scalable, a structured Monitoring, Evaluation, and Learning (MEL) system will be developed. This system will integrate with the system being developed under ER-IP, bringing the added dimensions needed for tracking climate change adaptation-related results. The system will define clear processes, roles, and responsibilities for tracking environmental

and socio-economic outcomes, ensuring that lessons learnt inform both adaptive management in target sites and the replication of successful approaches across Cambodia and beyond. The MEL framework will align with UNDP and GEF policies, systematically collecting, analysing, and curating data, while integrating findings into the Knowledge Management System (KMS) under Output 4. The system will also track environmental and socio-economic benefits, assess progress against the Gender Action Plan and Stakeholder Engagement Plan, and ensure compliance with environmental and social safeguards. By embedding a structured learning mechanism, this output will facilitate evidence-based, gender responsive decision-making, enabling policymakers and practitioners to refine watershed management strategies and scale up climate adaptation interventions effectively

- Activity 5.1.1: Design the Monitoring, Evaluation, and Learning (MEL) Framework and System
- Activity 5.1.2: Develop Standard Operating Procedures (SOPs) for Data Collection, Analysis, and Reporting

Output 5.2: Project implementation coordinated and measured through proactive steering committee functions, inclusive monitoring and evaluation, and an operational environmental and social management mechanism

67. This output ensures effective project coordination, adaptive management, and compliance with environmental and social safeguards. A Project Steering Committee (PSC) will oversee strategic direction and monitoring, while a Project Management Unit (PMU) will manage day-to-day implementation. The project will operationalise the Gender Action Plan, Stakeholder Engagement Plan, and Indigenous Peoples Plan, ensuring inclusive participation, particularly for Indigenous Peoples and Local Communities (IPLCs).

68. Monitoring and evaluation will track progress against key indicators, integrating findings into the Knowledge Management System (KMS) to support learning and scaling. Environmental and social risks will also be regularly assessed and mitigated, ensuring compliance with safeguards. Finally, independent mid-term and terminal evaluations will provide external validation, guiding necessary course corrections to maximise impact and sustainability.

- Activity 5.2.1: Establish a Project Steering Committee and Project Management Unit.
- Activity 5.2.2: Implement the Gender Action Plan, Stakeholder Engagement Plan and undertake a review of the Social Environment Safeguard and project risk management.
- Activity 5.2.3: Monitor project activities and report on results.
- Activity 5.2.4: Conduct independent mid-term review and terminal evaluation and implement mid-term and terminal evaluation.

Changes in Outcome and Output wording, structure and budget from PIF stage

1.3. Updated Tonle Sap Basin watershed management plan integrating future climate risk and resilience needs.	1.3. Updated Tonle Sap Basin Watershed Restoration, Rehabilitation, and Conservation Plan integrating future climate risk and resilience needs	Name of the Plan updated to align with ongoing work by MoE.
▪ 2.3. Payment for ecosystem services scheme established and operational within the SSR watershed to support long-term financing of community-led NbS initiatives. 3.4: Innovative finance mechanism developed to	▪ 2.3. Sustainable financing mechanism established and operational within the SSR Watershed to promote public-private-community partnership investments and support long-term financing of community-led NbS initiatives	2.3 and 3.4 were merged into a single innovative finance output, as per recommendaiton from GEF-Sec Output wording was adjusted to account for shift away from a specific focus on PES as the targeted mechanism given ongoing efforts under ERIP project, instead focussing more broadly on sustainable finance, as well as to integrate the PPCP investments from 3.4.

promote public-private-community partnership investments in NbS		
Outcome 3: Increased adoption of climate-resilient natural resource-based livelihoods through training, market development and innovative finance mechanisms	Outcome 3: Increased adoption of climate-resilient natural resource-based livelihoods through training, and market development	Wording adjusted to reflect the shift of the finance mechanism to Outcome 2
3.1. Smallholder farmers trained in climate smart agricultural practices that improve productivity under water-stressed conditions.	3.1. Smallholder farmers trained in climate-resilient agricultural practices that improve productivity under water-stressed and flood-prone conditions	Output wording adjusted to more clearly describe the climate hazards.
2.4. Scaling strategy developed to replicate IWRM practices across other provinces of the TSB.	▪ 4.4. Scaling strategy developed to replicate IWM practices across other provinces of the TSB	Output shifted from Outcome 2 to Outcome 4 to better encompass the full scope of the required scaling strategy, which covers the full range of IWM and CRA practices and not just NbS. IWRM changed to IWM in line with local terminology.
4.2. Innovative technologies for climate-resilient agriculture, agroecology and soil conservation identified to enhance community and ecosystem resilience in the TSB	▪ 4.2 Innovative digital technologies developed for climate smart agriculture and agroecology value chains to enhance community and ecosystem resilience in the TSB	Output wording adjusted to add clarity on the specifics of the output.
5.1. Monitoring and Evaluation programme established to collect and curate lessons learned from project activities.	▪ Monitoring, Evaluation and Learning system established to collect and curate lessons learnt from project activities ▪	Monitoring and Evaluation Programme changed to Monitoring, Evaluation and Learning System to highlight the importance of the learning component in the project.
Outcome 1: 658,505 Outcome 2: 2,728,092 Outcome 3: 1,754,446 Outcome 4: 940,722 Outcome 5: 284,625	Outcome 1: 693,071 Outcome 2: 3,100,744 Outcome 3: 1,607,994 Outcome 4: 767,040 Outcome 5: 197,541	Outcome 4 Budget reduced by US$200,000 to redistribute funds to increase action on the ground under outcomes 2 and 3. On GEF recommendation, Output 3.4 was merged into 2.3, and budget was shifted to accommodate this. Outcome 5 budget was also reduced based on needs form detailed budgeting, and reductirbuted to other components to increase on-the-ground impact.

Responses to LDCF Council and STAP Comments

69. The table below details how comments received during the preparation of PIF were accounted for during the PPG phase.

LDCF Council	
Canada Comments • The project presents a strong landscape approach and provides confidence in contributing to a broad set of agri-food outcomes. However, we would welcome more clarity on the approach to improving food security. The project could benefit from reinforcing the importance of agricultural trade (for imports) to meet variable and surge demand of the tourism industry to ensure this temporal food pressure is not entirely borne by this agriculture system. Facilitating food trade from other regions is an important solution to complement the proposed integrated water management approach of the project.	The primary pathway for improving food security is through the promotion of improved agricultural practices. This will reduce the impact of climate change impacts of food production. This will be supported through secondary pathway of improving market access – which in turn will strengthen agricultural livelihoods, thereby improving the resilience of rural communities, and empowering farmers to continue to invest in resilient food production processes. The project design has been further developed to describe these pathways in more detail.

	Regarding imports, while the project does not directly reinforce trade systems for food imports, the market development for agricultural produce (which includes local and regional markets) will have the potential to work in both directions to balance food supply and demand.
Germany Comments Germany approves the PIF in the work program but asks that the following comments are taken into account: Suggestions for improvements to be made during the drafting of the final program proposal: • Component 4.2 mentions that innovative technologies for climate smart agriculture, agroecology and soil conservation would be identified to enhance community and ecosystem resilience in the TSB. While Germany approves this idea, we appreciate more information on what kind of innovative technologies use is planned, given that the core of the project is Nature based solutions. • Monitoring and Evaluation is a vital part of the project, as outlined in component 5. The establishment of an M&E programme to collect and curate lessons learned from project activities can build a solid foundation for future planning of projects. We would like to see this supported by indicators that are applicable to use for lessons learned for future projects. • Germany welcomes the complementarity between interventions under the GEF-8 project and this LDCF project. This shows holistic planning and potentially great benefits for the TSB region. In order to reach the maximum complementarity between the projects, we would like to see more elaboration on how the complementarity will be ensured throughout the implementation of both projects.	• The details on the innovative technologies have been further developed. Through the assessments and consultations during project development, digital technologies for the agriculture value chains were highlighted as a key opportunity, which has become the focus of this activity. • The MEL system under Output 5.1 will define clear processes, roles, and responsibilities for tracking environmental and socio-economic outcomes, ensuring that lessons learnt inform both adaptive management in target sites and the replication of successful approaches across Cambodia and beyond. • The complementarity between these two projects has been infused throughout the project design and implementation strategies. This includes identifying options for sharing resources, as well as linking specific Outputs towards achieving broader, shared long-term outcomes.
Scientific Technical Advisory Panel (STAP)	
Project Rationale and Description	
STAP appreciates that the PIF lays out two climate futures, one more moderate and the other more extreme. This creates a series of futures that captures at least some of the range of uncertainty related to future climate. Further, this PIF brings in the economic future and weaves climate and economic growth together. This integrated narrative does not really present more than one plausible future, which would have been helpful, but it does establish a baseline against which project impact can be reasonably measured.	Future narratives have been further explored during the PPG stage. See the response to comment 6 and 7 below for more detail.
The theory of change, while complex, presents clear expected impact pathways whose assumptions can be assessed in the project preparation phase and whose outcomes should be measureable at project completion. Given this, it was surprising that the project chose to delay the assessment of the potential resilience of interventions to Component 2. The point of developing future narratives is to create something against which to measure that resilience, so the PIF might have presented at least a preliminary assessment.	The selection of the intervention strategy for Component 2 was founded on the concept of resilience, drawing on best practices and national priorities for use of NbS. The technical design during the PPG phase has identified nuanced details that will ensure the resilience of individual measures in line with the future narratives (for example ensuring the tree species chosen for restoration are resilient to the expected future climate conditions and where possible provide the necessary ecosystem services to enhance the sustainable development opportunities of local communities).
Given the integrated narrative presented by the project, and the high rates of economic growth sought/expected by the government, it seems clear that Cambodia is seeking a transformational pathway forward. Under such a pathway it makes sense to ask if the resilience of current practices that are not at the heart of that economic growth (i.e. farming) and which might be associated with some challenges of degradation (i.e. extensification) should be the goal of	Given the importance of local food production (something that is highly valued by the RGoC), the intention is not to shift people from farming to other livelihoods. Instead, the government seeks to improve the production potential of existing farmland. This is complemented by the livelihood development not to shift people away from agriculture, but rather to reduce incentives for maladaptive practices that degrade ecosystems by creating

this project. Does Cambodia expect its workforce to shift from the agricultural to other (tourism, etc.) sectors to drive this growth? Should some of the workforce shift? If so, the discussion of rural livelihoods needs to carefully consider what the project is making resilient, and if it is doing so in a manner that will allow for these future transformations.	sustainable alternatives. The idea is to diversify household income and increase the involvement of community members in the value chains of sustainable livelihoods. Moreover, in addition to the livelihood diversification under this project, links have been made with the ecotourism development proposed under the complementary ER-IP project. Ecotourism offers a strong alternative in Cambodia that works alongside traditional livelihoods to incentivize conservation practices.
Under Component 3, there appears to be an implicit assumption that unsustainable livelihoods practices are a significant driver of degradation. However, this is not mentioned earlier in the PIF (i.e. as part of the project rationale) and it is not clear whether or not this is in fact true, yet this assumption appears to be shaping proposed interventions. As the project has not yet consulted with local targeted communities, engagement with these communities and their practices will be critical to the successful final design of this project, otherwise there is a risk that selected interventions will be aimed at a problem that does not really exist.	Yes, unsustainable livelihoods – especially the expansion of agriculture into forests and logging – are considered major drivers which the project intends to address. These drivers are noted in the root causes and drivers of vulnerability section of the PIF, and have since been expanded on through additional research and consultations on the matter. This includes integrating extensive work has done on the subject as part of the preparation of the ERIP project. Moreover, extensive community engagements have been held during the PPG phase to further understand these drivers and tailor the interventions to the specific needs of the communities.
In the risk section of the PIF, there is a discussion of the challenges related to land tenure and some of the proposed interventions. Given the nature of these interventions and the importance of land tenure in general, it should be addressed as a central component of project design, not merely in the context of risk mitigation. It is impossible to select interventions that will be taken up and durable without incorporating land tenure issues into the project design.	The challenges related to land tenure are well acknowledged. Given the complexity and sensitivity of the situation, the project does not attempt to change land tenure systems in the project area — this is deemed outside the feasible scope of the project (as noted by the reviewer, such changes come with significant political implications). Instead, and in coherence with the RGoC, the approach will focus on creating systems to work within the existing land-tenure systems, working with community structures to create sustainable interventions with strong local ownership. This is underpinned by strong consultative approaches — both during the project preparation and continuing through implementation — that lead to co-development of the site-specific interventions, promoting local ownership.
STAP Specific points and suggestions.	
Develop narratives of how the future could unfold that captures different futures in terms of economic growth and climate to fully assess the resilience of interventions across a range of plausible futures. Interventions can then be assessed in light of both futures to capture a sense of their robustness across diverse futures. See STAP's Simple Future Narratives Brief and Primer for more information.	As stated by the reviewers above, the foundations for the future narratives have been identified, specifically in relation to climate and the economy, which will interact in various ways to influence the future of rural livelihoods and economies. The Future narratives have been further elaborated in line with the Simple Future Narratives Brief and Primer.
Address the issue of land tenure as part of the interventions and activities. The project will need a clear plan for integrating existing land tenure arrangements into its project implementation or the interventions either will not be taken up, or will not be durable. Challenges to the local land tenure system could also spark local or even national political pushback.	The challenges related to land tenure are well acknowledged. Given the complexity and sensitivity of the situation, the project does not attempt to change land tenure systems in the project area — this is deemed outside the feasible scope of the project (as noted by the reviewer, such changes come with significant political implications). Instead, and in coherence with the RGoC, the approach will focus on creating systems to work within the existing land-tenure systems, working with community structures to create sustainable interventions with strong local ownership. This is underpinned by strong consultative approaches — both during the project preparation and continuing through implementation — that lead to co-development of the site-specific interventions, promoting local ownership.
Clearly align the project description and proposed activities and interventions with the intertwined climate/economic future of Cambodia. If Cambodia is seeking to transform itself, the project will have to carefully consider what it means to make an existing activity resilient. While protecting the food supply in the country is certainly important, there are many ways to do this – making existing ways of raising food, etc. resilient might not do so in a manner that aligns with the economic goals. Interventions should promote outcomes that both address the impacts of climate change and the economic and social expectations of the government.	The climate rationale and link to future narratives has been discussed for each intervention in the project document, engaging relevant local experts to refine the specific activities to meet the local strategic goals of the country as set out in the RGoC's Pentagonal and Circular Strategies. The MoE has also been closely involved in the project design and as the implementing partner will be engaged throughout implementation to ensure that the approaches align with government economic development goals. For food security, Side 3 (i.e. promotion of agriculture and rural development) of Pentagon 4 (i.e. Resilient, sustainable and inclusive development) puts the promotion of agriculture and rural development as a core national

	priority. This includes strategies to maximize productivity, quality, safety, diversity, value add, and resilience.
Assess the robustness of proposed interventions across a range of climate futures. This should be done early (i.e. design stage) so that PPG activities can focus on either new interventions that could not be assessed, or answer questions about existing envisioned interventions raised by a preliminary assessment of their robustness across plausible futures.	The robustness of the interventions was a key consideration in designing the approach, with a priority for long-term sustainable interventions. This includes links with economic development – for example through market linkages for sustainable produce – as well as resilience of the measures themselves to climate impacts such as drought and flood. These narratives were mapped out at the inception of the PPG phase, ensuring that the work of local experts kept this at the forefront from the beginning of the technical assessments. As a result, the resulting design of interventions has accounted for the robustness of the approaches proposed.
Engage with targeted communities and carefully identify the drivers of degradation so assumptions about local livelihoods are supported by data. This will allow the project to select interventions appropriate to the challenges they are trying to address without unnecessarily placing the burden for such outcomes on smallholders and other economically marginalized groups who might not be a significant source of these problems.	The overarching drivers of degradation are fairly well understood in Cambodia; however, there are some elements that need closer investigation to fully understand why some existing measures by the RGoC have not fully addressed the drivers. During the PPG phase, detailed consultations were held from national to community level to better understand the context and challenges that underpin the barriers. This included consideration of market linkages and private sector linkages to leverage investment into sustainable watershed management practices that uplift communities.

[1] Approved in December 2024

[2] The SSR contains sacred sites for the Khmer people for their cultural heritage value and legacy of the origin of the Kingdom of Cambodia. This includes the Angkor Archaeological Area.

[3] In 2019, tourism generated more than USD4.9 billion in revenue, contributed to 479,000 direct and indirect jobs in Siem Reap, and tourists in Siem Reap province alone spent USD1.2 billion. Recently, the government has released the Tourism Master Plan Siem Reap (2021–2023) aiming to boost international visitors. As part of the Master Plan, USD150 million has been invested in infrastructure development.

[4] including alignment with UNESCO's guidelines and management plans related to World Heritage Sites

[5] The plans and policies listed here are indicative and will be refined during full project preparation through a consultative process.

[6] the existing SSR Watershed Management Plan was developed in 2005

[7] During the next phase of project development, assessments will be done to identify suitable locations for initial phases of restoration and agroforestry, targeting government land where land tenure rights are clear, and implementation would not be delayed by the finalisation of ESMP and FPIC processes during the first year of implementation. Following that, the sites will be expanded using the detailed spatial map developed for the SSR Watershed Management Plan.

[8] Including potentially accessing voluntary carbon markets

[9] UNDP is currently presenting recommendations to the government on different revenue management mechanisms, such as the Environmental and Social Fund.

[10] Assuming rural household size is 4.2 and assuming one farmer per household (Final General Population Census 2019).

[11] Kingdom of Cambodia. Cambodia Agriculture Survey 2020 (CAS2020): Final Report. National Institute of Statistics, Ministry of Planning, in collaboration with Ministry of Agriculture, Forestry and Fisheries.

[12] Development and trade partners are increasing the environmental standards/regulations in their relations with Cambodia (e.g., EU green deal and new priority for deforestation free commodities). These demands constitute an opportunity for farmers and local communities to get higher prices for "greener" products.

[13] Rawlins M *et al*. 2020. Valuing the Ecosystem Services Provided by Forests in Pursat Basin, Cambodia. World Bank: Washington D.C.

[14] Rawlins M *et al*. 2020. Valuing the Ecosystem Services Provided by Forests in Pursat Basin, Cambodia. World Bank: Washington D.C.

[15] This will include assessing the role of different species in maintaining the soil nutrient cycles, as well as potential sources of food, medicine and income for local households, particularly for supporting communities during disaster events.

Institutional Arrangement and Coordination with Ongoing Initiatives and Project.

Please describe the Institutional Arrangements for the execution of this project, including financial management and procurement. If possible, please summarize the flow of funds (diagram), accountabilities for project management and financial reporting (organogram), including audit, and staffing plans. (max. 500 words, approximately 1 page)

Implementing Partner

1. The Implementing Partner for this project is **Ministry of Environment**.

2. The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document.

- The Implementing Partner is responsible for executing this project. Specific tasks include:

- Project planning, coordination, management, monitoring, evaluation and reporting. This includes providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes and is aligned with national systems so that the data used and generated by the project supports national systems.

- Overseeing the management of project risks as included in this project document and new risks that may emerge during project implementation.

- Procurement of goods and services, including human resources.

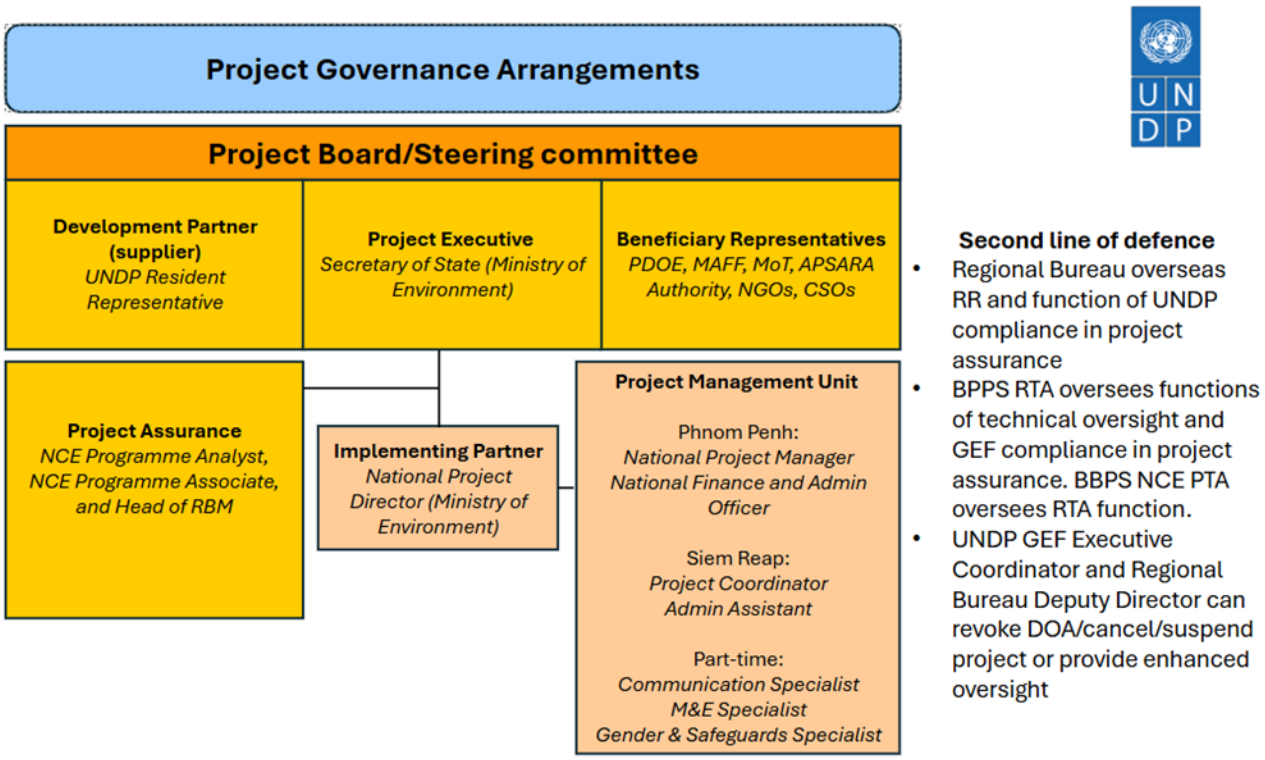
- Financial management, including overseeing financial expenditures against project budgets.

- Approving and signing the multiyear workplan.

- Approving and signing the combined delivery report at the end of the year; and,

- Signing the financial report or the funding authorisation and certificate of expenditures.

Full NIM for LDCF Project



UNDP

1. UNDP is accountable to the GEF for the implementation of this project. This includes overseeing project execution undertaken by the Implementing Partner to ensure that the project is being carried out in accordance with UNDP and GEF policies and procedures and the standards and provisions outlined in the Delegation of Authority (DOA) letter for this project. **The UNDP GEF Executive Coordinator, in consultation with UNDP Bureaus and the Implementing Partner, retains the right to revoke the project DOA, suspend or cancel this GEF project.** UNDP is responsible for the Project Assurance function in the project governance structure and presents to the Project Board and attends Project Board meetings as a non-voting member.

Project Board

2. All UNDP projects must be governed by a multi-stakeholder board or committee established to review performance based on monitoring and evaluation, and implementation issues to ensure quality delivery of results. The Project Board (also called the Project Steering Committee) is the most senior, dedicated oversight body for a project. Responsibilities of the Project Board include: Consensus decision making; Oversee project execution; Risk Management; and Coordination.

Composition of the Project Board: The composition of the Project Board must include individuals assigned to the following three roles:

1. **Project Executive:** This is an individual who represents ownership of the project and chairs (or co-chairs) the Project Board. The Executive usually is the senior national counterpart for nationally implemented projects (typically from the same entity as the Implementing Partner), and it must be UNDP for projects that are direct implementation (DIM). In exceptional cases, two individuals from different entities can co-share this role and/or co-chair the Project Board. If the project executive co-chairs the project board with representatives of another category, it typically does so with a development partner representative.

2. **Beneficiary Representative(s):** Individuals or groups representing the interests of those groups of stakeholders who will ultimately benefit from the project. Their primary function within the board is to ensure the realisation of project results from the perspective of project beneficiaries. Often representatives from civil society, industry associations, or other government entities benefiting from the project can fulfil this role. There can be multiple beneficiary representatives in a Project Board and will include the Provincial Department of Environment, the Ministry of Food and Agriculture, the Ministry of Tourism, the Apsara Authority, and NGO/CSO representatives.

3. **Development Partner(s):** Individuals or groups representing the interests of the parties concerned that provide funding, strategic guidance and/or technical expertise to the project.

Project Assurance

3. Project assurance is the responsibility of each project board member; however, UNDP has a distinct assurance role for all UNDP projects in carrying out objective and independent project oversight and monitoring functions. UNDP performs quality assurance and supports the Project Board (and Project Management Unit) by carrying out objective and independent project oversight and monitoring functions, including compliance with the risk management and social and environmental standards of UNDP. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. Project assurance is totally independent of project execution.

4. A designated representative of UNDP playing the project assurance role is expected to attend all board meetings and support board processes as a non-voting representative. It should be noted that while in certain cases UNDP's project assurance role across the project may encompass activities happening at several levels (e.g. global, regional), at least one UNDP representative playing that function must, as part of their duties, specifically attend board meeting and provide board members with the required documentation required to perform their duties.

Project Management – Execution of the Project: The Implementing Partner (MoE) will assign a National Project Director, who will serve as the key government focal point for the project, providing oversight to the Project Management Unit (PMU). The National Project Manager (PM) is the senior most representative of the PMU and is responsible for the overall day-to-day management of the project on behalf of the Implementing Partner (under the oversight of the National Project Director), including the mobilisation of all project inputs, supervision over project staff, responsible parties, consultants and sub-contractors. The project manager typically presents key deliverables and documents to the board for their review and approval, including progress reports, annual work plans, adjustments to tolerance levels and risk registers. The National PM is supported by a Project Coordinator, who is responsible for day-to-day operations at the local level. A designated representative of the PMU is expected to attend all board meetings and support board processes as a non-voting representative.

Will the GEF Agency play an execution role on this project?

If so, please describe that role here and the justification.

Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing (max. 500 words, approximately 1 page)

1. The project will build on and create partnerships with ongoing investments to maximise the impact of the GEF investment and achieve anticipated results.

▪ The core project partnership is the integral link between the LDCF project and the ER-IP child project (Restoring ecosystems for sustainable development in the Tonle Sap Basin and Siem Reap/Phnom Kulen landscape – UNDP, USD7.8M, 2025-2029). The RGoC in partnership with UNDP has developed both projects in parallel, with a central focus on complementary. The ER-IP child project will work synergistically with the LDCF project to build resilience of communities in Cambodia. Both projects will be implemented in parallel (offset by 1 year) and will target the same geographical area — but consider different aspects of the development challenge, with ER-IP focused on land degradation and biodiversity, and the LDCF project focusing specifically on the additional climate change challenges. Several elements of the LDCF will be directly implemented in conjunction with EP-IP interventions, sharing resources to achieve common, integrated goals – for example, in revising the Tonle Sap Basin Watershed Restoration, Rehabilitation, and Conservation Plan

▪ Public-Social-Private Partnerships for Ecologically-Sound Agriculture and Resilient Livelihood in Northern Tonle Sap Basin (PEARL) – FAO, USD42.8M, 2023-2029: PEARL aims to enhance the climate change resilience of smallholder farmers and local communities in the northern areas of the TSB by increasing their access to growing premium market segments while using their improved market access to incentivise their transition to climate-resilient practices, mainly through effective public-social-private partnerships. Outcome 4 of the proposed project will look to partner with PEARL to maximise opportunities for market development, while support in the agricultural sector will draw on the agrometeorological advisories for products such as cashew and other high-value NTFPs. Lessons will also be drawn from PEARL to enhance opportunities for PPCPs and finance under Outcome 3, while the two projects will complement each other in expanding the area of restoration across the TSB.

▪ *Agriculture Service Programme for an Inclusive Rural Economy & Agriculture Trade (ASPIRE AT)* – IFAD, 2022–2030, $47.9 m from IFAD & $60 m from European Investment Bank: The ASPIRE-AT programme aims to increase the income of 125,000 rural households through productive and resilient assets, partnerships and market access, and access to value chains within the agriculture sector. It is being implemented across Cambodia, including Siem Reap province. While the ASPIRE AT initiative includes an element of climate change, it is not the primary focus — with interventions targeting producer organisations for investments in larger infrastructure developments, as well as providing credit lines for market development. The proposed LDCF project will complement and partner with this initiative by building the adaptive capacity of the most vulnerable smallholder farmers, introducing on-farm practices that will increase resilience to droughts and floods, as well as connecting climate-resilient products to markets and catalysing private sector investment to support smallholder farmer in these provinces. Opportunities will also be sought to partner with IFAD to link beneficiary farmers to financial opportunities provided by the ASPIRE AT initiative.

▪ *Cambodia Sustainable Landscape and Ecotourism Project (C-SLEP)* Phase 2. The project will seek to partner with World Bank to realise potential synergies and collaboration with their ongoing efforts in the country. The first phase of C-SLEP is ending in 2025, but is earmarked for a second phase to begin before 2027. This alignment centres on the shared focus on protected areas management, reforestation, and sustainable livelihoods — particularly regarding ecotourism and NTFP value chains. The lessons learnt and outputs from C-SLEP have already been used to shape the development of sustainable finance under Component 2, and will continue to engage during implementation to operationalise sustainable finance and foster private sector partnerships.

▪ *Tonle Sap Poverty Reduction and Smallholder Development Project* Phase 3: Asian Development Bank (ADB) is currently looking into options for a third phase of this project, with Phase 2 having closed in 2024. Phase 3 will likely include Siem Reap, with the intention to establish connections between agriculture

markets, businesses and smallholder farmers, including support for accessing international markets by maximising the benefits of road infrastructure development in the country. Partnerships will be sought to link the project value chains – particularly for agroforestry products and NTFPs – with the market development initiatives supported by ADB.

Core Indicators

Indicate expected results in each relevant indicator using methodologies indicated in the GEF-8 Results Measurement Framework Guidelines. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

META INFORMATION – LDCF

LDCF **true**	SCCF-B (Window B) on technology transfer **false**	SCCF-A (Window-A) on climate Change adaptation **false**

Is this project LDCF SCCF challenge program? **false**
This Project involves at least one small island developing State(SIDS). **false**
This Project involves at least one fragile and conflict affected state. **false**
This Project will provide direct adaptation benefits to the private sector. **false**
This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs). **false**
This project will collaborate with activities begin supported by other adaptation funds. If yes, please select below

Green Climate Fund **false**	Adaptation Fund **false**	Pilot Program for Climate Resilience (PPCR) **false**

This Project has an urban focus. **false**
This project will directly engage local communities in project design and implementation **true**
This project will support South-South knowledge exchange **true**

This Project covers the following sector(s)[the total should be 100%]: *	
Agriculture	25.00%
Nature-based management	25.00%
Climate information services	0.00%
Coastal zone management	0.00%
Water resources management	30.00%
Disaster risk management	20.00%
Other infrastructure	0.00%

Tourism	0.00%
Health	0.00%
Other (Please specify comments)	0.00%
Total	100.00%

This Project targets the following Climate change Exacerbated/introduced challenges:*

Sea level rise **false**	Change in mean temperature **true**	Increased climatic variability **true**	Natural hazards **true**
Land degradation **true**	Coastal and/or Coral reef degradation **false**	Groundwater quality/quantity **true**	

CORE INDICATORS – LDCF

	Total	Male	Female	% for Women
CORE INDICATOR 1 Total number of direct beneficiaries	71,900	35,231.00	36,669.00	51.00%
CORE INDICATOR 2 (a) Area of land managed for climate resilience (ha) (b) Coastal and marine area managed for climate resilience (ha)	81,900.00 0.00			
CORE INDICATOR 3 Number of policies/plans/ frameworks/institutions for to strengthen climate adaptation	10.00			
CORE INDICATOR 4 Number of people trained or with awareness raised	15,810	7,905.00	7,905.00	50.00%
CORE INDICATOR 5 Number of private sector enterprises engaged in climate change adaptation and resilience	3.00			

SUB INDICATOR 1

	Total	Male	Female
1.1 Number of direct beneficiaries from more resilient physical and natural assets	7500	3,675	3,825
1.2 Number of direct beneficiaries with diversified and strengthened livelihoods and sources of income	64400	31,556	32,844
1.3 Number of direct beneficiaries from the new or improved climate information services including early warning systems	0	0	0
1.4 Number of youth (15 to 24 years of age) benefiting from the project	11819	5,989	5,830
1.5 Number of elderly (over 60 years of age) benefiting from the project	6639	2,642	3,997

1.6 Increased income, or avoided decrease in income (per capita in $ across all relevant beneficiaries)	0		

SUB-INDICATOR 2

2.1 Hectares of agricultural land

37,500

2.2 Hectares of urban landscape

0

2.3 Hectares of rural landscape

0

2.4 Hectares of forests

42,900

2.5 Hectares of marine area

0

2.6 Hectares of freshwater area

0

2.7 Number of residential houses

0

2.8 Number of public buildings

0

2.9 Number of irrigation or water structures

19

2.10 Number of fishery or aquaculture ponds or cages

0

2.11 Number of ports or landing sites

0

2.12 Km of road

0

2.13 Km of riverbank

600

2.14 Km of coast

0

2.15 Km of stormwater drainage

0

2.16 Number of new adaptation technologies supported

0

SUB INDICATOR 3

3.1 Number of policies/plans developed and strengthened that will mainstream climate resilience

(regional, national, sub-national)

10

3.2 Number of systems and frameworks established for continuous monitoring, reporting and review of climate adaptation impacts

2

3.3 Number of national climate policies and plans enabled, including national adaptation planning processes

0

3.4 Number of institutional partnerships or coordination mechanisms established or strengthened

1

3.5 Number of institutions with increased capacity to plan, implement, monitor, and report for climate adaptation

5

3.6 Number of institutions with increased capacity to attract, and manage climate adaptation finance

4

3.7 Number of local community organizations benefitting from and/or engaged in institution strengthening, partnerships, or financing

74

3.8. Number of climate risk and vulnerability assessments conducted

6

SUB INDICATOR 4

4.1 Number of people trained or made aware of climate change impacts and appropriate adaptation responses	Total	Male	Female
a) National government	40	25	15
b) Local government	20	10	10
c) Local community organizations	15700	7,850	7,850
d) Extension services	50	25	25
e) Hydromet and disaster risk management agencies	0	0	0
f) School children, university students, and teachers	0	0	0
g) Youth	2512	1,256	1,256

SUB INDICATOR 5

	Total	Male	Female
5.1 Amount of investment mobilized (US$) from private sector sources			

	0		
5.2 Number of entrepreneurs supported for climate adaptation or resilience	0	0	0
5.3 Total financial value of lines of credit and/or investment funds	0		
5.4 Number of MSMEs incubated/accelerated with technical assistance, financial matchmaking, and/or direct financing	3		

Key Risks

	Rating	Explanation of risk and mitigation measures
CONTEXT		
Climate	Moderate	The key climate-related risks identified include extreme temperature, extreme precipitation and flooding, drought, and strong winds. Such events may impact the implementation of on-the-ground NbS interventions. (For more details, see Annex 25: Climate and Disaster Assessment). For example, during extreme rainfall events, flooding and erosion could uproot newly planted trees, or damage equipment. Access to forest areas may also be impacted following heavy rains. Droughts may also impact the survival of tree seedlings, especially at the early stages of growth. Extreme temperatures could also pose a health risk to workers. The project activities will consider the expected timing of rainfall events, planning community consultations outside of the rainy season where possible, and planting at the onset of the rain season, to maximise growth potential and allow plants to establish root systems before heavy rains start. The timing of extreme temperatures will also be considered, and work schedules will be adjusted to maintain safe working environments.
Environmental and Social	Substantial	Overall, the risk rating for this project is Substantial (A total of 11 risks have been identified: 1 risk is rated as Substantial, and 10 risks are rated as Moderate). The substantial risk relates to impacts on the human rights, lands (and land-tenure arrangements), natural resources, livelihoods and traditional practices of indigenous peoples and other vulnerable and marginalised communities. A lack of culturally-appropriate consultation processes to secure Free, Prior and Informed Consent of project-affected indigenous peoples is a cross-cutting cause of this risk. To mitigate the identified risks, a scoped SESA is required for Output 1.2 and 1.3, as detailed assessment of the cumulative project-wide risks under the upstream planning, policy and strategic components. An Action Matrix will report the actions to be implemented based on the SESA findings. • A scoped ESIA for Outputs 2.1, 2.2 and 3.3 will be developed during the first year of project implementation.

		• An ESMP will be developed within the first year of project implementation, based on the ESIAs findings. • To manage specific risks related to economic displacement and livelihoods a Livelihoods Action Plan will the integrated in the ESMP. A Waste Management and Pesticide/Chemicals Management Plan will be developed and integrated in the ESMP. To manage the risk related to impacts on Cultural Heritage, the mitigation measures will be integrated into the ESMP. • An effective, transparent, free-to-access project-level grievance redress mechanism will be put in place to ensure that all issues and concerns will be reported, discussed and addressed.
Political and Governance	Low	There is strong political support for the project. However, capacity constraints are currently impacting governance of watersheds in the TSB, particularly in terms of coordination actions between multiple sectors. Component 1 of the project will directly address governance risks by building capacity and strengthening policy alignment. This will include providing policy briefs on the integration of climate resilience into national watershed management strategies and training decision-makers across various sectors involved in watershed management on the concepts of integrating climate resilience into watershed manage, including the benefits of doing so for various sectors and processes for collaborative action and inter-sectoral coordination.
INNOVATION		
Institutional and Policy	Moderate	Given the multi-sectoral nature of IWM, effective coordination will be critical. There is a risk that the authority of coordination structures is not fully recognised and that siloed management actions remain the norm – including uncoordinated actions towards competing priorities. This includes the risk that the community and private sector interests are not adequately represented in the decision-making process and therefore may not fully buy in to the sustainable approaches promoted under the IWM approach. There is also a risk that policy briefs developed under Outcome 1 are not fully adopted and translated into action by decision makers. The project will draw on efforts under the closely linked ER-IP Project that are designing comprehensive institutional and coordination arrangements for IWM that build on existing structures that are recognised by relevant institutions. The capacity of these authorities will be strengthened to better facilitate cross-sectoral participation in the decision-making process, including ensuring adequate representation from different affected groups (such as private sector, community, and vulnerable groups). Policy briefs will be developed using a stakeholder-led approach, with extensive consultations underpinned by a multi-sectoral policy review. Involving decision makers in this process will promote ownership of the concepts put forward and the briefs. Decision makers will further be trained on the concepts of future climate risk and the implementation of adaptive practices. Effective integration of climate resilience into IWM approaches promoted through the policy briefs will also be enhanced through the development of a decision support tool.

Technological	Moderate	The decision support tool being developed under Outcome 1 is reliant on the effective acquisition and processing of suitable data to develop advisories that will guide decision makers. There is a risk that such data is not adequately captured through the project knowledge and monitoring systems, or that data from outside sources – including scientific research and lessons from other initiatives – are not adequately captured into CEMIS. There is also risk that the decision support tool does not adequately integrate information from different sectors to enable decisions that are coordinated and complementary between sectors. The MEL framework being developed under Outcome 5 is structured to actively promote and guide the collection of data to be integrated into CEMIS to underpin the DST. Experts with detailed knowledge of data integration will be procured to ensure that the data processing meets the requirements to enable decision support recommendations that account for the needs and priorities of different sectors. Moreover, the assessments under Output 1.3 and Outcome 4 will be closely coordinated with the MEL system under Output 5.1, as well as the DST under Output 1.1 to ensure that all knowledge systems are fully integrated and compatible, with a focus on interoperability.
Financial and Business Model	Moderate	The blended finance mechanisms proposed under Output 2.3, which is a core component of the financial sustainability of the landscape-level NbS initiatives in Siem Reap, is reliant on effective partnerships between the public sector, private sector, donors and communities, and the willingness of various actors to engage with the mechanism. There is a risk that private partners and other donors will not actively engage with the mechanism, resulting in continued siloing of investments. There is further risk that the market for sustainable livelihoods is not adequately developed or that commodities do not meet the required standards to appeal to premium markets that provide the additional financial incentive needed to scale climate resilient agricultural practices. The design of the blended finance mechanism will involve close consultation with all interested parties. Representatives of government institutions, private sector, donors and affected communities will be included in the co-development of the framework and roadmap that will underpin the operationalisation of the mechanism, including in the decision-making process to ensure that the actions funded through the mechanism not only meet the needs of the community, but also contribute to the shared objectives of the various financial sources. To mitigate risks to livelihoods, communities will be training on the requirements for sustainable livelihoods, including business management and value chain development. A challenge fund will also be established to support the role of digital solutions in creating partnerships throughout the agroecological value chain.
EXECUTION		
Capacity	Low	Based on HACT assessment, the implementing partner (IP) is considered low risk. As the GEF Agency for the project, UNDP will provide oversight, ensuring that the project is implemented in accordance with the agreements signed with the implementing partner and laid out in the Project Document.

Fiduciary	Moderate	To manage development project, the implementing partner applies its financial rules and regulations, which meet the level of standard required as evidenced by the fact that partner receives overall risk rating as “low” based on the Micro Assessment conducted. Yet, there is risk that the project would not be implemented in full compliance with the set rule and regulation due to staffs turn over, limited staff technical expertise in the relevant areas, issue in segregation of duty. This would lead to negative findings from the HACT follow up exercise (audit or spot check), hence would impede the implementation progress of the project. Clear expectations on the performance in project financial resources management will be clearly communicated with the national partner focal team, e.g. ensuring staff with the required level of technical expertise play a role as finance focal person, full compliance with the set rule and regulation is required. In addition, as a preventive measure, a list of the past common audit/spot checks findings will be shared with the national partner. Regular HACT exercise (e.g. spot check or audit) will be scheduled on a yearly basis for the partner. Regular training to Government counterparts on financial management and reporting will be done.
Stakeholder	Substantial	The integrated approach proposed by the project requires active stakeholder engagement and coordination. This includes engagement across different sectors as well as between public entities, private sector and community groups. If stakeholders are not adequately engaged both in the decision-making process and the implementation of activities, there is a risk that interventions will not be owned or sustained. These risks extend to the potential economic displacement or disruption of cultural heritage for local communities, particularly if decisions for natural resource/watershed management do not account for the needs and traditions of local groups. A comprehensive stakeholder engagement plan has been developed for the project, ensuring that all affected parties are adequately engaged throughout the implementation period. This plan will also underpin the implementation of the various frameworks and actions plans identified under the ESMF.

Other		

Overall Risk Rating	Substantial	The substantial risk rating is primarily linked to the social risks that are presented in this project.

C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Explain how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this. (max. 500 words, approximately 1 page)

GEF Programming Strategy

1. The project aligns with LDCF Priority Area 1 (Scaling Up Finance) by reinforcing cross-sectoral policy coherence and strengthening coordination, planning, and implementation capacity for integrated watershed management across different government levels under Outcome 1. To ensure long-term sustainability, the project will establish two innovative finance mechanisms: i) under Outcome 2, a mechanism supporting landscape-level nature-based solutions (NbS), and (ii) under Outcome 3, a mechanism leveraging public-private-community partnerships to finance sustainable, climate-resilient natural resource-based livelihoods.

2. The project contributes to LDCF Priority Area 2 (Strengthening Innovation and Private Sector Engagement) through two key entry points: i) Enabling conditions for Private Sector Action: The project addresses knowledge barriers to private sector investment through two dedicated knowledge-management (KM) interventions. Under Output 1.1, it will establish a decision-support tool to inform land and natural resource management for public and private sector decision-makers — complemented by a knowledge management systems and extensive knowledge-generation under Outcome 4; ii) Incubating and Accelerating MSMEs: Outcome 3 focuses on incubating and scaling holistic micro, small, and medium enterprises (MSMEs) with the capacity to attract private equity for green finance, and developing business models for regenerative agriculture value chains and sustainably sourced NTFPs. Together, these interventions will enable private equity investment in sustainable natural resource-based MSMEs under Output 3.4.

3. Finally, the project will contribute to Priority Area 3 (Fostering Partnerships for Inclusion and Whole-of-Society Approach) through three key entry points: i) the project will implement capacity-building at all levels, from institutional strengthening under Outputs 1.1 and 1.2, to community-level capacity-building for agroforestry, climate-resilient agriculture, sustainable NTFP-based livelihoods, and eco-tourism; ii) the project will collaborate with local organisations to promote social inclusion — including supporting the development of women-led enterprises for agricultural products and NTFPs, fostering economic empowerment and gender equity; and iii) the project will establish two IFMs in partnership with the private sector to advance the whole-of-society approach by leveraging blended finance to scale up NbS at the landscape level and mobilising private equity to support MSMEs engaged in sustainable natural resource-based livelihoods.

National strategies and baseline investments

4. The project is nationally driven and designed to directly address key national priorities related to environmental degradation, climate change and sustainable development. It aligns with various policies and plans, including the Cambodia Climate Change Strategic Plan (2014–2023)[1][21]; the Pentagonal Strategy Phase I; the Circular Strategy on Environment (2023–2028); the Nationally Determined Contributions (NDCs 2020)[2][22]; the National Action Plan for Combating Land Degradation (2018–2027); and the National Biodiversity Strategy and Action Plan (NBSAP 2016–2025)[3][23]. Specifically, the project supports national targets to: i) increase forest cover to 47% of the total land area and reduce deforestation rates by 50% by 2030; ii) cut historical emissions by 50% by 2030; iii) enhance soil organic carbon stocks in forests and croplands by 1.2% annually; iv) identify, inventory, monitor and raise awareness about habitats, ecosystems and their services; v) strengthen measures that positively impact biodiversity; and vi) strengthen the enabling environment for sustainable resource management.

5. The LDCF adaptation project aligns closely with the Cambodia Climate Change Strategic Plan (CCCSP) 2014–2023 by addressing multiple strategic objectives through nature-based solutions (NbS) that enhance climate resilience and sustainable development. By implementing forest restoration, climate-resilient agriculture, and agroforestry, the project directly supports Strategic Objective 1, which aims to promote climate resilience in critical sectors, particularly agriculture, forestry, and water resources. These interventions also contribute to Strategic Objective 2 by safeguarding and enhancing ecosystem services that are vital for climate adaptation and mitigation. Furthermore, by promoting sustainable natural resource-based livelihoods—such as eco-tourism and non-timber forest product harvesting—the project aligns with Strategic

Objective 3, which seeks to improve livelihoods and enhance community resilience to climate change. The project also strengthens institutional and technical capacity, supporting Strategic Objective 5, which calls for the development of human and institutional capacity for climate change response. Additionally, the establishment of innovative finance mechanisms ensures long-term financial sustainability, aligning with Strategic Objective 6, which emphasises strengthening collaboration and funding mechanisms to support climate action. Finally, the project contributes to Strategic Objective 7 by enhancing the enabling environment for NbS implementation through knowledge-sharing and institutional capacity-building, fostering long-term climate governance improvements. In doing so, the project supports the CCCSP's overarching goal of integrating climate resilience into Cambodia's development trajectory.

6. The project strongly aligns with the NBSAP's vision. In particular, the project's focus on climate adaptation aligns with NBSAP Theme 8 (Biodiversity and Climate Change), contributing to all four strategic objectives for overcoming adaptation barriers. It also supports biodiversity valuation, specifically assessing the regulating and recreational services provided by ecosystems in the Tonle Sap Basin.

7. The project also contributes to the adaptation priorities outlined in Cambodia's updated NDC (2020). These include building capacity for climate change innovation in the tourism industry along the Tonle Sap River, establishing a centralised and standardised approach to climate-resilient water management, strengthening flood resilience in communities surrounding Lake Tonle Sap, enhancing biodiversity conservation and restoration efforts to adapt to climate change, and advancing post-harvesting processing techniques and agribusiness development. Additionally, the project aligns with several other key national policies including the: i) National REDD+ Strategy (2017–2026)[4][24]; ii) Long-Term Strategy for Carbon Neutrality (LTS4CN); iii) Environment and Natural Resources Code on Conservation, Management, and Restoration of Natural and Cultural Resources; iv) National Forest Program 2010–2029; v) National Strategic Plan on Green Growth (2013–2030); vi) National Environment Strategy and Action Plan (2016–2023); vii) Law on Land Management, Urban Planning and Construction (Chapter 3 — Land-use Master Plan); and vii) National Protected Area Strategic Management Plan.

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[1] A new version of the CCCSP is currently under development, but is not yet finalized or validated. At project inception, the PMU will assess the document against the revised CCCSP to identify if any adjustments. However, it should be noted that the project has been developed with full input from MoE, and is aligned with the anticipated targets of the revised CCCSP.

[2] As Cambodia does not currently have a formal NAP, and the NDC's are considered the primary source for adaptation actions/priorities for the country, a NAP financing strategy was developed, and the proposed project aligns with the financial strategies identified therein, particularly in terms of accessing multi-lateral climate funds and leveraging investment from the private sector.

[3] Backed by the Long-Term Strategy for Carbon Neutrality.

[4] https://redd.unfccc.int/files/20180813_national_redd__strategy_cambodia.pdf

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment

We confirm that gender dimensions relevant to the project have been addressed during Project Preparation as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

1) Does the project expect to include any gender-responsive-measures to address gender gaps or promote gender equality and women's empowerment?

Yes

If the project expects to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment, please indicate in which results area(s) the project is expected to contribute to gender equality:

Closing gender gaps in access to and control over natural resources;

Improving women's participation and decision-making; and/or

Yes

Generating socio-economic benefits or services for women.

Yes

2) Does the project's results framework or logical framework include gender-sensitive indicators?

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during Project Preparation as required per GEF policy, their relevant roles to project outcomes has been clearly articulated in the Project Description (Section B) and that a Stakeholder Engagement Plan has been developed before CEO endorsement**.**

Yes

Select what role civil society will play in the Project

Consulted only; Yes

Member of Advisory Body; Contractor; Yes

Co-financier; No

Member of project steering committee or equivalent decision-making body ;

Executor or co-executor;

Other (Please explain)

Private Sector

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in section B project description?

Yes

Environmental and Social Safeguards

We confirm that we have provided information regarding Environmental and Social risks associated with the proposed project or program, including risk screenings/ assessments and, if applicable, management plans or other measures to address identified risks and impacts (this information should be presented in Annex E).

Yes

Please provide overall Project/Program Risk Classification

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
High or Substantial	High or Substantial		

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described during Project Preparation in the Project Description and that these activities have been budgeted and an anticipated timeline for delivery of relevant outputs has been provided.

Yes

Socio-economic Benefits

We confirm that the project design has considered socio-economic benefits to be delivered by the project and these have been clearly described in the Project Description and will be monitored and reported on during project implementation (at MTR and TER).

yes

ANNEX A: FINANCING TABLES

GEF Financing Table

Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	GEF Project Grant($)	Agency Fee($)	Total GEF Financing ($)
UNDP	LDCF	Cambodia	Climate Change	LDCF Country allocation	Grant	6,684,703.00	635,047.00	7,319,750.00
Total GEF Resources ($)						**6,684,703.00**	**635,047.00**	**7,319,750.00**

Project Preparation Grant (PPG)

Was a Project Preparation Grant requested?

true

PPG Amount ($)

200000

PPG Agency Fee ($)

19000

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	PPG($)	Agency Fee($)	Total PPG Funding($)
UNDP	LDCF	Cambodia	Climate Change	LDCF Country allocation	200,000.00	19,000.00	219,000.00
Total PPG Amount ($)					**200,000.00**	**19,000.00**	**219,000.00**

Please provide Justification

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total($)
Total GEF Resources					**0.00**

Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing($)	Co-financing($)
CCA-1-3	LDCF	6,684,703.00	15000000

Total Project Cost		**6,684,703.00**	**15,000,000.00**

Confirmed Co-financing for the project, by name and type

Please include evidence for each co-financing source for this project in the tab of the portal

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	Ministry of Environment	In-kind	Recurrent expenditures	8000000
GEF Agency	United Nations Development Programme	In-kind	Recurrent expenditures	7000000
Total Co-financing				**15,000,000.00**

Please describe the investment mobilized portion of the co-financing

UNDP's co-finance contribution will be channeled through UNDP Cambodia's Green Climate Fund (GCF)-funded project "Multi-country Project Advancing Early Warnings for All (EW4All)", which will support activities aligned with climate change adaptation, resilient livelihoods, and disaster risk knowledge systems and dissemination in the targeted landscapes. The in-kind support may include technical expertise, staff time, access to facilities, logistics, stakeholder engagement, and knowledge sharing initiatives that contribute directly to the project's objectives.

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Date	Project Contact Person	Phone	Email
GEF Agency Coordinator	6/20/2025	Nancy Bennet		nancy.bennet@undp.org
Project Coordinator	6/20/2025	Samar Taha		samar.taha@undp.org

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

Please attach the Operational Focal Point endorsement letter(s) with this template.

Name of GEF OFP	Position	Ministry	Date (MM/DD/YYYY)
H.E. San Vanty	Secretary of State	Ministry of Environment	12/1/2023

ANNEX C: PROJECT RESULTS FRAMEWORK

Please indicate the page number in the Project Document where the project results and M&E frameworks can be found. Please also paste below the Project Results Framework from the Agency document.

1. Contribution to the **Sustainable Development Goal** (s): *2, 5, 6, 13, 15*							
2. Intended Outcome as stated in the **UNSDCF/Country Programme Results and Resource Framework**: 2.1, 3.1, 3.3, 3.4							
3. Applicable Output(s) from the UNDP Strategic Plan: 2.1; 4.1; 4.2; 6.1; E.1, E.2, E.3							
4. **Project title and Quantum Project Number:** Building resilient livelihoods through nature-based solutions in the Tonle Sap Basin and Siem Reap/Phnom Kulen landscape							
5. Objective and Outcome Indicators		**6. Data Source**	**7. Baseline**	**8. Mid-term Target**	**9. End of Project Target**	**10. Data Collection Methods**	**11. Risks/Assumptions**
12. Project Objective: 13.	To build the climate resilience of local communities in the Tonle Sap Basin through an integrated watershed management approach, while conserving the natural and cultural heritage that sustains local livelihoods and societies.						
	14. **Mandatory** Indicator 1: *15.* Number of direct project beneficiaries disaggregated by gender (individual people)	Survey summary reports (including methodologies and findings) Extension officer field reports with uptake verification 16. Government or ministry publications (e.g., MAFF reports)	17. No-one has benefitted yet from project interventions	18. Total: 64,400 19. Male: 31,556 20. Female: 32,844	21. Total: 71,900 22. Male: 35,231 23. Female: 36,669 24. Number of youth benefitting: 11,819 25. Number of elderly benefitting: 6,639	26. Household surveys 27. Field surveys by extension officers to confirm uptake of CRA/agroforestry practices 28. National or sub-national statistics	29. Assumptions: 72% of the population has access to agricultural land. 30. Average household size is 4.2. 31. Average farm size is 1.5 ha. 32. Population distribution is 49% male and 51% female in Siem Reap Province. 33. Youth and elderly are a subset of the total. 34. All farmers will have received training by mid-term. 35. Beneficiaries of more resilient natural assets will realise benefits towards the end of implementation as the NbS interventions begin to have landscape impacts that enhance

							ecosystem services.
	36. **Mandatory** Indicator 2: 37. Area of land managed for climate resilience (hectares) 38.	39. Implementation reports 40. Satellite imagery of restored sites 41. Policy briefs 42.	43. 0 ha	Total: 31,565 ha 23,000 ha of agricultural land 6,815 ha of forests 750 ha of riparian zone	Total: 81,900 37,500 ha of agricultural land 42,900 ha of forests 1,500 ha of riparian zone	44. Site inspections 45. Remote sensing 46. Document review	47. Assumptions: Farmers commit to adopting CRA and sustainable, climate-resilient agroforestry on agricultural land. 48. CF and CPA members commit to adopting sustainable, climate-resilient NTFP harvesting and production methods. 49. The remaining 14,500 ha of agricultural land will be brought under improved management as the market incentives become operational. 50. The remaining 35,785 ha of PKNP will be brought under improved climate-resilient management as the government updates and implements the policy recommendations. 51. Risks: Communities do not adopt or maintain sustainable, climate-resilient practices after training and support is provided. 52. Government does not implement adaptation recommendation

							s as outlined in the policy briefs.
	53. Indicator 3: Number of policies/plans/frameworks/institutions to strengthen climate adaptation	Project-generated policy briefs 54. Project-generate sub-national plan documents	55. 0 policies/plans/frameworks	56. 3 Sub-national plans	57. 10 policies/plans developed and strengthened that will mainstream climate resilience 58. 2 frameworks established for continuous monitoring, reporting and review of climate adaptation impacts 59. 1 institutional partnership established 60. 5 institutions with increased capacity to plan, implement, monitor and report for climate adaptation	61. Document review	62. Assumptions: The government will be committed to amending the 7 national policies, strategies and plans according to the resilience-enhancing recommendations in the policy briefs. 63. The 3 sub-national plans will be prioritised early on to facilitate on-the-ground implementation; therefore, they will be complete by mid-term. 64. Risks: The government does not amend the 7 national policies according to the recommendations.
	65. Indicator 4: Number of people trained or with awareness raised	66. Training materials and modules 67. Workshop agendas and facilitation plans 68. Workshop reports	70. 0 people trained	71. 7,905 people trained	72. 15,810 people trained[1]	73. Document review	74. Assumptions: All target beneficiaries attend the planned training and capacity-building events.

		69. Attendance registers and feedback forms					
	75. Indicator 5: Number of private sector enterprises engaged in climate change adaptation and resilience action	76. Challenge Fund candidate proposals 77. Meetings form selection meetings 78. Financial records for payments form the challenge fund.	79. 0 entities supported	80. At least 2 entities shortlisted	81. 3 entities supported	82. Document review	83. Assumptions: Farmer cooperatives, agri-businesses, and technology service providers are willing to participate in the needs assessment and challenge fund process. 84. There is sufficient interest from private sector actors and NGOs/CSOs to submit high-quality, innovative proposals in response to the call.
85. Project component 1	**86. Strengthened national and provincial land use planning and implementation capacities**						
87. Outcome 1 88. Strengthened capacity for coordination, planning and implementation of integrated watershed management at the national and provincial levels	89. Indicator 6: Capacity of decision-makers to integrate climate change considerations into watershed management	90. Capacity Development Scorecard 91. 92. 1 – No evidence of capacity 93. 2 – Anecdotal/slight evidence of capacity 94. 3 – Partial developed capacity 95. 4 – Widespread, but not comprehensive capacity 96. 5 – Fully developed capacity	97. Average score: 2.831	98. Average score: 3	99. Average score: 4.5	100. Stakeholder engagement /focus group discussions using a guided questionnaire focused mainly on climate change adaptation needs	101. Assumptions: The development of a DST and accompanying SOPs together with capacity building will strengthen institutional capacity for knowledge management and adaptation planning and implementation. 102. National and sub-national government stakeholders actively participate in project activities. 103. Risk: Lack of uptake of climate adaptation recommendations in the policy briefs.

104. Outputs to achieve Outcome 1	*1.1. Adaptive decision-making tools for assessing future climate risk and resilience needs for watershed management* *1.2. Policy briefs and training on the integration of future climate risk into national and sub-national watershed management plans* *1.3. Updated Tonle Sap Basin Watershed Restoration, Rehabilitation, and Conservation Plan integrating future climate risk and resilience needs* *1.4. Participatory action plans and enforcement strategies for climate change adaptation in the riparian zones of the Steung Siem Reap (SSR) Watershed*						
105. **Project component 2**	106. **Investment in integrated watershed management, restoration and conservation, at scale**						
107. Outcome 2 108. Strengthened resilience of communities in the Siem Reap/Phnom Kulen landscape through scalable nature-based solutions and sustainable finance	109. Indicator 7: Area of degraded forest ecosystems restored and number of water structures rehabilitated or established	110. Restoration sites 111. Satellite imagery 112. Implementation reports	113. 0 ha	114. 1,000 ha 9 water structures	115. 2,174 ha 19 water structures rehabilitated or established 116.	117. Site inspections 118. Remote sensing 119. Document review	120. Assumptions: National and sub-national authorities have the political will to support the restoration initiative. 121. Local NGOs and CBOs have the technical capacity to implement restoration activities. 122. CF and CPA communities take ownership of restoration efforts and long-term protection of restored areas under their jurisdiction. 123. Risks: Political will and community ownership is insufficient to meet the restoration targets.
	124. Indicator 8: Number of tools developed to operationalise a blended finance mechanism that supports sustainable and long-term watershed management at the landscape scale	125. Minutes of stakeholder consultations 126. Framework document for an integrated blended finance mechanism	128. 0 tools	129. 1 blended finance assessment	130. 1 Blended finance framework 131. 1 implementation roadmap	132. Document review	133. Assumptions: There is sustained political will and commitment from national and sub-national government agencies to support blended finance approaches for

		127. Final validated roadmap					watershed management. 134. Private sector actors, financial institutions, and local communities are willing to engage in co-creation and co-financing of watershed management efforts. 135. Relevant financial flow data, existing finance mechanisms, and lessons from prior initiatives are accessible and can inform the assessment and framework design. 136. Ongoing and planned policy reforms under Outcome 1 are effective in improving the enabling environment for blended finance and private investment in NbS. 137. Risks: Low private sector interest. 138. Insufficient technical capacity in government or financial institutions.
	139. Indicator 9: Status of the Sustainable Livelihood Innovation Facility (SLIF).	SLIF application database 140. Monitoring reports for successful proposals	141. SLIF not yet established	142. SLIF established and operationalised, with 100% of funds allocated and 50% of funds dispersed.	143. SLIF established and operationalised, with 100% of funds allocated and dispersed.	Document review Verification site visits 144. Surveys	Assumptions: Sufficient private and community co-investment can be mobilised to complement the grant. Conservation enterprises generate community

							value and have local buy-in. Risks: Enterprises may remain dependent on grants and fail to transition to credit or reinvestment. Co-investment from community/private sector may be lower than expected. Loan defaults may weaken revolving fund mechanisms. 145. Low interest rates may not yield sufficient returns to support activities.
146. Outputs to achieve Outcome 2	*147. 2.1. Nature-based solutions implemented in the Siem Reap/Phnom Kulen landscape to reduce flood impacts and improve water provisioning services* *148. 2.2. Sustainable landscape rehabilitation implemented through community-based agroforestry initiatives focusing on diverse, high-value tree species that benefit agricultural livelihoods and enhance carbon stocks* 149. *2.3. Sustainable financing mechanism established and operational within the SSR Watershed to promote public-private-community partnership investments and support long-term financing of community-led NbS initiatives*						
150. Project component 3	**151. Resilient natural resource-based livelihoods**						
152. Outcome 3 153. Increased adoption of climate-resilient natural resource-based livelihoods through training, andmarket development, 154.	156. Indicator 10: Number of project-supported business models for sustainable agricultural and NTFP commodities available to local communities	157. Market analysis for key agricultural and NTFP commodities 158. Minutes of IPLC consultations 159. Business models for high-potential commodities 160. Practical guidelines for business	161. Business models have been piloted, but limited reach to vulnerable communities	162. Market analysis complete	163. Business models and practical guidelines developed and uploaded to the relevant digital platforms	164. Document review 165. Digital platform review 166.	167. Assumptions: There is sufficient and growing demand at local, regional, or international levels for the selected agricultural and NTFP commodities to make value chain investment viable. 168. National policies and regulatory frameworks support

155.		model implementation					smallholder market participation and sustainable NTFP use. 169. Basic infrastructure exists or can be improved to enable producers to reach markets effectively. 170. Risks: Low or volatile market demand for selected commodities. 171. Certification and traceability requirements are too costly or complex. 172. Market power imbalances.
173. Outputs to achieve Outcome 3	*174. 3.1. Smallholder farmers trained in climate-resilient agricultural practices that improve productivity under water-stressed and flood-prone conditions* *175. 3.2. Enhanced commodity value chains and improved market linkages for key agricultural products and NTFPs* *176. 3.3. Community-based enterprises established to facilitate long-term, sustainable support to the implementation of NbS*						
177. Project component 4	**178. Knowledge, research and innovation**						
179. Outcome 4 180. Innovation in the management of watersheds across Cambodia enabled through high-quality knowledge, research and learning 181.	182. Indicator 11: Status of National Capital Account system for ecosystem service valuation	Assessment Scorecard: **0 –** No institutions established or NCA documents prepared **1 –** Inter-ministerial coordination body established but NCA process not yet started **2 –** Inter-ministerial coordination body	184. Level 0	185. Level 2	186. Level 4	187. Document review 188. Stakeholder interviews 189. KM platform review	190. Assumptions: Key ministries are committed to participating in and supporting inter-ministerial coordination. 191. There is political will to institutionalise Natural Capital Accounting and apply it in policy- and decision-making. 192. Existing data and past valuation efforts are accessible

		established, NCA strategy and roadmap prepared and Ecosystem service accounts have been developed in physical terms for 1 watershed **3 –** Institutional arrangements in place, Ecosystem Supply-Use Account for SSR Watershed complete and validated and knowledge products developed and uploaded to the KM platform 183. **4 –** NCA roadmap being implemented and ecosystem service valuation informing decision making at the national level.					and can be effectively leveraged. 193. Biophysical data generated under Output 1.3 is of high quality, spatially disaggregated, and fit for purpose. 194. Methods selected for monetary valuation are context-appropriate and supported by reliable data. 195. Risks: Weak inter-agency coordination due to overlapping mandates, resource competition, or lack of clarity. 196. Difficulty in assigning economic value to non-market services. 197. Findings are not integrated into planning or investment decision, limiting their long-term impact.
	198. Indicator 12: Number of digital solutions for market access in agroecology developed through the Challenge Fund	199. Feasibility and needs assessment for digital technologies in agroecology 200. Challenge Fund investment criteria 201. Challenge Fund candidate proposals	204. Challenge Fund has not been established and digital solutions not operational in target areas.	205. Challenge Fund has been established, and at least two candidates have been shortlisted for Phase 2	206. 2 digital solutions developed	207. Document review 208. Stakeholder interviews 209.	210. Assumptions: Farmer cooperatives, agri-businesses, and technology service providers are willing to participate in the needs assessment and challenge fund process. 211. There is sufficient interest from private sector actors and NGOs/CSOs to submit high-quality,

		202. 203.					innovative proposals in response to the call. 212. Government institutions are supportive of digital innovations in sustainable, climate-resilient agriculture and are willing to facilitate integration with KAS. 213. Risks: High cost or complexity of blockchain and digital platforms may deter adoption or make solutions unfeasible for smallholders. 214. Limited interest or capacity from the private sector to develop viable, market-ready digital agroecology solutions.
215. Outputs to achieve Outcome 4	*216. 4.1. Knowledge of climate change impacts on ecosystem service provision in the SSR watershed enhanced through assessments, research and education to improve understanding of natural and cultural assets of the area, and their role in supporting local livelihoods* *217. 4.2. Innovative digital technologies developed for climate smart agriculture and agroecology value chains to enhance community and ecosystem resilience in the TSB* *218. 4.3. Knowledge management and outreach strategies developed to facilitate the upscaling of climate adaptation interventions nationally, regionally, and globally* 219. *4.4. Scaling strategy developed to replicate IWM practices across other provinces of the TSB*						
220. Project component 5	**221. Monitoring, Evaluation and Learning**						
222. Outcome 5 223. Lessons learnt curated through project M&E and disseminated	224. Indicator 13: Number of MEL tools developed and disseminated	225. Knowledge management platform, 226. Research papers 227. SOP Documents	228. 0 MEL products	229. 1 MEL Framework 230. 1 SOP 231.	233. 1 MEL Framework 234. 1 SOP 235.	236. Document review	237. Assumptions: Lessons learned are adequately captured and collated. Knowledge is properly tailored to user needs to

both nationally and internationally to promote the scaling of interventions to other watersheds across Cambodia and the surrounding region				232.			enable adaptive management. 238. Risks: Lessons from different sectors are not properly integrated, resulting in knowledge products that do not cover the holistic approaches required.
	239. Indicator 14: Number of monitoring and evaluation reports rated Marginally Satisfactory or above.	240. Annual PIRs 241. Mid-Term Review 242. Terminal Evaluation Report	243. 0 annual PIRs 244. 0 Mid-term Review 245. 0 Terminal Evaluation	246. 2 annual PIRs 247. 1 Mid- term Review rated MUS or above 248. 0 Terminal Evaluation	249. 5 annual PIRs 250. 1 Mid- term Review rated MUS or above 251. 1 Terminal Evaluation rated MUS or above	252. Document Review	253. Assumptions: Project management unit is fully operational and has capacity for effective monitoring. 254. Risks: Delays in project implementation reduce the level of impact, particularly in early stages of implementation.
255. Outputs to achieve Outcome 5	*256. 5.1. Monitoring, Evaluation and Learning system established to collect and curate lessons learnt from project activities* 257. *5.2. Project implementation coordinated and measured through proactive steering committee functions, inclusive monitoring and evaluation, and an operational environmental and social management mechanism*						

[1] As per the GAP, gender disaggregated targets will be set through the SES process that will be implemented at project inception phase, as part of the preparation of the ESMP related processes.

ANNEX D: STATUS OF UTILIZATION OF PROJECT PREPARATION GRANT (PPG)

Provide detailed funding amount of the PPG activities financing status in the table below:

Project Preparation Activities Implemented	GETF/LDCF/SCCF Amount ($)		
	Budgeted Amount	Amount Spent To date	Amount Committed
International Consultant	80,000.00	43,400.00	36,600.00

Local consultants	78,750.00	39,375.00	39,375.00
Travel	20,778.00	9,624.00	11,154.00
Supplies	2,000.00	828.00	1,172.00
Communic&Audio Visual Equp	4,000.00	150.00	3,850.00
Audit Fee	2,400.00		2,400.00
Training, workshop and conference	12,072.00	4,354.00	7,718.00
Total	**200,000.00**	**97,731.00**	**102,269.00**

ANNEX E: PROJECT MAP AND COORDINATES

Please provide geo-referenced information and map where the project interventions will take place

Location Name	Latitude	Longitude	GeoName ID
TSB Centroid	12.9239	103.9152	1,821,300

Location Description:

Tonle Sap Basin area across 6 provinces.

Activity Description:

Targeted for improved watershed management.

Location Name	Latitude	Longitude	GeoName ID
SSR Centroid	13.3618	103.8606	1,822,214

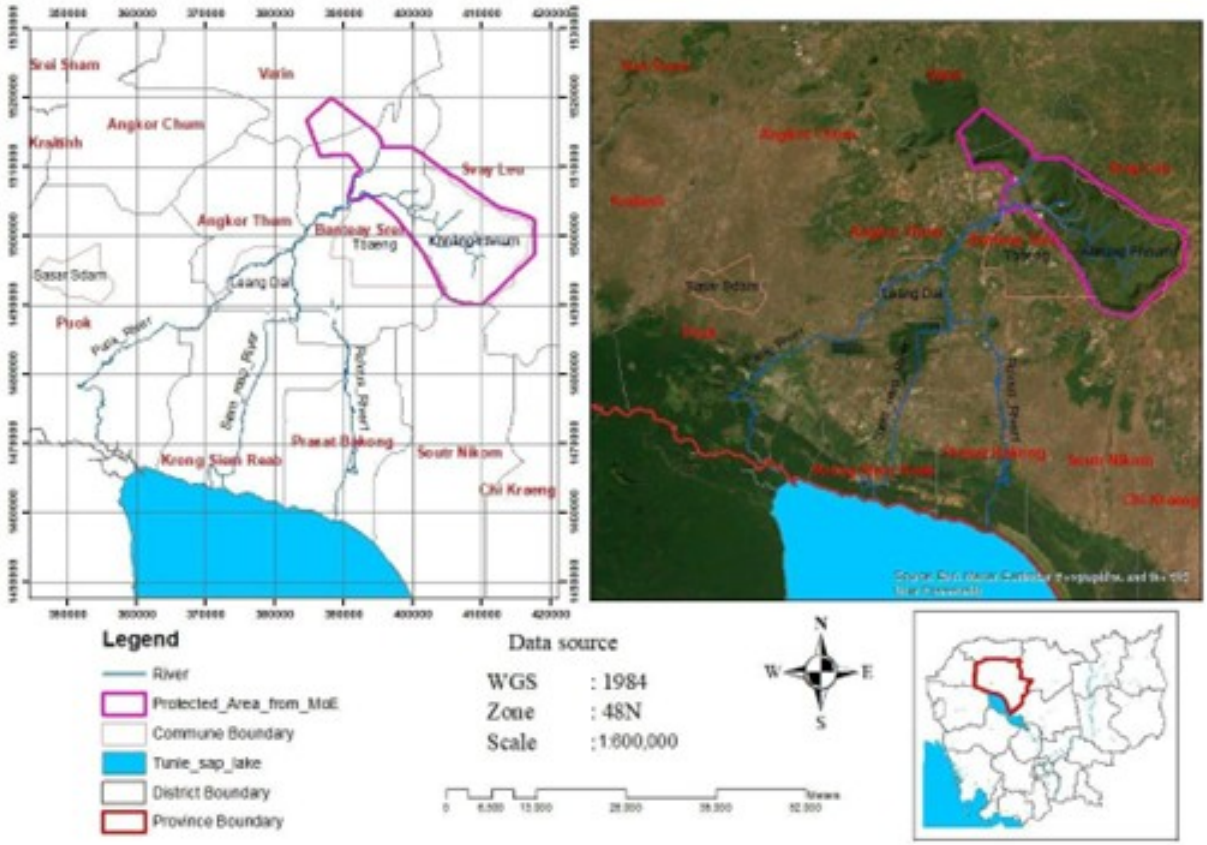
Location Description:

Steung Siem Reap watershed, from the Phnom Kulen National Park down to the Tonle Sap Lake

Activity Description:

Targeted for on-the-ground interventions.

Please provide any further geo-referenced information and map where project interventions are taking place as appropriate.



ANNEX F: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

Attach agency safeguard datasheet/assessment report(s), including ratings of risk types and overall project/program risk classification as well as any management plans or measures to address identified risks and impacts (as applicable).

Title
Cambodia LDCF_Annex 29_LAF_Livelihood_Action_Framework
Cambodia LDCF_Annex 28_IPPF
Cambodia LDCF_Annex 09-ESMF
Cambodia LDCF_Annex 05_SESP_UNDP-GEF-LDCF

ANNEX G: BUDGET TABLE

Please upload the budget table here.

	Detailed Description	Component (USDeq.)		Responsible Entity

Expenditure Category		*Component 1*	*Component 2*	*Component 3*	*Component 4*	*Sub-Total*	*M&E*	*PMC*	Total (USDeq.)	(Executing Entity receiving funds from the GEF Agency)
		Outcome 1	Outcome 2	Outcome 3	Outcome 4	*Sub-Total*	*M&E*	*PMC*		
Equipment	Procurement of trees (sapling+seedling+materials) for forest restoration in PKNP (Zone 6 = 774Ha), non-protected areas (zones 4&5 = 800Ha), and riparian zones (zones 4, 5, & 6 = 600Ha), and Agroforestry inputs (seedling and associated supporting materials).	-	1,883,100	-	-	1,883,100	-	-	1,883,100	MoE
Equipment	Develop IEC materials for learning event.	-	15,040	-	-	15,040	-	-	15,040	MoE
Equipment	Agricultural input materials for the establishment of five demonstration sites, starter materials and seed certification materials for trained farmers or farmer groups, and materials for the formalisation of seed producer groups into recognised entities.	-	-	27,349	-	27,349	-	-	27,349	MoE
Equipment	Computers for PMU ,1 Printer and 1 Scanner , Accounting System and other ICT supplies .	-	-	-	-	-	-	15,092	15,092	MoE
Equipment	Vehicle rental and maintenance for ICT equipment for PMU and MoE.	-	-	-	-	-	-	36,000	36,000	MoE
Equipment and Furniture	Office tables/chairs for PMU.	-	-	-	-	-	-	2,550	2,550	MoE
Contractual Services - Individ	Chief Technical Advisor /Project Technical Advisor.	34,566	34,568	34,568	34,568	138,270	-	-	138,270	UNDP
Contractual Services - Individ	Project coordinator.	35,000	63,000	-	46,000	144,000	-	36,000	180,000	MoE
Contractual Services - Individ	Monitoring and Evaluation Officer.	-	50,000	-	20,000	70,000	50,000	-	120,000	MoE
Contractual Services - Individ	Project Gender and Safeguard Officer.	-	70,000	50,000	-	120,000	-	-	120,000	MoE
Contractual Services - Individ	Project Communication Officer.	-	66,000	-	-	66,000	-	-	66,000	MoE
Contractual Services - Individ	Internship for youth engagement.	-	-	-	-	-	22,416	-	22,416	MoE
Contractual Services - Individ	National Finance and Admin Officer.	-	-	-	-	-	-	72,000	72,000	MoE
Contractual Services - Individ	Project Admin Assistant.	-	-	-	-	-	-	45,000	45,000	MoE
Contractual services-Company	Local firm to develop a web-based decision-support tool (DST), DST SoP, MoE personnel qualifications and capacity building for watershed management and monitoring.	166,620	-	-	-	166,620	-	-	166,620	MoE

Contractual services-Company	Local firm to update the Tonle Sap Basin Watershed Restoration, Rehabilitation, and Conservation Plan including SOPs.	122,700	-	-	-	122,700	-	-	122,700	MoE
Contractual services-Company	Local firm to oversee stakeholder dialogues and provide advisory services for drafting the NbS co-management strategies and actions, and develop a detailed spatial map for SSR and PKNP demarcation, land registration, and zoning.	94,700	-	-	-	94,700	-	-	94,700	MoE
Contractual services-Company	Local firm to repair degraded ponds and install new ponds for maintaining water supply to farmers	-	168,092	-	-	168,092	-	-	168,092	MoE
Contractual services-Company	Local firm to establish two agroforestry demonstration sites	-	45,000	-	-	45,000	-	-	45,000	MoE
Contractual services-Company	Local firm to produce, broadcast and manage radio and social media campaign	-	13,065	-	-	13,065	-	-	13,065	MoE
Contractual services-Company	International firm to conduct a blended finance comprehensive assessment follow by development of policy & legal framework, financing options, and implementation roadmap.	-	366,500	-	-	366,500	-	-	366,500	MoE
Contractual services-Company	Local firm to monitor climate-resilient commodities contracts and support MoWRAM with Weather Forecasting.	-	-	93,395	-	93,395	-	-	93,395	MoE
Contractual services-Company	Local firm to provide technical agroecology support, develop online CRA guidelines and baseline assessments.	-	-	86,000	-	86,000	-	-	86,000	MoE
Contractual services-Company	Local firm to build capacity on Climate Resilient Seed (CARDI)	-	-	168,664	-	168,664	-	-	168,664	MoE
Contractual services-Company	Local firm to form farmer cooperatives & train on climate-resilient agriculture and train vulnerable smallholder farmers.	-	-	117,800	-	117,800	-	-	117,800	MoE
Contractual services-Company	Local firm to conduct market assessment & TNA and deliver trainings and coordinate the implementation of business models.	-	-	149,000	-	149,000	-	-	149,000	MoE
Contractual services-Company	Local firm to support establishment & tree nurseries operation;	-	-	180,000	-	180,000	-	-	180,000	MoE
Contractual services-Company	Local firm to upgrade mini-marketplaces and vendor spaces; and implement livelihood improvement.	-	-	170,000	-	170,000	-	-	170,000	MoE
Contractual services-Company	Local Consulting Firm to support in quantifying ecosystem services in physical terms.	-	-	-	36,000	36,000	-	-	36,000	MoE
Contractual services-Company	Academic/research institutions to conduct research on resilience-enhancing restoration and agriculture practices.	-	-	-	53,479	53,479	-	-	53,479	MoE
Contractual services-Company	Local Consulting Firm to coordinate and consolidate knowledge products in the project's KMS and	-	-	-	53,500	53,500	-	-	53,500	MoE

	ssess feasibility of digital technologies for agroecology.									
Contractual services-Company	Local Consulting Firm to advise on digital tools for soil conservation, sustainable farming, and ecosystem resilience; and design KMS system architecture and integrate with CEMIS/sectoral systems including administer the KMS.	-	-	-	117,300	117,300	-	-	117,300	MoE
Contractual services-Company	Local Consulting Firm to develop digital agroecology solutions.	-	-	-	191,775	191,775	-	-	191,775	MoE
Contractual services-Company	Local service company for the maintenance of M&E System for Project/Program Monitoring.	-	-	-	-	-	25,000	-	25,000	MoE
International Consultants	International consultant (s) to conduct a comprehensive assessment, develop an economic case and policy recommendations for sustainable, climate-resilient agroforestry, investment strategies for scaling agroforestry, and high-level advocacy event to promote agroforestry.	-	33,000	-	-	33,000	-	-	33,000	MoE
International Consultants	International Consultant (s): *1) Natural Capital Accounting Specialist/Environmental Economist* - to design ecosystem service valuation methodology, NCA Roadmap, and training to account compilers; 2) Produce user-friendly NCA reports, contribute to awareness-raising, and knowledge materials under; *2)) Knowledge Management Specialist* - to design KMS, document all knowledges & lesson learnt and dissemination to stakeholders	-	-	-	99,000	99,000	-	-	99,000	MoE
International Consultants	International Consultant to conduct independent mid-term review and terminal evaluation.	-	-	-	-	-	36,000	-	36,000	UNDP
Local Consultant	National Consultant to review watershed governance policies and management plans, develop policy briefs, and train government representatives on implementation of the recommended policy briefs.	77,350	-	-	-	77,350	-	-	77,350	MoE
Local Consultant	Local consultant to conduct SESA and ESIA, and provide inputs to the project risk register, SESP and ESMF.	-	68,084	-	-	68,084	-	-	68,084	MoE
Local Consultant	National Consultant (s) to: 1) provide policy advisory to the MoE and inter-ministerial coordination; develop the National Capital Account strategy and roadmap; 2) develop communications strategy & products; 3) develop scaling strategy, integrate the Knowledge Management System, and technical assistance to government ministries for scaling IWM approaches.	-	-	-	80,750	80,750	-	-	80,750	MoE

Local Consultant	National consultant to conduct independent mid-term review and terminal evaluation.	-	-	-	-	-	21,000	-	21,000	UNDP
Training, Workshops, Meetings	Trainings/Workshops/Dialogues/launching events: to contribute to the development of a web-based decision-support tool (DST) and SoP, MoE personnel capacity building, update the Tonle Sap Basin Watershed Restoration, Rehabilitation, and Conservation Plan and SOPs, stakeholder dialogues for watershed management, co-management strategies and actions for NbS, and detailed spatial map for SSR and PKNP demarcation, land registration, and zoning.	155,160	-	-	-	155,160	-	-	155,160	MoE
Training, Workshops, Meetings	Trainings/Learning workshops: 1) Train lead-farmers and 2,000 farmers in three communes on agroforestry practices. This includes training material, refreshment, transportation, field visits to farmers, engagement and learning events with communities and women's groups, 2) learning and validation workshops to assess, design, and develop a roadmap for a blended finance mechanism.	-	194,270	-	-	194,270	-	-	194,270	MoE
Training, Workshops, Meetings	Trainings/Workshops: 1) trainings for government extension officers, lead farmers, farmers, selected CBOs, on relevant topics such as climate-resilient agricultural practices, value chains, market linkages, certified seed production, and eco-tourism initiatives; 2) Business matchmaking events and forums for contract negotiation.	-	-	430,378	-	430,378	-	-	430,378	MoE
Training, Workshops, Meetings	Trainings/Workshops: 1) *One 4-day workshop:* capacity-building programme for NCA compilers; 2) *One 2-day workshop:* NCA awareness-raising for policymakers; 3) Knowledge exchanges and participation in regional forums; 4) An economic valuation workshop on ecosystem services in the SSR Watershed; and 5) Workshop with agricultural academy to support agricultural studies.	-	-	-	34,668	34,668	-	-	34,668	MoE
Training, Workshops, Meetings	Annual Project Steering Committee meetings and PMU project monitoring and workshop to develop M&E System.	-	-	-	-	-	21,000	-	21,000	MoE
Training, Workshops, Meetings	Project Inception workshop.	-	-	-	-	-	-	12,171	12,171	MoE
Office Supplies	Office stationary, Ink, photocopy, other logistic support.	-	-	-	-	-	-	22,000	22,000	MoE
Travel	Travel for local consultants to faciliate dialogues, coordinating the development and implementation of the SSR Watershed and PKNP restoration action plan .	1,975	-	-	-	1,975	-	-	1,975	MoE

Travel	Travel costs: 1) for extension officers and other parties to project site for delivering of materials, transport of labour to site, and refreshments for all parties; 2) for conducting a comprehensive assessment of potential funding sources; 3) contribute to the design of blended finance framework for climate-responsive watershed management in the TSB , 4) contribute to the development of an implementation roadmap for blended finance mechanism.	-	31,025	-	-	31,025	-	-	31,025	MoE
Travel	Travel costs for PMU and consultants for selection and formalisation of agreements with 5 principal lead farmers, 330 lead farmers, and engagement with farmer groups to assess the specific seed requirements including a combined visit (Government extension officer and one NGO technical expert) per lead farmer per year.	-	-	100,840	-	100,840	-	-	100,840	MoE
Travel	Travel for project steering committee, PMU for project monitoring, and safeguard assessment and monitoring.	-	-	-	-	-	22,125		22,125	MoE
Travel	Travel for PMU and MoE from Phnom Penh to Siem Reap and other sites.	-	-	-	-	-	-	40,000	40,000	MoE
Other Operating Costs	Design and Printing of Policy Brief	5,000	-	-	-	5,000	-	-	5,000	MoE
Other Operating Costs	Professional services fee for audit/spot-check to MOE	-	-	-	-	-	-	25,000	25,000	UNDP
Other Operating Costs	Telephone card allowance and internet connection for PMU.	-	-	-	-	-	-	12,500	12,500	MoE
Grand Total		**693,071**	**3,100,744**	**1,607,994**	**767,040**	**6,168,849**	**197,541**	**318,313**	**6,684,703**	

Please explain any aspects of the budget as needed here

ANNEX I: RESPONSES TO PROJECT REVIEWS

From GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF.

Responses to LDCF Council and STAP Comments

The table below details how comments received during the preparation of PIF were accounted for during the PPG phase.

Comment	Response and Actions
LDCF Council	
Canada Comments • The project presents a strong landscape approach and provides confidence in contributing to a broad set of agri-food outcomes. However, we would welcome more clarity on the approach to improving food security. The project could benefit from reinforcing the importance of agricultural trade (for imports) to meet variable and surge demand of the tourism industry to ensure this temporal food pressure is not entirely borne by this agriculture system. Facilitating food trade from other regions is an important solution to complement the proposed integrated water management approach of the project.	The primary pathway for improving food security is through the promotion of improved agricultural practices. This will reduce the impact of climate change impacts of food production. This will be supported through secondary pathway of improving market access – which in turn will strengthen agricultural livelihoods, thereby improving the resilience of rural communities, and empowering farmers to continue to invest in resilient food production processes. The project design has been further developed to describe these pathways in more detail. Regarding imports, while the project does not directly reinforce trade systems for food imports, the market development for agricultural produce (which includes local and regional markets) will have the potential to work in both directions to balance food supply and demand.
2. ***Germany Comments*** Germany approves the PIF in the work program but asks that the following comments are taken into account: Suggestions for improvements to be made during the drafting of the final program proposal: • Component 4.2 mentions that innovative technologies for climate smart agriculture, agroecology and soil conservation would be identified to enhance community and ecosystem resilience in the TSB. While Germany approves this idea, we appreciate more information on what kind of innovative technologies use is planned, given that the core of the project is Nature based solutions. • Monitoring and Evaluation is a vital part of the project, as outlined in component 5. The establishment of an M&E programme to collect and curate lessons learned from project activities can build a solid foundation for future planning of projects. We would like to see this supported by indicators that are applicable to use for lessons learned for future projects. • Germany welcomes the complementarity between interventions under the GEF-8 project and this LDCF project. This shows holistic planning and potentially great benefits for the TSB region. In order to reach the maximum complementarity between the projects, we would like to see more elaboration on how the complementarity will be ensured throughout the implementation of both projects.	• The details on the innovative technologies have been further developed. Through the assessments and consultations during project development, digital technologies for the agriculture value chains were highlighted as a key opportunity, which has become the focus of this activity. • The MEL system under Output 5.1 will define clear processes, roles, and responsibilities for tracking environmental and socio-economic outcomes, ensuring that lessons learnt inform both adaptive management in target sites and the replication of successful approaches across Cambodia and beyond. • The complementarity between these two projects has been infused throughout the project design and implementation strategies. This includes identifying options for sharing resources, as well as linking specific Outputs towards achieving broader, shared long-term outcomes.
Scientific Technical Advisory Panel (STAP)	
Project Rationale and Description	
STAP appreciates that the PIF lays out two climate futures, one more moderate and the other more extreme. This creates a series of futures that captures at least some of the range of uncertainty related to future climate. Further, this PIF brings in the economic future and weaves climate and economic growth together. This integrated	Future narratives have been further explored during the PPG stage. See the response to comment 6 and 7 below for more detail.

narrative does not really present more than one plausible future, which would have been helpful, but it does establish a baseline against which project impact can be reasonably measured.	
The theory of change, while complex, presents clear expected impact pathways whose assumptions can be assessed in the project preparation phase and whose outcomes should be measureable at project completion. Given this, it was surprising that the project chose to delay the assessment of the potential resilience of interventions to Component 2. The point of developing future narratives is to create something against which to measure that resilience, so the PIF might have presented at least a preliminary assessment.	The selection of the intervention strategy for Component 2 was founded on the concept of resilience, drawing on best practices and national priorities for use of NbS. The technical design during the PPG phase has identified nuanced details that will ensure the resilience of individual measures in line with the future narratives (for example ensuring the tree species chosen for restoration are resilient to the expected future climate conditions and where possible provide the necessary ecosystem services to enhance the sustainable development opportunities of local communities).
Given the integrated narrative presented by the project, and the high rates of economic growth sought/expected by the government, it seems clear that Cambodia is seeking a transformational pathway forward. Under such a pathway it makes sense to ask if the resilience of current practices that are not at the heart of that economic growth (i.e. farming) and which might be associated with some challenges of degradation (i.e. extensification) should be the goal of this project. Does Cambodia expect its workforce to shift from the agricultural to other (tourism, etc.) sectors to drive this growth? Should some of the workforce shift? If so, the discussion of rural livelihoods needs to carefully consider what the project is making resilient, and if it is doing so in a manner that will allow for these future transformations.	Given the importance of local food production (something that is highly valued by the RGoC), the intention is not to shift people from farming to other livelihoods. Instead, the government seeks to improve the production potential of existing farmland. This is complemented by the livelihood development not to shift people away from agriculture, but rather to reduce incentives for maladaptive practices that degrade ecosystems by creating sustainable alternatives. The idea is to diversify household income and increase the involvement of community members in the value chains of sustainable livelihoods. Moreover, in addition to the livelihood diversification under this project, links have been made with the ecotourism development proposed under the complementary ER-IP project. Ecotourism offers a strong alternative in Cambodia that works alongside traditional livelihoods to incentivize conservation practices.
Under Component 3, there appears to be an implicit assumption that unsustainable livelihoods practices are a significant driver of degradation. However, this is not mentioned earlier in the PIF (i.e. as part of the project rationale) and it is not clear whether or not this is in fact true, yet this assumption appears to be shaping proposed interventions. As the project has not yet consulted with local targeted communities, engagement with these communities and their practices will be critical to the successful final design of this project, otherwise there is a risk that selected interventions will be aimed at a problem that does not really exist.	Yes, unsustainable livelihoods – especially the expansion of agriculture into forests and logging – are considered major drivers which the project intends to address. These drivers are noted in the root causes and drivers of vulnerability section of the PIF, and have since been expanded on through additional research and consultations on the matter. This includes integrating extensive work has done on the subject as part of the preparation of the ERIP project. Moreover, extensive community engagements have been held during the PPG phase to further understand these drivers and tailor the interventions to the specific needs of the communities.
In the risk section of the PIF, there is a discussion of the challenges related to land tenure and some of the proposed interventions. Given the nature of these interventions and the importance of land tenure in general, it should be addressed as a central component of project design, not merely in the context of risk mitigation. It is impossible to select interventions that will be taken up and durable without incorporating land tenure issues into the project design.	The challenges related to land tenure are well acknowledged. Given the complexity and sensitivity of the situation, the project does not attempt to change land tenure systems in the project area — this is deemed outside the feasible scope of the project (as noted by the reviewer, such changes come with significant political implications). Instead, and in coherence with the RGoC, the approach will focus on creating systems to work within the existing land-tenure systems, working with community structures to create sustainable interventions with strong local ownership. This is underpinned by strong consultative approaches — both during the project preparation and continuing through implementation — that lead to co-development of the site-specific interventions, promoting local ownership.
STAP Specific points and suggestions.	
Develop narratives of how the future could unfold that captures different futures in terms of economic growth and climate to fully assess the resilience of interventions across a range of plausible futures. Interventions can then be assessed in light of both futures to capture a sense of their robustness across diverse futures. See STAP's Simple Future Narratives Brief and Primer for more information.	As stated by the reviewers above, the foundations for the future narratives have been identified, specifically in relation to climate and the economy, which will interact in various ways to influence the future of rural livelihoods and economies. The Future narratives have been further elaborated in line with the Simple Future Narratives Brief and Primer.
Address the issue of land tenure as part of the interventions and activities. The project will need a clear plan for integrating existing land tenure arrangements into its project implementation or the interventions either will not be taken up, or will not be durable. Challenges to the local land tenure system could also spark local or even national political pushback.	The challenges related to land tenure are well acknowledged. Given the complexity and sensitivity of the situation, the project does not attempt to change land tenure systems in the project area — this is deemed outside the feasible scope of the project (as noted by the reviewer, such changes come with significant political implications). Instead, and in coherence with the RGoC, the approach will focus on creating systems to work within the existing land-tenure systems, working with community structures to create sustainable interventions with strong local ownership. This is underpinned by

	strong consultative approaches — both during the project preparation and continuing through implementation — that lead to co-development of the site-specific interventions, promoting local ownership.
Clearly align the project description and proposed activities and interventions with the intertwined climate/economic future of Cambodia. If Cambodia is seeking to transform itself, the project will have to carefully consider what it means to make an existing activity resilient. While protecting the food supply in the country is certainly important, there are many ways to do this – making existing ways of raising food, etc. resilient might not do so in a manner that aligns with the economic goals. Interventions should promote outcomes that both address the impacts of climate change and the economic and social expectations of the government.	The climate rationale and link to future narratives has been discussed for each intervention in the project document, engaging relevant local experts to refine the specific activities to meet the local strategic goals of the country as set out in the RGoC's Pentagonal and Circular Strategies. The MoE has also been closely involved in the project design and as the implementing partner will be engaged throughout implementation to ensure that the approaches align with government economic development goals. For food security, Side 3 (i.e. promotion of agriculture and rural development) of Pentagon 4 (i.e. Resilient, sustainable and inclusive development) puts the promotion of agriculture and rural development as a core national priority. This includes strategies to maximize productivity, quality, safety, diversity, value add, and resilience.
Assess the robustness of proposed interventions across a range of climate futures. This should be done early (i.e. design stage) so that PPG activities can focus on either new interventions that could not be assessed, or answer questions about existing envisioned interventions raised by a preliminary assessment of their robustness across plausible futures.	The robustness of the interventions was a key consideration in designing the approach, with a priority for long-term sustainable interventions. This includes links with economic development – for example through market linkages for sustainable produce – as well as resilience of the measures themselves to climate impacts such as drought and flood. These narratives were mapped out at the inception of the PPG phase, ensuring that the work of local experts kept this at the forefront from the beginning of the technical assessments. As a result, the resulting design of interventions has accounted for the robustness of the approaches proposed.
Engage with targeted communities and carefully identify the drivers of degradation so assumptions about local livelihoods are supported by data. This will allow the project to select interventions appropriate to the challenges they are trying to address without unnecessarily placing the burden for such outcomes on smallholders and other economically marginalized groups who might not be a significant source of these problems.	The overarching drivers of degradation are fairly well understood in Cambodia; however, there are some elements that need closer investigation to fully understand why some existing measures by the RGoC have not fully addressed the drivers. During the PPG phase, detailed consultations were held from national to community level to better understand the context and challenges that underpin the barriers. This included consideration of market linkages and private sector linkages to leverage investment into sustainable watershed management practices that uplift communities.