ADAPTATION FUND

REQUEST FOR PROJECT/PROGRAMME FUNDING FROM THE ADAPTATION FUND

Climate Change adaptation through small-scale & protective and infrastructure interventions in coastal settlements of Cambodia

Submitted by the
United Nations Human Settlements Programme (UN-Habitat)

UN HABITAT
FOR A BETTER URBAN FUTURE

The Adaptation Fund Board Secretariat
1818 H Street NW
MSN P4-400
Washington, D.C., 20433
U.S.A
Fax: +1 (202) 522-3240/5
Email: afbsec@adaptation-fund.org

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PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category:	Regular
Country/Cities:	Cambodia
Title of Project/Programme:	Climate Change Adaptation through small-scale & protective infrastructure interventions in coastal settlements of Cambodia
Type of Implementing Entity:	Multilateral Implementing Entity
Implementing Entity:	United Nations Human Settlements Programme (UN-Habitat)
Executing Entity/ies:	Ministry of Environment, National Committee for Sub-National Democratic Development
Amount of Financing Requested:	US$ 5,000,000

Project Summary

The proposed project's main objective is "to enhance the climate and disaster resilience of the most vulnerable coastal human settlements in Cambodia through greater coverage of protective and basic interventions". To align with a government request to promote ecotourism in Cambodia, this project targets poor and vulnerable areas where ecotourism is popular or has growth potential. It is structured around the following components:

Component 1: Comprehensive vulnerability / baseline assessment and action plans completed in the target towns/provinces (USD 500,000)

Component 2: Capacity built to install, protect, and manage infrastructure and natural assets, while also increasing capacity to plan for replication in other areas (USD 500,000)

Component 3: Resilience built through small-scale protective and basic service infrastructure and natural assets (USD 3,000,000)

Component 4: Knowledge and awareness enhanced and sustainability ensured (USD 170.512)

1. Project Background and Context

The problem

Climate change is a major challenge for reaching national development goals
In recent years, the Kingdom of Cambodia was among the countries most affected by extreme weather events in the Asia Pacific region[1], and constantly ranks among the most vulnerable countries in the world according to the annually published Climate Risk Index[2] as well as the Climate Change Vulnerability Index[3]. Between 1991 and 2014, extreme hazards, floods and storms caused economic losses amounting to more than US$ 235 million and killed over 1500 people[4]. Figures show that the country's vulnerability to extreme weather events such as floods, and cyclones cause most losses in terms of both mortality and economic losses[5].

Cambodia's climate change vulnerability mainly originates in its geography and high dependence on the agriculture sector. The country further shows a severe lack of coping capacity with regard to its physical infrastructure and its institutions stemming from limited financial, technical and human resources[6]. Coastal zones, as well as nationwide infrastructure are amongst the most affected in the country[7]. This also affects the fast growing tourism sector, especially in coastal areas, on which the economy more and more relies. Rising sea levels can potentially impact coastal systems in multiple ways, including flood and storm damage, inundation, loss of wetlands, erosion, saltwater intrusion, and rising water tables[8].

In addition, there is growing risk that severe weather events will impact Cambodia. Climate Change therefore makes it more and more difficult for Cambodia to continue achieving its main national development priority, i.e. to significantly reduce poverty rates while simultaneously fostering economic growth at a yearly rate of seven per cent, as outlined in its National Strategic Development Plan (NSDP) 2014-2018.[9] And although Cambodia managed to graduate from the status of low income country to lower-middle

1 Global Climate Risk Index, 2015. Online at https://germanwatch.org/en/9531
2 Global Climate Risk Index, 2016, p. 23. Online at https://germanwatch.org/fr/download/13503.pdf
3 Climate Change and Environmental Risk Atlas 2015. Online at https://maplecroft.com/portfolio/new-analysis/2014/10/29/climate-change-and-lack-food-security-multiply-risks-conflict-and-civil-unrest-32-countries-maplecroft/
4 Global Climate Risk Index, 2016, p. 23, online at https://germanwatch.org/fr/download/13503.pdf. UNISDR Global Risk Assessment 2017, online at http://www.preventionweb.net/countries/khm/data/. The International Disaster Database (EM-DAT), 2017, online at http://www.emdat.be/country_profile/index.html
5 Index for Risk Management (INFORM) Country Risk profile for Cambodia, 2017. Online at http://www.inform-index.org/Countries/Country-profiles/iso3/KHM
6 INFORM Country Risk profile for Cambodia, 2017. Online at http://www.inform-index.org/Countries/Country-profiles/iso3/KHM
7 Cambodia's Intended Nationally Determined Contributions, p. 2. Online at http://www4.unfccc.int/submissions/INDC/Published%20Documents/Cambodia/1/Cambodia's%20INDC%20to%20the%20UNFCCC.pdf
8 Second National Communication to the UNFCCC, p. xv. Online at http://unfccc.int/resource/docs/natc/khmnc2.pdf
9 National Strategic Development Plan 2014-2018, p. 4. Online at http://www.mop.gov.kh/LinkClick.aspx?fileticket=XOvSGmpI4tE%3d&tabid=216&mid=705

income country in 2016[10] as intended by its NSDP[11], the uncertainty and intricacy of increasing climate change risks and threats significantly hampers economic growth and development potential in the future[12].

Climate change projections and expected impacts

Climate change projections

Like other countries in the Asia-Pacific region, Cambodia's climate is governed by a monsoon weather cycle, with a wet season between May to November that is dominated by heavy rainfall and average temperatures of 28ºC and a dry season from November to May, with an average maximum temperature of 38ºC in April and an average minimum temperature of 17ºC in January. Over the last decades, mean temperatures in Cambodia have increased significantly, a trend that is predicted to continue with projected increases in monthly averages between 0.013ºC and 0.036ºC per year by 2099 with higher predictions for locations at low latitudes[13].

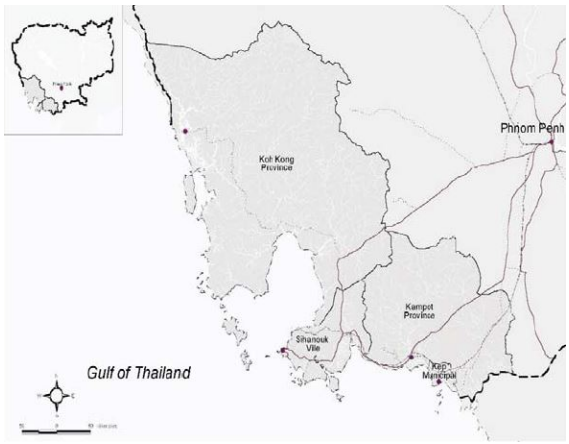

Figure 1 Cambodia coastal areas. *Source*: *Cambodia Coastal Situation Analysis, 2011, p. 6. Online at http://cms daa.iucn.org/downloads/cambodia_coastal_situation_analysis_final.pdf*

Rainfall varies within the country and is strongly influenced by topography, declining in the central plains, and increasing in the upland areas. However, rainfall is heaviest along the 435km coastline stretching from Koh Kong Province bordering Thailand in the west, Sihanoukville Municipality which contains Cambodia's largest deep-water sea port, Kampot province bordering Vietnam to the East, and Kep Municipality (see Figure 1). While lowlands may receive average annual rainfall of 1400mm, data shows that rainfall within coastal areas can be as high as 4000mm per year or higher[14] (see Figure 2).

10 The World Bank, 2017. Online at http://data.worldbank.org/?locations=KH-XN

11 National Strategic Development Plan 2014-2018, p. 4.

12 Cambodia Climate Change Strategic Plan 2014-2023, p. xv. Online at http://www.bb.undp.org/content/dam/cambodia/docs/EnvEnergy/CCCAProjects/Cambodia%20climate%20change%20strategic%20plan%202014-2023.pdf

13 Cambodia Climate Change Strategic Plan 2014-2023, p. 8.

14 Heng Chan Thoeun, 2015, p. 63. Online at http://dx.doi.org/10.1016/j.wace.2015.02.001

Notes: Shows rainfall patterns (left) and temperature distributions (right) for Cambodia taking 1960-1990 averages. Source: The World Bank Group, 2011, p. 3. Online at: www.worldclim.org/current

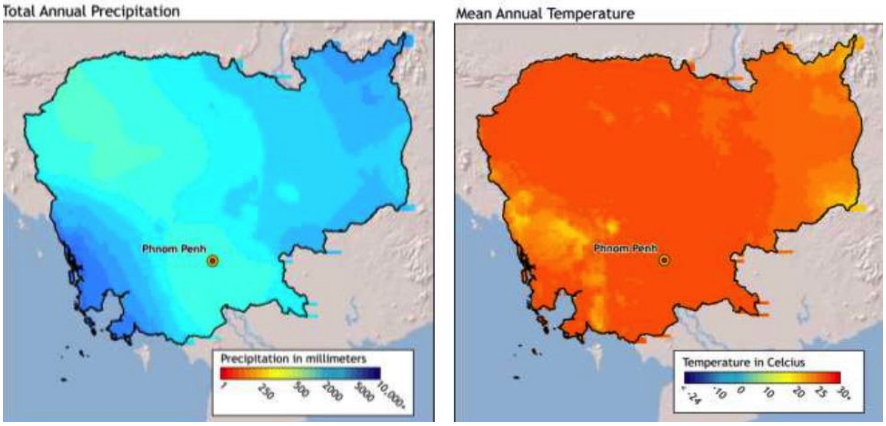

Figure 2 Annual Climate Baseline for Cambodia.

Although evidence of climate change impacts on rainfall patterns remains inconclusive, predictions for average annual rainfall clearly indicate further changes in rainfall for Cambodia in the medium- to long-term future. Projections show evidence to suggest that rainfall between the months of June to August will most likely increase in the north-west, while there is a decreasing trend projected for the northeast of the country.

Due a history of civil conflict, there are only very few long-term historical datasets available for climate observations in Cambodia. The Intergovernmental Panel on Climate Change (IPCC), however, provides an overview of forecasting trends from 21 climate models for South-East Asia as a region. This summary states that i) for the period 2081-2100 temperatures will likely increase in the range of 1.5ºC to 3.7ºC; ii) while the number of hot days and nights will increase, cold days and nights will likely to become less frequent; iii) rainfall will most likely increase with projections ranging from a decrease of 2% to increases of up to 15%, with projected increases in the intensity of precipitation; iv) sea-levels in the region are forecasted to rise between 0.18 to 0.56cm by the year 2100, though some research has projected sea-level rises in the region of around 1 metre.[15]

Expected impacts

15 See for example Rahmstorf, S., 2007 and Ananthaswamy, A., 2009.

Due to its vulnerability toward the effects of drought, floods and sea level rise, Cambodia's agriculture, human lives and assets were severely damaged by floods and droughts between 2000 and 2010[16]. The 2011 floods resulted in economic losses of around 4% of its Gross Domestic Product (GDP)[17]. Likewise, the 2013 floods caused economic losses of around US$356 million, of which US$153 million was the estimated value of the destruction of physical assets (damage) in the affected areas, and US$203 million the estimated losses in production and economic flows"[18].

Increases in sea levels are especially alarming for Cambodia's coastal areas that are already experiencing severe seawater intrusion, beach erosion, high tides, and frequent storm surges. Additional impacts such as land subsidence in the region may even further intensify its effects[19]. Especially low-lying areas such as coastal settlements, seaports, coastal fisheries, mangrove forests, and tourism facilities would equally be affected. As an example, research by the Danish International Development Assistance found that around 56% of the low-lying south-western coastal city of Koh Kong would be submerged by a one-meter rise in sea-levels. This finding equally holds true for other areas along the coastline of Cambodia[20] (see fig 3).

16 MoE et al. (2013), p. 187.

17 2011 GDP (current US$) amounted to US$12.83 billion (World Bank, online at http://data.worldbank.org/country/cambodia). The 2011 flood resulted in total economic losses of around US$0.521 billion (EM-DAT country profile).

18 Cambodia's Intended Nationally Determined Contributions, p. 3.

19 Erban, L.E., Gorelick, S.M. and Zebker, H.A., 2014, p. 1. Online at http://iopscience.iop.org/article/10.1088/1748932 6/9/8/084010/pdf

20 Danish International Development Assistance, 2008, p. 15. Online at https://www.weadapt.org/sites/weadapt.org/files/legacy-new/placemarks/files/Cambodia.pdf

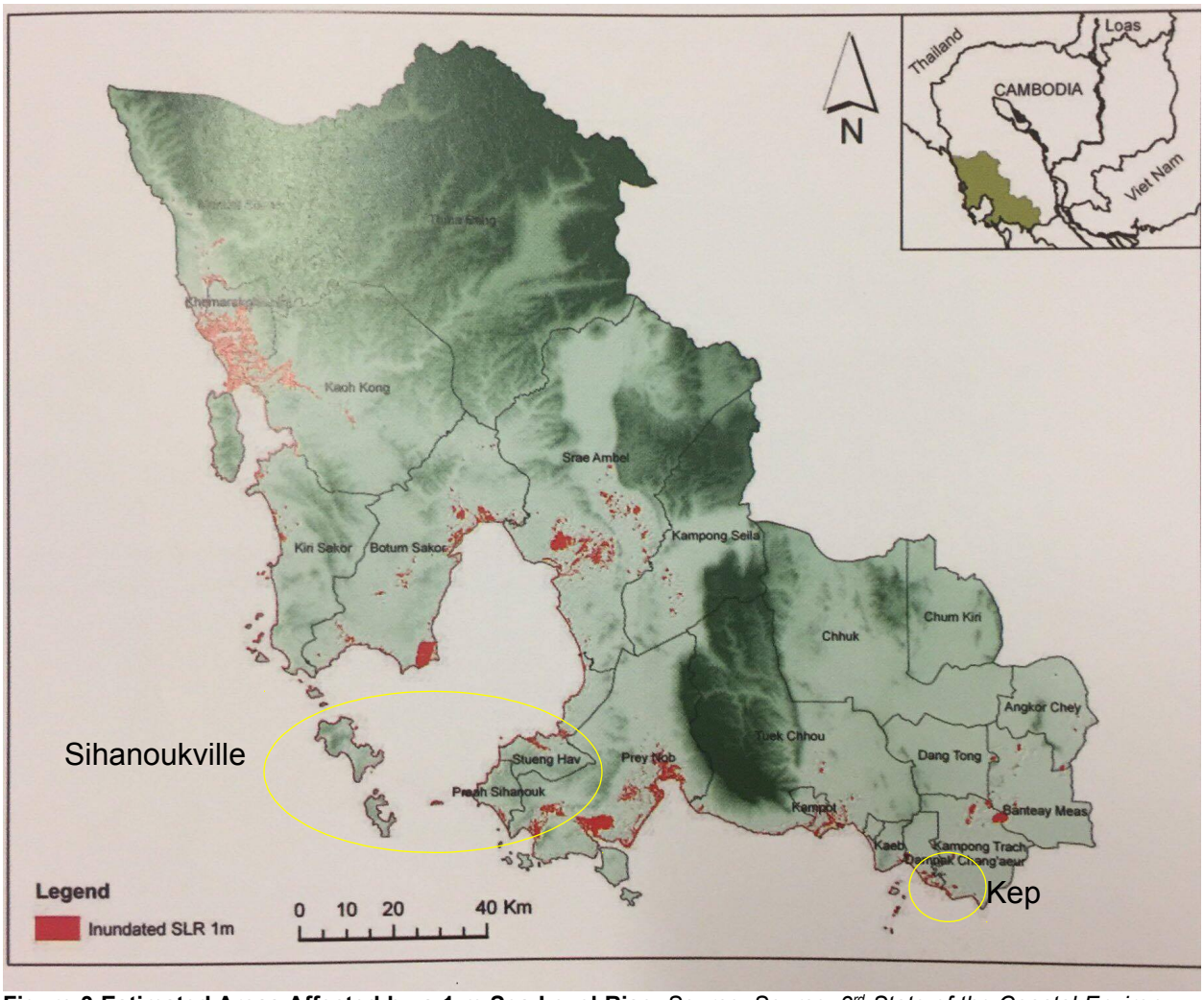

Figure 3 Estimated Areas Affected by a 1 m Sea Level Rise. *Source: Source: 3rd State of the Coastal Environment, Climate Change and Socio-Economy Report 2013*

Cambodia's coastal provinces already suffer from salinization of surface and groundwater resources due to storms and droughts[21]. The rise in sea levels will only exacerbate these problems. Further, sea-level rise is expected to go hand in hand with an increase in coastal erosion that may have major impacts on the frequency of flooding of economically vital coastal infrastructure such as coastal resorts and harbours, significantly hampering tourism potential. Likewise, an increase in sea-levels is likely to worsen inundation from storms and storm surges.

The above impacts clearly demonstrate the importance for the country to build resilience to natural disasters and prepare vulnerable areas accordingly so that the impact of

21 National Adaptation Programme of Action to Climate Change (NAPA), 2006, p. 4. Online at http://unfccc.int/resourc
e/docs/napa/khm01.pdf

climate change risks and disasters are minimized to the most possible extents. This will be vital for Cambodia to continue its path along increasing economic growth rates and to be able to protect its citizens, especially those living in coastal areas.

Economic context

> **Climate change is already causing economic losses but the government faces challenges in terms of financial resources and technical capacity to respond.**

According to most recent statistics published by the World Bank, in 2015 Cambodia's Gross National Income (GNI) amounted to US$1,070 per capita, growing at 7 percent per year. This trend is slightly decreasing with forecasted GDP growth rates of 6.9 to 6.8 per cent for the years 2017 and 2018, respectively.[22]

Cambodia's economy is narrowly based however, and driven by four main sectors: garment manufacture, tourism, construction and agriculture, with three of those predominantly urban sectors, heavily dependent on building resilient settlements and infrastructure. Productive share in Cambodia is relatively evenly distributed, with its services sector as the largest contributor at 37.8% of total gross output, followed by the industry sector at 31.3% and the agriculture sector at 30.9%. Intermediate inputs as a share of total cost of production in Cambodia is on average almost equally divided, i.e. 50% comes from domestic resources while the other half is imported.

At the sectoral level, Cambodia's industry sector depends more on domestic sources with respect to their inputs than on imports, while on the other hand its services sector depend more on imported inputs, specifically the transportation, communication and trade sectors. Similar to its production distribution data, Cambodia's GDP heavily depends on both the agriculture and services sectors that accounted for more than three quarters of the country's total GDP in recent years. The tourism sector shows high annual growth rates with high shares in total GDP[23]. The direct contribution of the sector to GDP was around US$2.3 billion (13.5% of total GDP) in 2015, and is forecast to rise by 6.3% per annum between 2016-2025, to US$4.58 billion (12.4% of total GDP) in 2025. Total contribution to GDP amounted to US$5.09 billion (29.9% of GDP) in 2015, and is forecasted to rise by approximately 6.5% annually to US$10.32 billion (28.0% of GDP) in 2025. In 2014, the total contribution of tourism to employment, including jobs indirectly supported by the industry, was 26.4% of total employment (2,221,500 jobs). This is expected to rise by 3.3% per annum to 3,199,000 jobs in 2025 (32.6% of total)[24]. In the same year tourism investment was US$0.4 billion, or 15.6% of total investment. It is expected to rise by 6.4% per year within the next decade to US$0.8 billion in 2025 (14.1% of total).

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22 The World Bank, 2017. Per capita GNI is displayed using the World Bank's Atlas method, which smoothens a country's GNI per capita by price variations and exchange rate fluctuations, taking into account the year of observation and the two previous years. It further adjusts the country's own and the international rate of inflation, with the international inflation rate being the euro area, the United Kingdom, the United States and Japan since 2001. Online at http://databank.worldbank.org/data/reports.aspx?source=2&country=KHM

23 Cambodia Climate Change Strategic Plan 2014-2023, p. xv.

24 Word Travel and Tourism Council, Economic Impact 2015 Cambodia. Online at https://www.wttc.org/-/media/files/reports/economic%20impact%20research/countries%202015/cambodia2015.pdf

The share of foreign visitors in 2015 amounted to nearly 15% of total visitors to the coastal area[25]. Securing continued economic, employment as well as investment growth will heavily dependent on the country's resilience along its coastal lines. Visitors to Preah Sihanouk and Kep have increased year by year. Based on the Provincial Investment Programme report 2,032,881 tourists visited Preah Sihanouk in 2016, a 16.65 percent increased compared to 2015. As for Kep, visitors increased from 761,206 in 2015 to 1,079,493 in 2016.

Both provinces recognize tourism as an important industry and both provinces have a great potential for eco-tourism, with its nature-, livelihood- and community-based tourism activities. However, the tourism sector is also affected by climate change, especially beach erosion, as described in the Environmental Section below. For adaptation to climate change, natural resource enhancement and preservation is therefore necessary, as well as improvement of drainage and the management of water supply, sewage and waste. This will benefit tourism potential directly but also the poor and vulnerable, especially from livelihoods and basic services perspective.

Social context

> **Although the government recognize the importance of resilience to natural disasters in the poor communities, they face limited financial resources and human capacity as well as comprehensive data sets.**

Cambodia has a total population of 15.58 million (of which around 51.3% are women) and this figure is growing at a rate of 1.6% annually. Urban areas are growing much more rapidly at 2.6% each year.[26] This is one of the main reasons for the country's increasing demographic pressures over the past years. According to the Fragile States Index, in 2016 Cambodia was one of the few countries in the region that were labelled a high warning status with regard to its state of development, which even marginally worsened within the last decade[27]. And although the country has a relatively high share of payments to labour in relation to its GDP compared to its neighbouring countries[28], uneven economic development only shows slightly improving trends[29]. While household poverty rates are highest in the north-east of the country, overall poverty rates remain high in the coastal area (Figure 4, left), especially considering its higher population density.

The population density map (Figure 4, right) shows that along the coast the cities of Sihanoukville, Kampot and Kep (from left to right) are among the most populated areas. The country's coastal population faces challenges such as low levels of education and

25 Cambodia Tourism Statistics Report, 2015, p. 5.

26 Displays data for the most recent available year 2015. The World Bank, World Development Indicators, 2017. Online at http://databank.worldbank.org/data/reports.aspx?source=2&country=KHM

27 The Fund for Peace 2017. Online at http://library.fundforpeace.org/library/fragilestatesindex-2016.pdf

28 56% of its economic gains are invested into labour force. Secretario, F. et al., 2009, p. 9. Online at http://depocenw
p.org/modules/download/index.php?id=62

29 The Fund for Peace 2017.

poor health and basic infrastructure services. It further shows an on-going deterioration of inequality between the mid-1990s and 2007, although poverty has reduced overall.

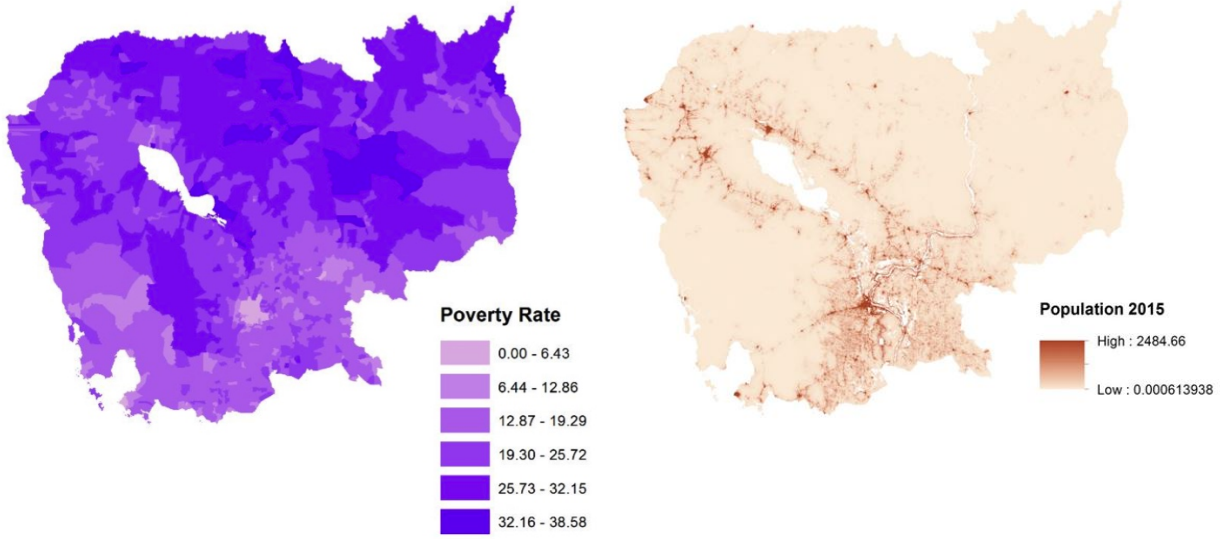
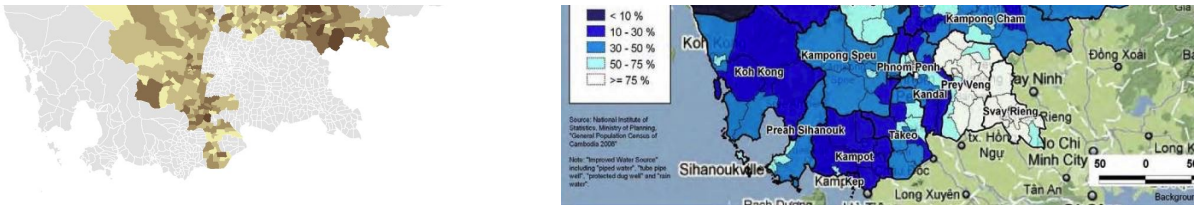


Figure 4 Distribution (%) of household poverty rates by districts and population density in 2015. *Source: Left: own illustration based on the United Nations Office for the Coordination of Humanitarian Affairs, 2015. Online at Open Development Cambodia. Right: Own illustration based on adjusted UN data from World POP. Online at World POP.*



The expected impacts of climate change in coastal regions, where hazards are likely to increase in frequency and intensity, challenge poverty reduction and health targets. This is due to the fact that poor communities predominantly live in high-risk areas and already lack access to basic services. Especially the frequency of storms and inundation, which are projected to increase with climate change, create conditions for the

Figure 5 Water and sanitation coverage in 2016 (left) and percentage of households with access to improved water sources in 2010 by district. *Note: Water and sanitation is displayed from low to high coverage in light and darker colours, respectively. Source: Left: own illustration based on WaterSHED data for its sanitation and hygiene project, covering 5,801 villages, from 527 communes across 58 districts. Online at Open Development.* Right: *Japan International Cooperation Agency, 2010, p. iv. Online at JICA*

spread of water- and vector-borne diseases, limit access to clean water and food, flood unsafe sanitation facilities, and isolate the population from health services. Notwithstanding advances in water, sanitation, and hygiene over recent years, the aforementioned issues cause death and have long-lasting impacts on poverty and food security. Approaches to deliver these services need to become sensitive to the impacts of climate change and related hazards. As a means to significantly reduce vulnerability, citizens need to get access to resilient basic infrastructure services such as clean water,

sewage, roads, electricity, or telecommunication, to name a few, and improving their resilience to natural disasters.

In a 2005 survey jointly compiled by the Global Environment Facility (GEF), the United Nations Development Programme (UNDP) and the Ministry of Environment (MoE) of Cambodia, respondents from different provinces around the country stated that during major natural disasters the main source of water for household consumption are wells (58%), ponds (14%), streams (12%) and rivers (9%)[30]. As further evident from Figure 4 (right), the overall percentage of households that can access improved water sources is still low, ranging in most districts between 10 to 30%. With regard to coastal district zones, while Sihanoukville provides between 30 and 50% of its households with access to improved water sources, Koh Kong and Kampot align with the country's overall trend of low access. Kep does not have any access to piped water. Figure 5 (left) further depicts information on the access to latrines and water filters from a 2016 project assessment. The lack of available data in this regard for most parts of the country is evidently showing the vital need for continued assessments.

Although the government intends to expand and improve basic infrastructure services throughout the country, the development and implementation of effective climate change strategies is constrained by limited financial resources and human capacity, a lack of reliable and comprehensive data sets, and research to support greenhouse gas inventory, mitigation analyses and vulnerability assessments. Natural disasters, intensified by climate change, have major impacts on basic services and need to be consequently addressed as a means to alleviate poverty and foster economic growth.

In line with the government's Nationally Determined Contributions (NDC) under the Paris Agreement on Climate Change, an approach to establish this should focus on the resilience of coastal zones and infrastructure in more general as they are among the areas impacted most severely by climate change.

Environmental context

> **Sea level rise due to climate change and changes of the mangrove systems accelerate coastal erosion and reduce the climate change resilience.**

As specified by the Ministry of Environment (MoE et al., 2013), forest plays an important role in maintaining the country's ecosystems as well as a source of various non-timber forest products. 27 percent of Cambodian land is categorized as protected forest area. In Preah Sihanouk, 26 percent of the land is categorized as protected forest area. In Kep this figure is 7 percent (see Figure 7, left).

However, forestry was drastically exploited in the last few decades due to illegal logging, encroachment, and economic land concessions. 16.1 percent of national forest cover

30 The study represents responses by villagers from 17 provinces surveyed. Source: MoE, GEF and UNDP (2005), p. 13. Online at http://camclimate.org.kh/en/documents-and-media/library/category/29-vulnerability-and-adaptation
.html?download=54:a-survey-of-rural-cambodian-households-vulnerability-and-adaptation-march-05

has decreased between 1965 and 2010, and it annually decreased 0.52% of forest coverage between 2002 and 2010[31]. This figure is one of the highest in the world.

Deforestation is also happening in coastal areas, especially for mangroves (see Figure 7, right). IUCN (2011) identified that approximately 3,500 to 4,000 hectares of former mangrove lands were converted to salt farms in Kampot Province and Kep city, even though salt pans affect to mangrove growth and soil fertility. Moreover, MoE et al. (2014) studied that mangroves in Prey Nob area in Preah Sihanouk are under threat by salt, charcoal use, industrial development, and so on.

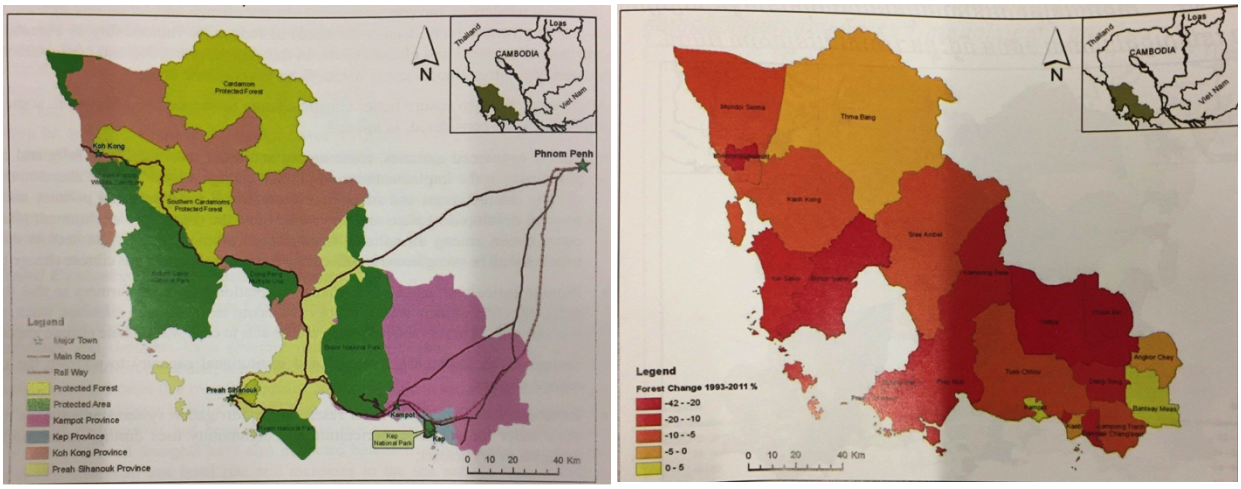


Figure 7 Land use of the Coastal Zone of Cambodia (left) and Percent reduction in forest area on district level from 1993 to 2011 (right). *Source: 3rd State of the Coastal Environment, Climate Change and Socio-Economy Report 2013*

Besides that 3,446 hectares of area in Preah Sihanouk province and 343 hectares of Kep province are estimated to be below mean sea level if the sea level rises by 1 meter in the future. MoE et al. also estimated that 3,530 hectares of mangroves in Preah Sihanouk and 13 hectares of that of Kep are located within 1 meter above today's mean sea level. Therefore, simultaneous occurrence of changes of the mangrove systems and sea level rise will accelerate coastal erosion as well as reduce the climate change resilience of the coastal areas[32].

Severe environmental degradation has taken place throughout the coastal area of Cambodia – especially in areas where there has been investment in infrastructure and tourism. Besides that, the often-informal nature of the target settlements creates environmental problems, especially in waste management. Moreover, the combined effects of sea-level rise, coastal flooding and on-shore development issues (especially disposal of waste water) is causing coastal erosion.

31 MoE, GEF and UNEP (2013), p. 31.
32 MoE, GEF and UNEP (2013), p. 190.

Figure 8: Mangrove deforestation in Preah Sihanouk (left), Exposed roots due to beach erosion and sea level raise in Preah Sihanouk (middle) and Erosion and solid waste in mangrove forest in Kep (right). *Source: UN-Habitat/Field photos.*

Focus of the Proposal

As described detail in the following section, the main objective of the proposed project is to enhance the climate and disaster resilience of the most vulnerable coastal human settlements on the coast of Cambodia through greater coverage of protective and basic interventions. To achieve above objective, this project focuses its actions on highly vulnerable settlements in Kep and Preah Sihanouk provinces, in the coastal area of Cambodia. In Kep province the project will target five Sangkats/communes with a target population of approximately 40,000, but interventions will benefit 50-100 percent of the population depending on the intervention (see annex 1 – Beneficiaries).

In Preah Sihanouk province the project will target ten Sangkats/communes with a target population of approximately 76,000, but interventions will benefit 50-100 percent of the population depending on the intervention (see annex 1 – Beneficiaries).

The most problematic climate hazards identified in the target areas are sea level rise, storm surges, floods, strong waves, seawater intrusion and droughts, leading to coastal erosion, low agriculture production, destroyed houses, slowdown of fishing activities, damaged roads and dikes, lack of clean water supply, poor sanitation, health issues and threatening of (eco-)tourism.

The possible resilience building interventions identified during community consultations (see – climate change – impacts, barriers for adaptation and possible interventions analysis) will be further analysed and prioritized during the full proposal development stage by looking at community vulnerabilities, community needs (especially of women, youth and disabled people, but also of the identified small Muslim group, cost-effectiveness of interventions and potential environmental and social impacts.

The following Table gives a brief overview of the target areas, the climate hazards they are exposed to and the underlying vulnerability they face. This table has been compiled through a combination of secondary data and consultations undertaken by the formulation mission for this concept note, which is detailed further in Part II Section H.

Table 1 – Summary of target locations and vulnerability

Province	Location (municipality/district or commune/sangkat)[33]	Climate Hazards	Underlying vulnerability
Preah Sihanouk	Koh Rong (Sangkat)	Sea level rise, storms, coastal flooding	Rapid development/investment, lack of basic services, and infrastructure, poverty, lack of access to technology and livelihoods (despite forthcoming tourism development)
	Prey Nop (District)	Sea level rise, storms, coastal flooding, river flooding, drought	Limited protective infrastructure and natural assets, lack of basic services (esp water)
	Sangkat Muoy	Sea level rise, storms, coastal flooding	Lack of basic services, tenure insecurity
Kep	Kep (Municipality)	Sea level rise, storms, coastal flooding, drought	Lack of basic services (especially water), high land prices
	Damnak Changkor (District)	Sea level rise, storms, coastal flooding, drought	Lack of basic services (especially water), high land prices

Figure 9 Solid waste blocks sewers and drains (left), Flood in Preah Sihanouk (middle), Inundation damaged housing (right), Livelihood with less sanitation in vulnerable houses near solid waste (bottom left), Unsightly and smelly water discharge along the beach in Preah Sihanouk (bottom centre), and Coastline erosion and sea level rise (bottom right). *Source: Source: UN-Habitat/field photos.*

33 In Cambodia, Municipalities and Districts are the same administrative level. Municipalities are primarily urban in character, whereas districts are primarily rural. Sangkats and Communes are one level lower that municipalities/districts. Sangkats are primarily urban, whereas communes are primarily rural

Table 2, below, shows the population of the identified communes, in each district.

Municipality/ District	No.	Name of Sangkat/commune	Total Population	Female population	Location
Prey Nob	1	Tuek Thla	5,455	2,720	Coastal
	2	Tuek L'ak	4,413	2,198	Coastal and River
	3	Sameakki	3,641	1,919	Coastal and River
	5	Veal Renh	10,717	5,636	Coastal and River
	6	Samrong	6,683	3,334	Coastal and River
	9	Prey Nob	7,944	3,976	Coastal and River
	10	Ou Oknha Heng	9,006	4,559	Coastal and River
	11	Boeng Taprom	7,917	4,025	Coastal and River
		Sub-total	55,776	28,367 (50.85%)	
Preah Sihanouk Municipality	1	Koh Rong	1,693	791	Coastal Area, Island
	2	Sangkat Muoy	18,613	9,308	Coastal, informal settlement
		Sub-total	20,306	10,099 (49.73%)	
Kep Municipality and Damnak Changeur	1	Angkaol	8,566	4,280	Coastal
	2	Pong Tuek	10,987	5,574	Coastal
	3	Prey Thom	8,521	3,994	Coastal
	4	Kep	4,917	2,358	Coastal
	5	Ou Krasar	7,772	3,738	Coastal
		Sub-total	40,763	19,944 (48.92%)	

Note: there are no indigenous minorities in the target areas.

In addition, Table 3, below, shows the poverty rate and the percentage of people whose primary water source is considered unsafe, for communes in Preah Sihanouk and Kep Province, according to the vulnerability assessment carried out by the Ministry of Environment in 2015.

Table 3 – Poverty level and people with unsafe water

Municipality/ District	No	Name of Sangkat/ commune		Sensitivity			Over-all vulnerability Index
			Poverty (%)	Unsafe water (%)	No. with unsafe water	Total Sensitivity	
Prey Nob	1	Tuek Thla	20.2	50.5	2,754	67	5
	2	Tuek L'ak	20.1	47.6	2,100	62	5
	3	Sameakki	19.2	70.3	2,559	61	5
	5	Veal Renh	26.3	24.5	2,625	47	3
	6	Samrong	19.8	91.8	6,134	73	3
	9	Prey Nob	18.6	96.1	7,634	56	5
	10	Ou Oknha Heng	18.0	71.0	6,394	76	5
	11	Boeng Taprom	12.6	77.8	6,159	54	4
Preah Sihanouk Municip-	1	Koh Rong	23,7	70.6	1,195	72	2
	2	Sangkat Muoy	0.0	55.6	10,348	30	1

ality							
				Total: 47,902			
Kep Municip-	1	Angkaol	18.5	77.1	6,604	67	5
ality and	2	Pong Tuek	18.5	88.5	9,723	66	4
Damnak	3	Prey Thom	14.3	90.9	7,745	57	4
Changkor	4	Kep	6.4	99.1	4,872	50	3
	5	Ou Krasar	18.8	99.6	7,740	63	4
				Total: 36,684			
				Total beneficiaries 84,586			

According to the consultations undertaken in the development of this concept note, people face serious challenges in terms of accessing water, due to the need to buy water from tankers or in bottles from other areas. The consultation also identified that several climatic impacts and hazards cause water pollution as well as contaminate ground water resources. This means that providing year-round, clean water supplies to the target populations will also bring economic benefits in terms of reducing expenditures on water.

Meanwhile, a lack of protective natural assets and infrastructure and high exposure to storms and coastal flooding means that people regularly lose assets. Damage to houses is common and during consultations, officials also highlighted frequent damage to adjacent agricultural lands, restricting food supplies, increasing prices and meaning people to either borrow or invest whatever household savings they have in rebuilding houses or making make-shift flood defences.

Community consultation also identified some possible interventions to build resilience in each province. As shown in Table 4, although it is limited, both of Preah Sihanouk and Kep raised several types of possible interventions in order to enhance climate-resilience.

Table 4 – Possible adaptation building interventions in Preah Sihanouk and Kep

	Preah Sihanouk	Kep
Knowledge	- Provide vocational training on various topics including water, sanitation and hygiene promotion	- Provide vocational training on various topics including water, sanitation and hygiene promotion
Physical	- Improve infrastructure (drainage system, agricultural irrigation) - Provide resilient housing model - Enhance water supply systems	- Improve infrastructure (drainage system, agricultural irrigation) - Provide resilient housing model - Enhance water supply systems
Natural	- Conserve, protect and enhance natural resources and biodiversity - Implement environmental management activities (e.g. reforestation and water pollution improvement)	- Increase number of trees in coastline - Conserve and protect natural resources and biodiversity

By full proposal development stage, information to enhance resilience of community assets (human, physical, financial, social, natural, knowledge) will be detailed and complete, as well as the scale that will be made 'climate-resilient', and the exact number of beneficiaries, etc. (through conducting in-depth community consultations).

2. Project Objectives

Main objective

The proposed project's main objective is to enhance the climate and disaster resilience of the most vulnerable coastal human settlements on the coast of Cambodia through greater coverage of protective and basic interventions. To align with a government request to promote ecotourism in Cambodia, this project targets poor and vulnerable areas where ecotourism is popular or has growth potential.

To accomplish this, a comprehensive baseline vulnerability assessment and the production of action plans in the target settlements is required. Secondly, communes need to be able to plan for resilience and plan an active role in the construction and maintenance of basic resilient systems and to enhance their livelihoods (in line with ecotourism). The third component is to implement adaptation measures: constructing climate and disaster resilient infrastructure systems in human settlements, strengthen the resilience of existing infrastructure systems and protect and/or enhance protective ecosystems.

Specific objectives (also 'project components' in the following table):

- Component 1: Comprehensive vulnerability / baseline assessment and action plans completed in the target communes and provinces
    - This is in line with AF outcome 1: Reduce exposure and vulnerability to climate-related hazards and threats with a particular view to community level resilience

- Component 2: Capacity built to install, protect, and manage infrastructure and natural assets, while also increasing capacity to plan for replication in other areas;
    - This is in line with AF outcome 3: Strengthen awareness and ownership of adaptation and climate risk reduction processes and capacity

- Component 3: Resilience built through small-scale protective and basic service interventions (at the moment, this could include localized flood protection and drainage, or service infrastructure, like year-round water supply or sanitation and protection and/or enhancement of mangroves and coral).

- This is in line with AF outcome 4: Increase adaptive capacity with relevant development and natural resource sectors,
- AF outcome 5: Increase ecosystem resilience in response to climate change and variability-induced stress
- AF outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted area

- Component 4: Knowledge and awareness enhanced and sustainability ensured
  - Project implementation is fully transparent. All stakeholders are informed of products and results and have access to these for replication.

3. Project Components and Financing

Table 5 – Project components and financing

Project Components	Expected Concrete Outputs	Expected Concrete Outcomes	Amount (US$)
Component 1 Comprehensive vulnerability / baseline assessment and action plans completed in the target towns/provinces	Output 1.1.1. Capacity development support on vulnerability assessment and climate change planning provided to commune and provincial level government	Outcome 1.1. Increased awareness on assessing systems, including infrastructure and natural assets, and planning for adaptation	**150,000** (3,5 %)
	Output 1.2.1. Integrated climate change vulnerability and disaster risk reduction assessments (incl. maps) conducted/produced in target areas.	Outcome 1.2. Evidence basis generated for reducing vulnerability at the commune and provincial level.	**200,000** (5 %)
	Output 1.3.1. Provincial and commune level climate change adaptation plans developed, including, as appropriate, actions on water infrastructure and natural assets, use and management, protective infrastructure, livelihoods, needs to enhance eco-tourism and gender and inclusivity considerations. These action plans will include a prioritised short list of actions.	Outcome 1.3. Adaptation actions identified by commune and provincial authorities, which are aligned with local development planning under the D&D process. These will emphasise infrastructure, natural assets, water and livelihoods.	**150,000** (3,5 %)

Component 2 Capacity built to install, protect, and manage infrastructure and natural assets, while also increasing capacity to plan for replication in other areas;	Output 2.1.1. Training for communities, commune and provincial-level officials to implement priority activities identified in the action plans, developed under 1.3.1.	Outcome 2.1 Community, commune and provincial level capacity to plan, construct and maintain resilient water and protective infrastructure and natural assets enhanced (in line with eco-tourism enhancement potential)	**500,000** (12 %)
Component 3 Resilience built through small-scale protective and basic service infrastructure and natural assets	Output 3.1.1. Vulnerable assets strengthened, new resilient assets constructed and/or natural assets protected/enhanced in response to climate change impacts, including variability, reflecting the priorities developed in the action plans developed under 1.3.1.	Outcome 3.1. 84,586 people who live with unsafe water have access to clean water, or protective natural assets and /or infrastructure, and improved livelihood options (in line with eco-tourism enhancement potential)	**3,000,000** (72 %)
Component 4 Knowledge and awareness enhanced and sustainability ensured	Output 4.1.1. Project activities and results are captured and disseminated through appropriate information for the beneficiaries, partners and stakeholders and the public in general.	Outcome 4.1. Project implementation is fully transparent. All stakeholders are informed of products and results and have access to these for replication.	**170,512** (3,5 %)
			4,170,512

5. Project/Programme Execution cost (9.5 %)	**437,788**
6. Total Project/Programme Cost	**4,608,300**
7. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable) (8.5 %)	**391,705**
Amount of Financing Requested	**5,000,000**

Projected Calendar:

Milestones	Expected Dates
Start of Project/Programme Implementation	06-2018
Project/Programme Closing	06-2023
Terminal Evaluation	09-2022

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project components

The target areas chosen for the project are characterised by high levels of exposure to several climate change related hazards; sea-level rise, salinity, erosion, storm surge, flooding and droughts, and underlying vulnerability driven by a lack of access to resilient basic services such as water and sanitation, tenure insecurity and high levels of poverty driven by low incomes.

To achieve the project's overall objective, which is 'to enhance the climate and disaster resilience of the most vulnerable coastal human settlements on the coast of Cambodia through greater coverage of protective and basic service infrastructure and natural assets', the project takes a horizontally and vertically integrated approach to improving and strengthening basic service infrastructure through improved capacity, better local-level planning and community-level implementation.

The actions taken by the project will be targeted to benefit the poorest and most vulnerable people in two of Cambodia's most climate change vulnerable provinces. To do this, a combination of soft and hard measures is proposed to ensure that resilience at the household and commune level is strengthened sustainably. Soft measures include vulnerability assessments and action plans, designed to target the most vulnerable settlements and design and implement the most necessary actions, and improved capacity at the commune and district level, to subsequently sustain actions and replicate them elsewhere through better planning which will mobilise national and international finance[34]. Hard measures will be investments in small-scale protective and basic service infrastructure and natural assets designed to increase people's resilience.

The specific needs of women, people with disabilities and youths will be considered at all stages of the project. This will be achieved through engaging representatives of these vulnerable groups in community and stakeholder consultations in planning and through a community-based approach and people's process – where community groups are formed and sustained throughout all stages of the project and through which communities participate in project implementation and monitoring[35]. There are no indigenous people in the target areas.

The components of the project are as follows:

34 The National Committee for Sub-National Democratic Development, which is an executing agency on this project, is currently applying to be a GCF direct access entity.

35 Development driven by people/Support Paradigm: when people stays at the center of development planning process, the resource can be optimized with greater utility impacting larger number of people: http://sopheapfocus.com/wp-content/uploads/2010/06/Picture-31.png People's process of development can be witnessed through the evolvement of people's desire to improve their lives. Humans developed their settlement from living in caves, then building shelters, and now home. Along this settlement evolution, they had also established certain norms, standards, and a mutual understanding surrounding their community. That is called the people's process of development.

Component 1: Comprehensive vulnerability / baseline assessment and action plans completed in the target communes/districts

In line with Adaptation Fund Outcome 1 and national government priorities (See Section D, below) this component will focus on laying the ground work for reducing vulnerability to climate change related hazards, with a focus on community-level resilience in the target communes/districts by:

- ☐ Conducting climate change vulnerability assessment in the 5 target districts
- ☐ Producing action plans that identify and prioritise resilience investments, including consideration of impact on eco-tourism.
- ☐ Integrate the findings of the assessments and action plans with the commune investment plans
- ☐ Assessing environmental and social risks and developing a plan to ensure compliance with the Adaptation Fund's environmental and social policy and UN-Habitat's Environmental and Social Safeguards System.

In-depth vulnerability assessments and action planning in line with government and commune processes is required to grasp all issues and needs and to increase ownership and institutionalise and sustain the process and identified priority interventions. The vulnerability assessment and adaptation action planning will be guided by the Planning for Climate Change (P4CC) framework, which provides guidance on assessing vulnerability and implementing adaptation options. P4CC's principles are to be strategic; meaning implementation should make the best use of the resources (financial, human and time) available, values-based; meaning that actions should be based on what matters most to communities, participatory; that the project should engage as many different stakeholders as possible throughout the project cycle, and integrated; meaning it should align with other plans and policies insofar as possible. This is especially important in the Cambodian context, given the need and government preference for alignment with the commune and district investment plans, as opposed to stand-alone climate change plans.

Component 2: Capacity built to install, protect, and manage infrastructure and natural assets, while also increasing capacity to plan for replication in other areas;

In line with Adaptation Fund Outcome 3 and ongoing priorities under the NCDD programme (See Section D), this component will strengthen awareness and ownership of the climate change adaptation process in local government (district and commune level) through increased capacity. This will be done by:

- ☐ Developing/refining guidelines on district/commune level Vulnerability Assessment and action planning, including for eco-tourism
- ☐ Developing guidelines for the operation and maintenance of small-scale protective and basic infrastructure and natural assets

- ☐ Community-level training to construct, maintain and operate community-scale infrastructure and natural assets

This component is required to execute component 3 in a way that is efficient and sustainable.

Component 3: Resilience built through small-scale protective and basic service infrastructure and natural assets:

In line with Adaptation Fund Outcomes 4, 5 and 6, this component will increase resilience through a mix of green and hard measures that will include year-round water supply, flood/coastal flood protection, sanitation, ecosystem based adaptation options including mangroves and commune-level law enforcement of the marine protected area (in Koh Rong) and in line with this, concrete livelihood protection and enhancement strategies, including for eco-tourism. This will be done by:

- ☐ Activities under Component 3 will be identified as a result of activities completed in Component 1
- ☐ Conduct Environmental and Social Risk assessments and other safeguarding measures (further outlined in Section K)
- ☐ Procure necessary hardware to implement small-scale infrastructure measures
- ☐ Participatory planning, construction and maintenance of resilient infrastructure

Due to the projected climate change impacts and disasters already occurring in coastal areas, life, health, assets and livelihoods can only be protected through physical interventions (with the support of the soft interventions above). Interventions will be selected looking at their resilience building impact, cost-effectiveness, risks and sustainability, but will lead to protection against coastal erosion, storms and floods (i.e. mangroves, zoning/protection or other protective infrastructure), reduction of droughts and improvement of health (i.e. water sup and sanitation) and in line with above, increased resilience of livelihoods and eco-tourism.

The project will be both innovative and efficient by using, where possible, the People's Process as a means to implement activities. The People's Process mobilises people in the affected/target areas to take decisions regarding their resilience, play an active role in the implementation of the measures and support them in doing so[36]. By doing this, communities/beneficiaries have greater ownership of the process of building resilience, and implementation costs are reduced.

Component 4: Knowledge and awareness enhanced and sustainability ensured

36 See this brief example from Myanmar, for example - http://unhabitat.org.mm/wp-content/uploads/2015/03/UN-Habitat-Myanmar_Brochure.pdf

This component will ensure the project implementation is fully transparent, all stakeholders are informed of products and results and have access to these for replication. Moreover, this component will also contain specific activities to further replicate and scale up the knowledge and awareness. This is done through:

- ☐ Lessons learned and best practices are captured and disseminated both with the project area and beyond, including at national level, to enhance replication potential
- ☐ Advocacy platform built at the national level, with other stakeholders working on local level climate change adaptation work, including UNDP and UNCDF
- ☐ Support provided to the National Committee for Sub-National Democratic Development to prepare a direct access proposal to the Green Climate Fund to continue and upscale adaptation actions in the target area of this project and beyond

The proposed project also plans to contribute for providing lessons learnt on the draft of eco-tourism policy through the project implementation. As the concept of eco-tourism[37] includes components to enhance minimize impact and financial benefits for natural resource preservation and local communities, the project intervention able to benefit for promoting eco-tourism in Cambodia by supporting development of the draft of eco-tourism policy.

B. Economic, social and environmental benefits

According to the consultations undertaken in the development of this concept note, people face serious economic challenges in terms of accessing water, due to the need to buy water from tankers or in bottles from other areas. The consultation also identified that several climatic impacts and hazards cause water pollution as well as contaminate ground water resources. This means that providing year-round, clean water supplies to the target populations will also bring economic benefits in terms of reducing expenditures on water.

Meanwhile, a lack of protective infrastructure and high exposure to storms and coastal flooding means that people regularly lose assets. Damage to houses is common and during consultations, officials also highlighted frequent damage to adjacent agricultural lands, restricting food supplies, increasing prices and meaning people to either borrow or invest whatever household savings they have in rebuilding houses or making makeshift flood defences.

The project will bring numerous social benefits. Women and youth will be involved specifically in the assessment, planning and implementation of all components. Component

37 The framework of ecotourism includes the following seven components: (1) involves travel to natural destinations; (2) minimizes impact; (3) builds environmental awareness; (4) provides direct financial benefits for conservation; (5) provides financial benefits and empowerment for local people; (6) respects local culture; and (7) supports human rights a democratic movements (Honey, 2008)

1 will conduct specific, women-only consultations, for example[38], while activities implemented under Component 3 will specifically include women because communities themselves will be in charge of construction and maintenance.

The project will also bring environmental benefits beyond the adaptation benefits foreseen. Possible waste management actions undertaken under Component 3 will have local environmental benefits as the target areas are polluted with both solid and liquid waste, while this component will also seek to use local materials, where possible.

Table 6: Economic, Social and Environmental Benefits

Type of benefit	Baseline	With/after project
Economic	Tourism, which provides employment to over a quarter of Cambodia's workforce, is threatened by climate change Households face high costs to buy water in bottles or tankers from other areas Households face damage and financial losses as a result of various climate change related hazards, primarily floods and storms	Areas with significant potential for tourism development will be protected, more resilient and have more robust ecosystems that are necessary to continue to support tourism development and thus greater levels of employment Target areas will have access to year-round, safe water supply, removing the need to buy externally sourced water Flood defences, protection and improved drainage will all contribute to reducing and eliminating loss and damage occurring because of climate change hazards Using the people's process as a means to implement the hard components of the project will directly contribute to higher incomes and have the co-benefit of improving vocational skill levels, which will enable people to earn higher wages. Improved protective infrastructure will have the co-benefit of protecting agricultural areas and other service infrastructure, which will also benefit livelihoods.
Social	Regular floods, storm damage and poor sanitation and water supply as well as water pollution/ contamination due to cli-	"Year-round water supply will improve hygiene and nutrition and have a positive co-benefit on health. As described in the economic benefit section, the actions will have numerous livelihood co-benefits,

38 Possible reference to the Myanmar VA here, where women-only consultations were undertaken

	matic impacts cause, and make worse pre-existing drivers of vulnerability, such as disease, poverty and migration Poor quality housing and infrastructure in the target areas further drive vulnerability, and create additional challenges such as a lack of safety, while facilitating the spread of disease. Increasing inequality in Cambodia, including in coastal areas shows that the poorest are not sharing in the proceeds of the country's rapid economic growth The communities do not have adequate capacity benefit from eco-tourism.	which will contribute to reducing poverty. Alignment with the commune/district investment plans and increased capacity for officials at those levels to plan for and manage climate resilient investments will ensure that infrastructure and settlements are more resilient in the long term. The project will use the vulnerability assessment and action planning process conducted in component 1 to ensure that actions target the poorest and most vulnerable, including women, youth and the elderly. While the project does not work in indigenous areas, it will ensure inclusion of minority Muslim communities, a small number of which exist in the area. The communities including the poor and vulnerable areas increase capacities and opportunities to gain income from eco-tourism.
Environmental	Severe environmental degradation has taken place throughout the coastal area of Cambodia – especially in areas where there has been investment in infrastructure and tourism The often informal nature of the target settlements creates environmental problems, especially in waste management The combined effects of sea-level rise, coastal flooding and on-shore development issues (especially disposal of waste water) is causing coastal	"Investments in Koh Rong will include maintenance of the marine protected area, which provides critical ecosystem services to poor and otherwise vulnerable people on-shore Improvements in waste management (when waste management has adaptation benefits) will occur as a result of the project investments. Otherwise, the capacity building undertaken under component 2 will strengthen commune/district investment planning capacity to ensure that these underlying environmental concerns are addressed Better onshore management of water will contribute to reducing coastal erosion effects

	erosion	

C. Cost effectiveness

The proposed project maximises cost effectiveness in a number of ways:

Maximising Hard over soft
The project will maximise the amount of investment it invests in hard interventions over soft ones. Around 72% of the components' budget will be directed to hard investments. This maximises the direct beneficiaries of the project. Where the project makes investments in soft activities, these will be either a) directly supportive of the hard investments (i.e. training in installation or operation and maintenance), or b) investments to strengthen commune/district level planning – which will help to sustain and replicate the benefits of the project, and make more effective use of national finance in the future. This approach maximises the adaptation benefits per dollar invested; a greater soft component focus would risk not translating into adaptation benefits, while a greater hard focus may risk not building sufficient capacity to sustain or replicate.

Choosing Cost effective investments
Under component 1, when the project undertakes action planning, cost effectiveness, adaptation-cost effectiveness, 'time to adaptation benefits' and 'no-regret' will all be factors in prioritising investments. This is standard practice according to UN-Habitat's well-established Planning for Climate Change methodology[39]. This means that cost-effectiveness, adaptation effectiveness and development effectiveness are all part of the action planning process. UN-Habitat also has experience of conducting cost-benefit analysis of specific project options, where their immediate benefit is not clear[40].

Cost effective implementation
UN-Habitat will implement the hard components of the project through the People's Process where possible. This implementation approach has been shown to reduce implementation costs by 20-30% over the life of the project by; using community labour instead of external contractors, procuring local materials where they are available.

All investments will be designed to be resilient. UN-Habitat will ensure that it does not select the cheapest options, but the most cost-effective. This means that if resilient infrastructure has a higher investment cost for a demonstrated longer lifespan and/or greater adaptation benefits.

39 See UN-Habitat (2014), Planning for Climate Change: A Strategic, Values-based Approach for Urban Planners, p.109 - https://unhabitat.org/books/planning-for-climate-change-a-strategic-values-based-approach-for-urban-planners-cities-and-climate-change-initiative/

40 See for example this example for urban ecosystem-based adaptation options conducted in Fiji - http://www.fukuoka.unhabitat.org/projects/voices/pacific_islands/detail07_en.html

The alternative implementation model to the People's Process is to use external contractors, which, as highlighted above, is more expensive and less likely to foster local ownership.

Using D&D structure for efficiency

The project works closely with the National Committee for Sub-National Democratic Development – the government body responsible for investment planning at the commune and district level. Working through this body helps to ensure that investments are effectively programmed where they are most needed and do not duplicate infrastructure development through national/on-budget finance.

In consultation with government stakeholders – Ministry of Environment, local officials in both provinces and NCDD itself, show that when local investment projects take this approach, they are most cost effective, better aligned with national priorities and reduce duplication, compared with 'direct execution' type projects that bypass NCDD.

The alternative to this would be to bypass the official government structure for local investment and work either through the Provincial Department of Environment or by direct execution. However, local DoEs have minimal experience of management of this level of investment in local investment, and do not have the requisite management procedures in place, while direct execution would not deliver the same level of local ownership, institutional capacity building or replication.

D. Consistency with national or sub-national strategies

The project has been designed to align with national and sub-national development policies, strategies and plans on development, climate change and disaster resilience and decentralization reform.

As Goal 13 of the Sustainable Development Goals and the Paris Agreement on Climate Change indicate, global society is committed to adapt to climate change and reduce its impact. Simultaneously, the Royal Government of Cambodia also set several policies and strategies to reduce the impact of climate change by enhancing the adaptive capacity and resilience of climate change, such as the Cambodia Climate Change Strategic Plan (CCCSP) (2014-2023), the Climate Change Action Plan (CCAP), and the Nationally Determined Contribution (NDC). To align with these global and national climate goals and plans, the proposed project aims to enhance the climate and disaster resilience of the most vulnerable coastal human settlements of Cambodia.

The National Strategic Development Plan (NSDP) (2014-2018) is the primary national development strategy. In the NSDP, the Royal Government of Cambodia (RGC) outlines actions related to the national prioritized policies to implement the Rectangular Strategy Phase III (See Figure 10) This strategy puts good governance as the core, with four other elements, including poverty reduction through economic development (element 3) and institutional capacity and governance at both national and sub-national level (element 4). Decentralization and deconcentration (D&D) reforms for improving capacity of

the sub-national levels as well as expanding their mandate is one of key priority actions. The Cambodian government has also set environmental sustainability as one of their prioritized actions. Actions on environmental sustainability include reducing the impact of climate change by enhancing the adaptive capacity and resilience to climate change, particularly through the implementing the Cambodia Climate Change Strategic Plan (CCCSP) (2014-2023).

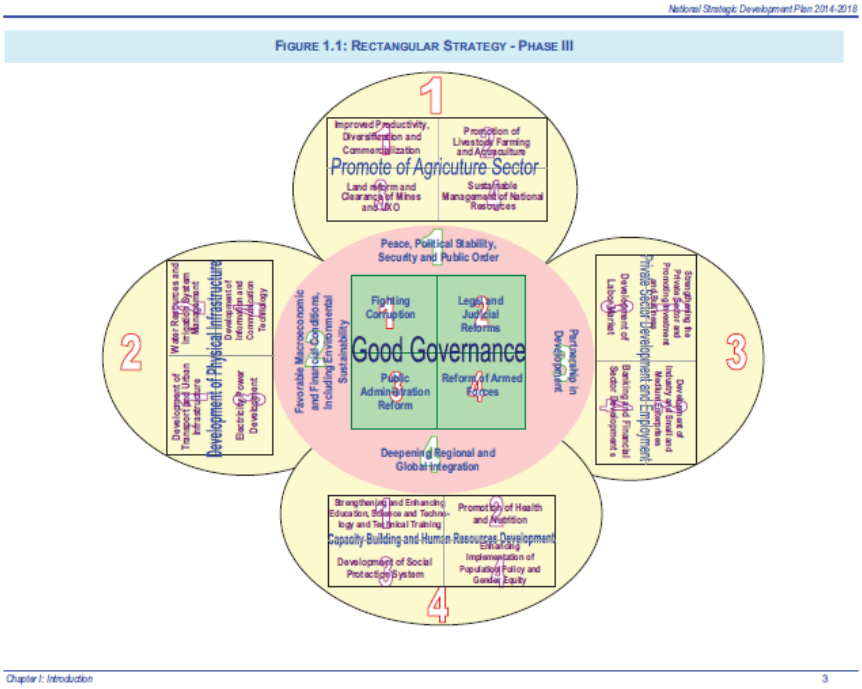


Figure 10 The Rectangular Strategy Phase III

The CCCSP details Cambodia's strategic response to climate change, and forms the basis of the Nationally Determined Contribution. It will be implemented, in the initial stage, through the Climate Change Action Plan (CCAP). The CCCSP's vision is to develop "towards a green, low-carbon, climate-resilient, equitable, sustainable and knowledge-based society". To achieve its vision, Royal Government of Cambodia (RGC) sets eight strategic objectives. Among the eight strategic objectives, this project aligns with strategic objectives (SO) 2, 3, 5, and 7. Strategic Objective 2 aims to reduce sectoral, regional, gender vulnerability and health risks to climate change impacts through existing and new vulnerability and risk assessments (strategy a). It also aims to improve coastal zones and protected areas (strategy g). Strategic Objective 3 pursues climate resilience of specific locations including protected areas. Encouraging eco-tourism is highlighted as one of the most cost-effective approaches for addressing climate change (strategy b). Strategic Objective 5 aims to improve capacities, knowledge and awareness on climate change responses through trainings, while Strategic Objective 7 targets strength of "institutions and coordination frameworks for national climate change responses" through mainstreaming climate change into national and sub-national development plans (strategy a).

The CCAP was finalized in 2016 to guide the initial phase of implementation of the

CCCSP, with 17 initial actions identified by the Ministry of Environment. Action 2 of the CCAP is to implement national and sectoral climate change vulnerable assessment. Testing specific management options to handle climate change is also included in Action 3. Action 11 aims to promote and improve the adaptive capacity of communities to respond to climate change. Finally, Action 13 is capacity building of national institutions coordinating the implementation of climate change response. These actions (2, 3, 11 and 13) are addressed by this project.

The Nationally Determined Contribution (NDC) refers back to the CCCSP as the means of implementation of Cambodia's goals. The NDC identifies that national vulnerability to climate change is caused not only by geography and high reliance on agriculture sector but also by lack of financial, technical, and human capacities. infrastructure and coastal zones are recognized as one of most vulnerable sectors by climate change. The NDC also raises the profile of increased adaptive capacity to address climate change as a priority[41].

In addition to its comprehensive development and climate change policy framework, the Cambodian government has placed significant emphasis on decentralization and deconcentration (D&D) reform, which promotes transformation of responsibilities and functions of government from national level to sub-national level. In Cambodia's NSDP, the government aims at the "[p]rovision of power and duties to manage and perform all respective functions in line with the principles of local autonomy and local accountability to the maximum level". The Law on Administrative Management of the Capital, Provinces, Municipalities, Districts and Khans, also known as the Organic Law, specifies implementation structure and function of the National Committee for Democratic Development at Sub-National Level (NCDD). The NCDD reviews existing responsibilities and functions of ministries and other bodies and identifies functions to be transferred to sub-national level including financial resource and capacity building for management in accordance with the Organic Law. By working with NCDD to channel local investments, the project is aligning with and strengthening the decentralization process and the main body, the NCDD, that manages this.

In terms of plans at the sub-national level, 6 cities, including Kep and Sihanoukville, are starting to work with the Global Green Growth Institute (GGGI) to develop green city strategic plans, under the framework of the emerging national strategic plan for green secondary cities. The project will partner with GGGI to ensure the alignment of this initiative with the proposed project.

Table 7 summarises how the project aligns with policies, strategies and plans of the Cambodian government. The main objective of the project is to enhance the climate and disaster resilience of the most vulnerable coastal human settlements on the coast of Cambodia through greater coverage of protective and basic service infrastructure. To achieve its main objective, the project consists of four components; Component 1 is comprehensive vulnerability/baseline assessment and action plans completed in the target communes/districts as prioritized in **CCCSP** and action 2 of **CCAP**. Component 2 is

41 Cambodia's INDC to the UNFCCC, p.4

Capacity built to install, protect, and manage infrastructure, while also increasing capacity to plan for replication in other areas, in line with the CCCSP, NSDP, the Organic Law and the IP3-II. The project also supports the national deconcentration and decentralisation in the implementation process because it enhances capacity of sub-national levels for their independent climate change adaptation strategies in the future. Component 3 is resilience built through small-scale protective and basic service infrastructure and ecosystems, which aligns with the priorities of the CCAP and NDC. Component 4, Knowledge and awareness enhanced and sustainability ensured aligns with CCCSP and the NSDP in their aims to increase capacity.

Table 5: Analysis of national socio-economic, climate and disaster resilience priorities. The table shows overlap measures among national plans and strategies. Although not limit its activities, this project mainly focus on what the RGC set as their priority measures.

Table 7: project alignment with government priorities

Measure	NSDP (2014-2018)	CCCSP (2014-2023)	INDC	CCAP	The Organic Law	IP3-II (2015-2017)	The national strategic plan for green secondary cities
❑ Implement threat/ risk assessment		X		X			X
❑ Develop action plans for enhancing the climate and disaster resilience		X		X			X
❑ Enhance capacity of sub-national level on climate change adaptation, and ecosystem resilience	X		X		X	X	
❑ Study, design and build small-scale protective and basic service infrastructure (water supply etc.)	X		X	X			
❑ Promote deconcentrization and decentralization	X				X	X	

E. Compliance with relevant national technical standards

Table 8 – Compliance with National Technical Standards

Expected concrete output/intervention		Relevant rules, regulations, standards and procedures	Compliance, procedure and authorizing offices
1.1.	Conducting climate change vulnerability in the 5 target districts	UN-Habitat Planning for Climate Change and Practitioner's Handbook on implementing the Vulnerability Reduction Assessment (UNDP)	The project will maximize use of existing VA tools/guidelines to minimize tool fatigue and to build on experiences in-country, where possible
1.2.	Producing action plans that identify and prioritise resilience investments	UN-Habitat Planning for Climate Change and Practitioner's Handbook on implementing the Vulnerability Reduction Assessment (UNDP)	As above
1.3.	Integrate the findings of the assessments and action plans with the commune investment plans	Guidelines for Integrating Climate Change into Commune Development Planning (MoE/CCCA) Effective Mechanisms for Climate Change Mainstreaming in sub-national planning (MoE/CCCA) Green City Planning Methodology (MoE/GGGI) Guidelines for Commune Development Plans and Investment Plans (NCDD)	Extensive coordination between UN-Habitat, MoE, NCDD and relevant department and commune officials will take place to ensure that climate action plans are integrated into CIPs. NCDD will play as authorization office, while MoE will provide a capacity building on integration of climate change to commune investment plans through commune planning committees
2.1.	Developing/refining guidelines on district/commune level Vulnerability Assessment and action planning	x	MoE will take a lead to developing/refining the guidelines and then train to NCDD Officials to take action at district/commune level through planning committees.
2.2.	Developing guidelines for the operation and maintenance of small-scale protective and basic infrastructure	Guidelines on provincial/district/commune project operations	NCDD will provide the specific guideline to target authorities for operation and maintenance based on existing guidelines and then train commune planning and investment committee. MoE will provide technical assistance and monitoring.

2.3.	Community-level training to construct, maintain and operate community-scale infrastructure	Commune planning and investment project guidelines for infrastructure projects	NCDD will train Commune planning and investment committees for project implementation, monitoring and also to ensure people's participation in maintaining the basic infrastructure.
3.1.	Activities under component 3 will be identified as a result of activities completed in Components 1 and 2	Not relevant	
3.2.	Conduct Environmental and Social Risk assessments and other safeguarding measures (further outlined in Section K)	Sub-decree #72 on Environmental Impact Assessment Process	NCDD will work closely with MoE to ensure the environmental impact assessment undertaken with fully participation from local authorities based on sub-decree. NCDD will be responsible for conducting the assessment, while MoE will be responsible for TA.
3.3.	Procure necessary hardware to implement small-scale infrastructure measures	Procurement Manual for Externally Financed Projects/Programs in Cambodia (MoEF – established under sub-decree)	CDD will supervise to target commune planning and investment committees to ensure the implementation of infrastructure projects successfully
3.4.	Participatory planning, construction and maintenance of resilient infrastructure	The compliance depends on the exact nature of the infrastructure to be constructed, however, relevant standards could include: EIA, Procurement process, local planning process and operation and maintenance procedure. Technical Guidelines for Commune/Sangkat (2009). Fund's projects which consist of 3 parts (Part 1: Assessment and designs; Part 2: Technical designed standard, construction, equipment /materials and works; Part 3: Monitoring and Evaluation) (2009)	NCDD will play as the authorization office to facilitate the project committees at the target areas to ensure the full participation for planning, construction and maintenance of resilient infrastructure project. NCDD will ensure the technical guidelines will apply for all infrastructure projects at the Commune/Sangkat targets in cooperation with technical departments.

4.1.	Lessons learned and best practices are captured and disseminated both with the project area and beyond, including at national level, to enhance replication potential	Not relevant	
4.2.	Advocacy platform built at the national level, with other stakeholders working on local level climate change adaptation work, including UNDP and UNCDF	Not relevant	
4.3.	Support provided to the National Committee for Sub-National Democratic Development to prepare a direct access proposal to the Green Climate Fund	Not relevant	

F. Duplication with other funding sources

The sites selected for this project were chosen because of their high vulnerability and inability to adapt to climate change, as well as because the Royal Government of Cambodia has identified the coastal zone as a priority area. However, the target sites are also characterised by minimal other work by development partners in climate change (other donor initiatives were discussed during national and local consultations and are summarised in Section H).

Nevertheless, relevant projects have been identified through the consultation mission and through institutional knowledge of UN-Habitat, thanks to its long history of operations in Cambodia. Table 9 below summarises other relevant projects that are either ongoing, recently completed, or about to start in Cambodia. Historical projects are not included.

Table 9 – Other relevant projects

Relevant projects/programme	Lessons learned and	Complimentary potential	Project Timeline and budget

Vulnerability Assessment and Adaptation Programme for Climate Change in the Coastal Zone of Cambodia Considering Livelihood Improvement and Ecosystems, Implemented by UNEP, executed by Ministry of Environment, funded by LDCF	There is a feeling from a number of stakeholders that this VA is insufficient for planning of local investments for adaptation.	The current project will utilise the findings of the vulnerability assessment carried out by the UNEP project in Prey Nop district (this is the only overlapping target district).	$1.6 million, 2012-2015
Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region, implemented by UNEP, executed by Ministry of Environment, funded by LDCF	The UNEP EbA project has not yet started, and will likely begin implementation by end of 2017 or early 2018. It is proposed to keep a 'green/brown complementarity' between these two projects.	UN-Habitat is an implementing partner on the UNEP project, which enables it to ensure complementarily potential	To begin end of 2017. $1.5 million (Cambodia component)
"Strengthening Climate Information and Early Warning Systems to Support Climate-Resilient Development in Cambodia", implemented by UNDP, executed by Ministry of Water Resources and Meteorology, funded by GEF-LDCF	The UNDP project does not work in the same target areas as this project. The UN-Habitat concept note formulation mission met UNDP to discuss this project (section H).	The projects will share an implementation modality (through NCDD)	$4.9 million, 2014-2017
Reducing the Vulnerability of Cambodian Rural Livelihoods through Enhanced sub-national Climate Change Planning and Execution of Priority Actions, implemented by UNDP, executed by Ministry of Environment and Ministry of Planning, funded by GEF-LDC.	As above	As above	$4.5 million, 2017-2019
Pilot Programme for Climate Resilience (PPCR), Implemented and funded by ADB, executed by Ministries of Environment, Rural Development and Planning.	The implementation/infrastructure component of PPCR doesn't overlap target areas with the proposed project.	UN-Habitat is a partner in a small component of PPCR, so is well placed to coordinate lessons learned at the national level	$85 million, 2009-2019

Cambodia Climate Change Alliance, implemented by UNDP, executed by Ministry of Environment and funded by the EU, SIDA and DANIDA	The UN-Habitat concept note formulation mission met with the CCCA programme and agreed full information sharing (see Section H). This project will be implemented in Kep and Sihanoukville. GGGI will be a non-resource partner in this project, and will also take a position on the board, to ensure coordination.	The proposed project will invite a representative of the CCCA programme to be on the management board, as CCCA is meant to be a coordinating programme for all climate change related projects in Cambodia	$8.9 million, 2010-2017
Green Secondary City Planning, implemented by GGGI		The actions taken in this project will be shared with GGGI, who will incorporate their lessons learned in the overall city plans for Kep and Sihanoukville.	Unknown, 2015-2019

G. Learning and knowledge management

Component 4 of the proposed project addresses knowledge management and sustainability. This will capture the practical experiences of the field and feed into the policy decision-making besides sharing the project achievements to a wider external audience.

The participatory approach to implementation will promote building knowledge at the local level, including on planning (at local government level) and on technical/vocational skills for constructing and maintaining small-scale resilient infrastructure (both at local government and community level). There will be direct and ongoing sharing of lessons from the project implementation sites, while the project will also use a participatory monitoring process, which will enable the beneficiary communities under Component 3 to work directly with the project's monitoring and evaluation officer, to highlight issues in delivery and to strengthen adaptation benefits, including in replication and sustaining the project's gains.

At the national level, other vulnerable districts and communes will be able to derive lessons learned from the project. Information will be consolidated in reports and the tools and guidelines will be for developing resilient infrastructure. By partnering with NCDD, and executing through MoE and NCSD (an inter-ministerial coordinating body), a linkage will be created with other, relevant government ministries, such as the Ministry of Water Resources and Meteorology, and the Ministry of Rural Development, which will facilitate wider dissemination.

As part of the sustainability/exit strategy, the project will develop participatory monitoring

processes, which will trigger institutional learning processes, participation, knowledge exchange and replication and scale-up of good practices.

UN-Habitat is plugged into a number of international dissemination mechanisms. The Knowledge Centre on Cities and Climate Change (in short: K4C) provides a knowledge management platform for Climate Change and Human Settlements interventions. It is proposed to use this platform (as well as UN-Habitat websites) to disseminate the lessons learned from this project. UN-Habitat will also work to integrate knowledge generated from the project with the knowledge management component of the CCCA programme, and through the 'camclimate' website[42].

Eco-tourism is part of this project intervention. Thus, by the end of the project, document should be developed including the lesson learnt, good experience and suggested a model in order to scaling up the promotion of eco-tourism at community level to other areas by disseminating through Ministry of Tourism, MoE, NCDD and other stakeholders as well as posting on appropriate website and other media.

H. Consultative process

In development of this project, UN-Habitat undertook a joint mission by the country office and a representative of the Regional Office for Asia and the Pacific to consult national and local stakeholders between 8th and 12th of May 2017. Table 10 provides an overview of stakeholders consulted and the outcomes of these consultations.

The meetings at the national level focused primarily on alignment with national priorities (as identified in Section D), coordination (and avoiding duplication) with other development partner initiatives (outlined in Section F), the implementation modality (which will be discussed further in the full proposal, but is outlined briefly below) and the target districts and communes. There was also discussion of the climate hazards and underlying vulnerabilities, and the types of vulnerabilities the project should address.

At the local level in both provinces, discussions with local officials went into greater detail on the priority areas, the development challenges/underlying vulnerabilities they face and the climate hazards. The local level meetings also discussed various adaptation options and investments that are required in the target areas.

The consultation mission also met with other key actors in climate change adaptation and mitigation, including UNDP, the Global Green Growth Institute (GGGI) and UNEP (in Bangkok).

Between 3 and 7 July 2017, community consultations took place. The objective was to understand the local climate change impacts/effects per community, (the lack of) community coping mechanism/barriers to building resilience, specific resilience building needs and interest and concerns regarding the proposed project in general. The results are displayed in annex 1 and briefly discussed in the background and context section.

42 http://www.camclimate.org.kh

For the full project document the in depth consultation with communities will take place where we'll discuss and select possible activities and hard interventions with communities by considering:

- ☐ Alternative options for increasing resilience
- ☐ Costs (also for maintenance), also looking at alternative options
- ☐ Potential environmental and social risks and impacts of intervention (identified by through initial screening)

Table 10 – Stakeholder Consultations Held

Stakeholder, incl. role/function	Consultation objective	Outcome	Conclusion
Ministry of Environment/National Council for Sustainable Development (NCSD)	• Re-confirm focal point willingness • Establish preferred target areas • Ensure coordination with other, ongoing adaptation activities and policy alignment	• MoE/NCSD has agreed to support the project formulation • The target areas named in this concept note were agreed • Information was exchanged on existing and planned initiatives in the target area, as highlighted in Section F	MoE/NCSD as the designated authority will approve the project
National Committee for sub-national Democratic Development	• Establish NCDD interest in being an executing partner agency • Agree in principle the modality for channelling funds to the local level • Gain understanding on integrating climate change adaptation into commune and district level plans • Understanding existing technical standard, rules, and regulations	• NCDD agrees to be an executing partner • Funding for local investments would be channelled through the NCDD mechanism • The project contains provisions to mainstream climate change into commune/district planning • The project follows NCDD's Technical Guidelines for Commune/Sangk	NCDD will also provide written agreement to be an executing partner

		at (2009)	
Local officials in Preah Sihanouk Province	• Agree target sites • Understand climate change vulnerability and highlight possible adaptation investments	• Target sites agreed • A clear picture of vulnerability and possible actions established	The long-list of target communities is listed in Part I – summary of the project
Communities in Preah Sihanouk Province	• Understand the local climate change impacts/ effects per community and (the lack of) community coping mechanisms/barriers to building resilience • Understand specific resilience building needs and interest as well as concerns • Understand trend and impacts of tourism on the communities	• Insufficient data and relevant documents were collected	The collected data of target communities is listed in Annex 1 – summary of the community consultation
Local officials in Kep Province	• Agree target sites • Discuss climate change vulnerability and highlight possible adaptation investments	• Target sites agreed • A clear picture of vulnerability and possible actions established	The long-list of target communities is listed in Part I – summary of the project
Communities in Kep Province	• Understand the local climate change impacts/ effects per community and (the lack of) community coping mechanisms/barriers to building resilience • Understand spe-	• Insufficient data and relevant documents were collected	The collected data of target communities is listed in Annex 1 – summary of the community consultation

	cific resilience building needs and interest as well as concerns • Understand trend and impacts of tourism on the communities		
UNDP	• Gain experience from UNDP on the implementing modality for multilateral climate finance projects • Improve alignment with the Cambodia Climate Change Alliance, and other climate change projects	• Agreement that national execution with funds for local investment channelled through NCDD • Confirmation that UNDP has no ongoing activities in the target area, and that the proposed project complements ongoing UNDP initiatives	No formal further action, but ongoing dialogue to continue
UNCDF	• Ensure alignment with support provided to NCDD and commune/district planning	• Agreement that the commune/ district planning component does not duplicate	No formal further action, but ongoing dialogue to continue
GGGI	• Increase alignment with GGGI/MoE's green secondary cities planning work, which will take place in Sihanoukville and Kep	• Agreement that GGGI will be a partner, and that there will be information flow to ensure that investments made under this project will be part of the planning work undertaken by GGGI	GGGI will be a non-financial partner in the project (i.e. no funding from this project)
UNEP	• Ensure synchronicity with the UNEP coastal adaptation project, which also worked in Prey Nop, and the forthcoming	• The UNEP project has been concluded. All relevant reports regarding this project have been passed to UN-	No formal further action, but ongoing dialogue to continue

	urban Ecosystem Based Adaptation project, which will also work in Kep	Habitat (and MoE/NCSD). • The urban EbA project is yet to start. The proposed project will only work on small-scale infrastructure in Kep	

In Cambodia, UN-Habitat has been implementing projects in supporting and strengthening policy interventions, institutional capacity building and community empowering related to water and sanitation, climate change adaptation, disaster risk management, gender mainstreaming and youth development, housing and urban planning both national and subnational level. For tackling poverty and climate change through enhancing climate and disaster resilience in the country, the UN-Habitat mission visited several stakeholders between the 8th and 12th of May and 3rd and 7th of July 2017 in order to gather to the requisite information for a concept note.

The following paragraphs summarise key meetings undertaken by the consultation mission undertaken by UN-Habitat.

Ministry of Environment (MoE) hosted a meeting with UN-Habitat to discuss areas, adequate small-scale infrastructure, the overall policy situation and implementation modality. MoE recommended Prey Nop and Koh Rong in Preah Sihanouk province and both the municipality and district in Kep province. There was also extensive discussion of the Tumnup Rolok area of Sangkat 1 of Sihanoukville City which is also a high priority because it is exposed to climate hazards with few basic services. Possible actions were discussed, although final decisions on actions should be made after assessment the target areas. The discussions reconfirmed that MoE would be the main executing partner, but that NCDD would be the modality to channel funds for local investments.
The meeting with the United Nations Capital Development Fund (UNCDF) clarified that the NCDD is the key organization for fund-flow mechanisms and investment in Cambodia. UNCDF advised that MoE should execute policy and capacity building components, and does not have a comparable mechanism to channel funds for local investment. This means that MoE is likely to be the executing agency for Components 1, 2 and 4 of the project, while NCDD is the executing agency for Component 3. However, this should be re-confirmed during the full proposal stage of the project.

Climate change resilience and environment is the largest portfolio of UNDP in Cambodia. UNDP also recommended that the project should have a strong linkage with the NCDD. The meeting also discussed the technicalities of capacity building at the local level, with UNDP recommending that local officials take a place on the project board.
NCDD agreed with selection of Prey Nop because the area still suffers from ocean and river flooding. NCDD highlighted the use of vulnerability maps, developed in conjunction with MoE and Ministry of Planning and passed this information on to the UN-Habtiat

team. NCDD reconfirmed their ability and willingness to manage funding flow for local investments, and recommended this is done in line with NCDD procedures. NCDD recommended that continued communication take place to ensure alignment with the broader district and commune planning processes. NCDD also confirmed that they are applying to be a GCF direct access entity.

The mission met with the Global Green Growth Institute (GGGI), which is implementing activities under the framework of the Green Urban Development Programme. This programme produced the green city strategic plan, which is now officially adopted and has been incorporated into the environmental law and code. GGGI is also developing a national strategic plan for green secondary cities, and develop green strategic plans for 6 cities, likely including Kep and Sihanoukville. GGGI is also developing an overall framework at the national level and planning at the city level. These combined works provide scope for alignment with the proposed project.

UN-Habitat met with officials from Preah Sihanouk province, including representatives from the Department of Environment, the Fisheries Administration, NCDD and the Provincial Hall Administrative Department. The meeting confirmed that Koh Rong and prey Nop have a need for the project, especially on water supply in the dry season, as these areas cannot rely on ground water because it is salty and of poor quality, with local people having to buy water from tankers or in bottles instead (which is very expensive). The Prey Sway commune on Koh Rong was identified as particularly vulnerable in this regard. The participants all agreed that investments in water supply would be an effective adaptation option. There is only very limited donor footprint in these areas, with no donors investing in water supply, or protective infrastructure. The participants agreed with the proposed mechanism of project implementation, which partners with MoE for national policy development and trainings while partnering with NCDD for fund-flow of investment. This mechanism is also identified to match with the national strategic plan and the IP3.

The meeting with provincial officials in Kep included representation from the Department of Environment, Department of Tourism, Fisheries Administration, Department of Water Resources and Meteorology, Department of Public Works and Transport, NCDD and the Department of Administration under Provincial Hall. Like in Preah Sihanoukville, people also face significant issues with water supply and water shortages because there is no piped water system in the city, especially along the coast, where there is no ground water available. Despite receiving ample rainfall, rainwater harvesting is very limited in Kep as effective water storage tanks are expensive beyond the means of most households – especially the poorest. Additional issues faced by the poorest include a lack of waste management and sanitation facilities, poor house construction and tenure insecurity. This means that in Kep, interventions under Component 3 should likely focus on water supply, and could include rainwater harvesting, extending water supplied by wells, and water management. These activities would be confirmed by the assessment and action plans that would take place in Component 1.

UN-Habitat implemented community consultation in the communities of Preah Sihanouk

and Kep Province. Based on the guide on community-level vulnerability assessments and action planning, requisite data including community profiles and tourism were collected through interviews and relevant documents. All of collected data were summarized in annex 1.

I. Justification

The proposed project components, outcomes and outputs fully align with national and local government/institutional priorities/gaps identified, with identified community and vulnerable groups needs and with four of the Adaptation Fund's seven outcomes as stated in the Adaptation Fund results framework. This alignment has resulted in the design of a comprehensive approach in which the different components strengthen each other and in which outputs and activities are expected to fill identified gaps of Cambodia's climate change response. The project aims to maximizing the funding amount for the local investment component (Component 3); funding allocation to the other (softer) components is required for complementarity/support for Component 3 and sustainability and quality assurance of the project. The table below provides a justification for funding requested, focusing on the full cost of adaptation reasoning, by showing the impact of AF funding compared to no funding (baseline) related to expected project outcomes.

Table 11 – Project Justification

Outcomes/planned activities	Baseline (without AF)	Additional (with AF)	Comment and alternative adaptation scenarios
Outcome 1.1. Increased awareness on assessing systems, including infrastructure, and planning for adaptation	Local authorities have limited understanding of the impacts of climate change or ability to plan responses to it	Local government is aware of climate change and its impact, and understands the process of assessing	Without increased awareness local officials/planners will not be able to make effective decisions regarding adaptation in the future
Outcome 1.2. Evidence basis generated for reducing vulnerability at the commune and provincial level.	At present, little or no evidence of the impacts of climate change exists in any of the target communes[43], and where there is, there is little ability to use this information effectively	Evidence generated on climate change and effective adaptation actions that enables local decision makers to plan for and implement actions	Without and evidence basis for adaptation, actions implemented (if implemented at all) would be hap-hazard and not necessarily well-planned.
Outcome 1.3. Adaptation actions identified by commune and provincial authorities,	No evidence based adaptation options exist at present in the target areas, and as such there is no alignment	Adaptation options generated that are actionable and incorporated into local planning systems	This outcome follows on from outcomes 1.1 and 1.2 – without this process there would either not be adaptation actions identified, or those identified would not

43 Except in Prey Nop district, which was assessed by UNEP

which are aligned with local development planning under the D&D process. These will emphasise infrastructure, water and livelihoods.	with local planning through the D&D process		be evidence based, and would be less likely to effectively target the poorest and most vulnerable.
Outcome 2.1 Community, commune and provincial level capacity to plan, construct and maintain resilient water and protective infrastructure enhanced.	Capacity building is still in an early stage at present, and while NCDD has a structure in place to support, additional capacity is required to plan for the impacts of climate change	Capacity is enhanced, enabling the implementation of adaptation actions identified as a result of work undertaken in Component 1	Capacity building, though ongoing under the support of NCDD, is a slow process that will take a long time. This project will enable and speed up capacity building in the target communes and districts
Outcome 3.1. 84,586 people who live with unsafe water have access to improved water, or protective infrastructure, and improved livelihood options.	People do not have basic service infrastructure or sanitation, and most people in the target areas are exposed to floods, storms, strong wave, sea-level rise or drought (or a combination of these)	People in the target communities have increased their resilience to climate change and underlying vulnerability has been reduced through basic service infrastructure	Without undertaking actions through the People's process, adaptation actions would not be participatory or generate the levels of local ownership achieved by this project
Component 4 Knowledge and awareness enhanced and sustainability ensured	Knowledge dissemination more broadly is still in the early stages, and there are no mechanisms for further/follow-up financing	Knowledge will increase and the likelihood of follow up finance for additional investment will be increased	Without these interventions, the chances of wider knowledge generation and follow-up financing would be severely limited

J. Sustainability

Institutional

The project aligns with the Cambodian government's planning and implementation mechanism and strengthens it. This is because the local investments will be channelled throguh the NCDD, whils is also responsible for planning (including investment planning) at the commune and district level. As a result of the project, the target communes and districts will be better able to plan for small-scale resilient investments, while the NCDD will be enabled to replicate the knowledge gained from the project to other areas of the country (as NCDD has a national mandate).

Social
By implementing the project through the People's Process methodology, whereby people take ownership for the design and construction of the infrastructure that they will ultimately be beneficiaries of, there will be greater social sustainability because people will take ownership of their adaptation infrastructure. In implementing the projects, communities will gain greater awareness of climate change and adaptation, and vocational skills to build and maintain infrastructure.

Economic
Adaptation is a highly important economic activity in the target areas. In most of the target settlements, people rely on tanker-supplied or bottled water, which is expensive. This project will enable people to access water in a sustainable manner at much lower cost. This frees-up household income for other purposes. The project also makes an important contribution to economic sustainability because it works in areas important for tourism and eco-tourism, which is an important contributor to Cambodia's economy, espeically in coastal regions.

Financial
By securing institutional sustainability through NCDD (as described above) there is a greater chance of securing financial sustainability. There are two main ways this can occur. Firstly, NCDD is resposnible for supporting communes and districts undertake planning (including investment planning). This means that the project design supports mobilisation of national finance – which is critical to national ownership of adaptation actions. Secondly, NCDD is applying to become a GCF direct access entity, which will unlock significant funding opportunities for communes and districts throughout the country, including the ones targeted in this project. To that end, budgetary provision has been made in this project to support a proposal to GCF to mobilise further funding to finance additional actions/upscaling of the actions proposed in this project.

Environmental
The project will make use of local materials, where possible. Part of the project will be implemented in a marine protected area (Koh Rong) and as such, activities undertaken in this area will make special consideration of the delicate environment. The rest of the project is also implemented in the coast; a sensitive environmental location. The project will also make provisions for the protection of the environment through its safeguarding procedures. As shown in Section K, below, the project will ensure the protection of natural habitats, conservation of biological diversity, prevention of emissions that cause climate change, and prevent pollution and promote resource efficiency.

K. Environmental and social impacts and risks

Table 12: overview of the environmental and social impacts and risks identified as being relevant to the project.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	X	
Access and Equity		X
Marginalized and Vulnerable Groups		X
Human Rights		X
Gender Equity and Women's Empowerment		X
Core Labour Rights		X
Indigenous Peoples	X	
Involuntary Resettlement		X
Protection of Natural Habitats		X
Conservation of Biological Diversity		X
Climate Change	X	
Pollution Prevention and Resource Efficiency		X
Public Health		X
Physical and Cultural Heritage	X	
Lands and Soil Conservation		X

As shown in Table 12 the project seeks full alignment with Adaptation Fund's Environmental and Social Policy (ESP), and will also be screened according to UN-Habitat's new Environmental and Social Safeguards policy. This section briefly describes the initial analysis of environmental and social impacts of the project based on the ESP.

Components 1 (Institutional level strengthening to reduce vulnerability in human settlements), Component 2 (Building capacity at the community, commune and provincial level) and Component 4 (Knowledge and awareness enhanced and sustainability ensured) consist of soft activities. The Adaptation Fund's ESP says "Those projects/programmes with no adverse environmental or social impacts should be categorized as Category C[44]. All activities under Components 1, 2 and 4 are 'soft' activities will not cause direct, indirect transboundary and cumulative impacts to environment and society.

All hard activities in the project will be undertaken under Component 3. These hard activities carry the risk of causing environmental and social impacts. As the activities implemented under the project will be local and small scale, it is deemed that they are not 'Category A' risks. All activities implemented under Component 3 are, therefore, Category B or C. The capacity building undertaken under Component 2 will emphasise environmental and social safeguards and minimizing risk. Moreover, the using the People's Process as a means to implement means that communities will manage the planning and construction of infrastructure, be trained on environmental and social risks and therefore will be incentivized to minimize environmental and social impact.

The checklist shown in Table 10 has been prepared, based on initial consultations. In

44 Adaptation Fund Environmental and Social Policy, paragraph 28, Page 8

accordance with the Adaptation Fund Environmental and Social Policy, and UN-Habitat's Environmental and Social Standards, an environmental and social management plan will be prepared as part of the full proposal.

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

KINGDOM OF CAMBODIA
Nation Religion King

National Council for Sustainable Development
General Secretariat
No. 215 GSSD

Phnom Penh, 02 August 2017

To: The Adaptation Fund Board Secretariat
c/o Global Environment Facility Secretariat
1818H Street, NW, MSN P-4-400
Washington DC, United State of America
Email: secretariate@adaptation-fund.org
Fax: +1 2025223240/5

Subject: Endorsement for: "Adaptation through small-scale protective and basic-service interventions in coastal settlements of Cambodia" proposal

Dear Sir/Madam,

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

Accordingly, I am pleased to endorse the above project proposal for support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Human Settlements Programme (UN-Habitat) and executed by the Ministry of Environment, National Committee for Sub-National Democratic Development. Several other line ministries/departments, identified sub-national authorities and non-governmental organization will also be involved in the implementation of this project.

The project concept note builds on the provincial, municipal/district and commune level planning process, which seeks to mainstream climate change adaptation. As such, the project is based on numerous in-depth consultations; in close consultation with key national government entities and sub-national authorities, the proposal aims to support the implementation of specific commitments in the Cambodia Climate Change Strategic Plan (2014-2023). My Ministry is grateful for the direct support in this regard.

Please accept, Sir/Madam, the assurance of our highest consideration. I look forward to a positive response.

Yours Sincerely,

Tin Ponlok
Secretary General

B. Implementing Entity certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans including Rectangular Strategy Phase III (2014-2018) with a vision to 2030, National Strategic Development Plan (2014-2018) with a vision to 2030, Cambodia Climate Change Strategic Plan (2014-2023), National Policy on Green Growth and National Green Growth Strategic Plan (2013-2030), Sectoral Climate Change Strategic Plans and Action Plans (2014-2018), National Adaptation Program of Action for Climate Change (2014-2023), National Program for Sub-National Democratic Development (2010-2019) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

Rafael Tuts
Director, Programme Division
UN-Habitat

Date: August 04, 2017	Tel. and email: +254-20-762-3726 Raf.Tuts@unhabitat.org

Project Contact Person: Laxman Perera, Human Settlements Officer

Tel: +81-92-724-7121
Email: Laxman.Perera@unhabitat.org

ANNEX 1 Summary of Results from community Consultation in Kep and Preah Sihanouk Provinces

Kep Province

There are five target communes/Sangkat in Kep province as below information:

1. Beneficiaries

No.	Name of Sangkat/commune	Angkaol	Pong Tuek	Prey Thom	Kep	Ou Krasar
1	Number of villages/Communities	4	7	3	2	2
2	Total population	8,566	10,987	8,521	4,917	7,772
3	Number of Female	4,280	5,574	3,994	2,358	3,738
4	# of age 0-17	3,288	4,579	2,969	2,111	3,011
5	# of age 18-60	4,729	5,668	5,112	2,262	4,239
6	# of > age 60	549	740	440	544	522
7	# of indigenous people	0	0	0	0	0
8	# of disabled population	108	169	78	98	97
9	# of immigrants	397	1,373	240	160	407
10	# of informal people	20	25	260	13	23
11	# of households	1,835	2,481	1,917	1,074	1,610
12	Poverty rate (%)	18.04	11.66	11.41	9.30	16.09
13	How many people (percent) will benefit from the following interventions in the community: Main climate change impacts and risks need are: Storm, flood, Saline intrusion, drought					
	Physical/structural interventions (roads, bridges, agriculture irrigation, water supply facilities, drainage system, houses)	80%	80%	50%	50%	80%
	Trainings	50%	50%	50%	30%	50%
	Communication	100%	100%	100%	100%	100%
	Information	100%	100%	100%	100%	100%
14	Early warning systems in place covering different types of hazards (e.g. floods, cyclones, storms, droughts)	There is no local early warning system in place but they receive warming system from Ministry of Water Resources and Meteorology through TV, media and local authorities.				
15	Existence of drainage and sewage system	No system in place		There is only partial drainage system at down town but no system at outskirt areas		
16	Existence of different groups (ethnic, women, elderly, disabled, youth) who are treated differently. If so, how?	There are no ethnic minorities. They are under the supervision and management of Commune's children and women committee				
17	Participation of women in decision-making process. If no, why?	Yes, women have participated in decision-making in all level but they have very limited capacity.				
18	Responsible person to take elderly, disabled people and children	Children and Women Committee has established in each commune in order to be responsible for elderly, disable people and children but they				

		have very limited fund to support them.

2. Climate change – impacts, barriers for adaptation and possible interventions analysis

No	Name of Sangkat/commune	Most problematic climatic impact/hazard	Effects	Factors stopping your community from coping with current impacts	Possible resilience building interventions identified
1	Angkaol	• Storm surge, • Flood and sea water intrusion, • Sea level rise and strong waves, • Drought, • Coastal erosion	• Low rice production, • Destroyed houses, • Slow down fishing activities, • Damaged roads and dikes, • Lack of water supply • Water pollution/contaminated ground water, • Poor sanitation and health issues	• Bad infrastructure, • Limited irrigation, • Insufficient clean water supply, • Limited of education and skills, • Lack of sanitation, • Health issues, • Poor management of natural resources like forests, • Poor houses	• Improve road condition and drainage system, • Agriculture irrigation, • Trees plantation on coastline, • Water supply by digging new ponds and wells, • Conserve and protect natural resources and biodiversity, • Resilient houses models, • Environmental management activities, e.g. planting trees, improve sanitation, • Provide vocational training on various topics.
2	Pong Tuek				
3	Prey Thom				
4	Kep				
5	Ou Krasar				

Note: Climate hazards, effects, coping barriers and priority interventions have been consolidated because they are similar in each Sangkat/commune

3. Strengthened institutional capacity

No.	Name of Sangkat/commune	Angkaol	Pong Tuek	Prey Thom	Kep	Ou Krasar
1	Having a structured plan for hazard risk reduction/ climate change adaptation	Yes, the structured plan in place but there is no facilities and financial assistance as well as limited capacity on climate change adaptation and resilience				
2	Experience of the municipality on specialist training (for risk reduction and resilience)	There is no/limited capacity/experience at municipality or provincial level on specialist training. Usually, national specialists provide these such trainings.				
3	Having a CC and resilience plan incorporated into planning schemes	Yes, commune development plan has been elaborated climate change but limited implementation due to no fund and capacity.				
4	Reporting awareness of exposure to at least one key hazard	No, local community could not make a report on this matter due to lack of capacity. National and provincial officials have assisted on this report.				

4. Assets produced, developed or strengthened (Health issues related to climate change)

No.	Name of Sangkat/commune	Angkaol	Pong Tuek	Prey Thom	Kep	Ou Krasar
1	# of households to report an occupant with diarrhea in last 3 months in this settlement	0	0	0	0	0
2	# of households to report an occupant with malaria/ dengue last year	0	0	0	0	0
3	Existence of drainage issues that may give rise to mosquito borne diseases	Yes	Yes	Yes	Yes	Yes
4	Main health problems/ issues	No major health issues but lack of sanitation and hygiene cause of health problem to children and women. Blood pressure and liver function are main health issue for older people.				

5. Urban development and housing

No.	Name of Sangkat/commune	Angkaol	Pong Tuek	Prey Thom	Kep	Ou Krasar
1	# of dwellings with 'average' or 'poor' quality walls	1,363	1,423	1,282	660	938
2	# of overcrowded dwellings	43	17	28	8	37
3	# of dwellings, which have been trained on enhancing dwelling resilience	0	0	0	0	0

6. Water resources and infrastructure

No.	Name of Sangkat/commune	Angkaol	Pong Tuek	Prey Thom	Kep	Ou Krasar
1	# of households with toilet	1,618	1,627	1,125	605	1,162
2	% of households using following types of toilets: 1) Shared community toilet 2) Share neighbors 3) Connected to septic tank 4) Straight pipe 5) Connected to town sewerage system	90% - Straight pipe 10% - Septic tanks	90% - Straight pipe 10% - Septic tanks	80% - Straight pipe 20% - Septic tanks	70% - Straight pipe 30% - Septic tanks	80% - Straight pipe 20% - Septic tanks
3	Average type of toilet: 1) Water seal 2) Flush 3) Pit	90% - Pit 10% - Flush	90% - Pit 10% - Flush	60% - Pit 40% - Flush	60% - Pit 40% - Flush	70% - Pit 30% - Flush
4	% of households with toilet discharging directly into the environment (unimproved pit toilet or straight pipe to sea/river/etc.)	100%	100%	100%	100%	100%
5	Main water resource for livelihood	Surface water (ponds), ground water (wells), and rain water				

6	# of households that own (not shared) formal water connection with meter	162	1,658	459	439	537

7. Waste and waste infrastructure

No.	Name of Sangkat/commune	Angkaol	Pong Tuek	Prey Thom	Kep	Ou Krasar
1	Existence of regular waste collection by council or private organization	No	No	No	Yes	No
2	% of households to dispose waste in river, creek, or sea	10%	15%	15%	5%	10%
3	% of households to burn or bury waste	90%	85%	85%	20%	90%

8. Natural assets protected or rehabilitated

No.	Name of Sangkat/commune	Angkaol	Pong Tuek	Prey Thom	Kep	Ou Krasar
1	Does this settlement report issues with pollution/ environmental degradation (e.g. coral or mangroves)? And how many people affected - livelihoods	Yes, local settlement report issues with pollution and environment degradation that affected to majority of people in the city, particularly fisherman.				
2	Has any steps been taken in this settlement to improve/ maintain/reduce impacts on natural assets? And how many people affected - livelihoods	Due to no financial assistance, there is no major action taken place. Individual people have taken care for themselves. There is around 20-30% of population affected their livelihood.				
	Main environmental problems **(Choose Top 3)** 1) River flooding 2) Coastal Flooding (saltwater intrusion) 3) Surface Flooding (rainwater) 4) River Bank Erosion (soil disappearing) 5) Inland erosion 6) Coastal Erosion (beach disappearing) 7) Pollution (dirty air, dirty water, dirty soil) 8) Rubbish (waste management) 9) Drainage (e.g. blocked drains) 10) Sanitation (problems with toilet) 11) Decline in Mangrove areas 12) Plant Disease 13) Insects or bugs (flies, mosquitoes)	1. Coastal Flooding (saltwater intrusion) 2. Decline in Mangrove areas 3. Surface Flooding (rainwater) 4. Fresh water for drinking and usage		1. Drainage (e.g. blocked drains) 2. Sanitation (problems with toilet) 3. Decline in Mangrove areas 4. Surface flood		

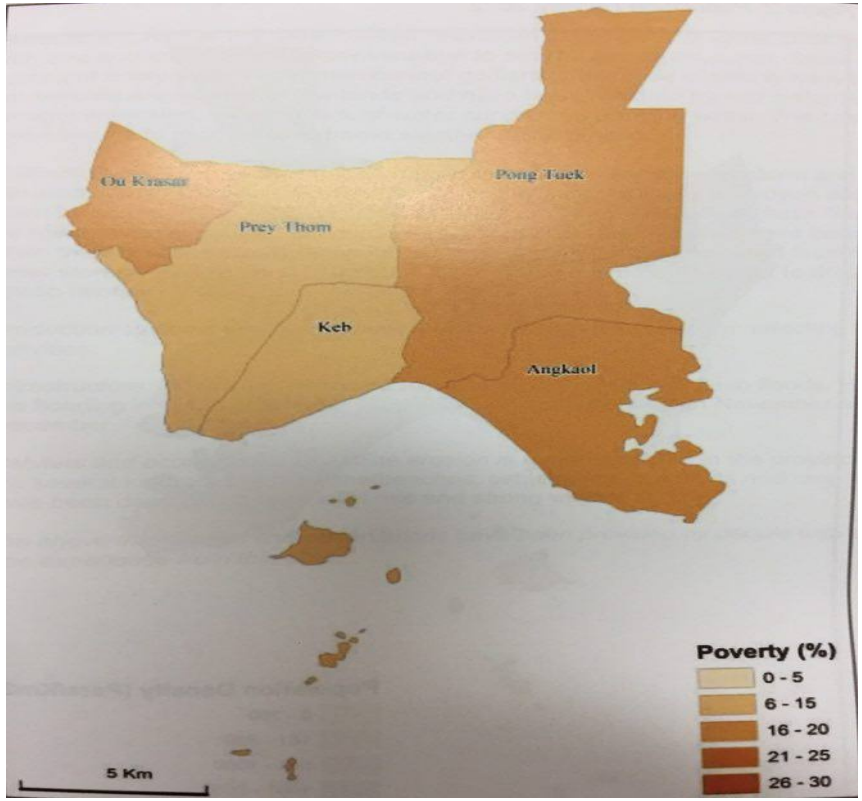
9. Improved policies & regulations

No.	Name of Sangkat/commune	Angkaol	Pong Tuek	Prey Thom	Kep	Ou Krasar
1	Have any policies been introduced or adjusted in your municipality to	There is no local policy to address climate change but they				

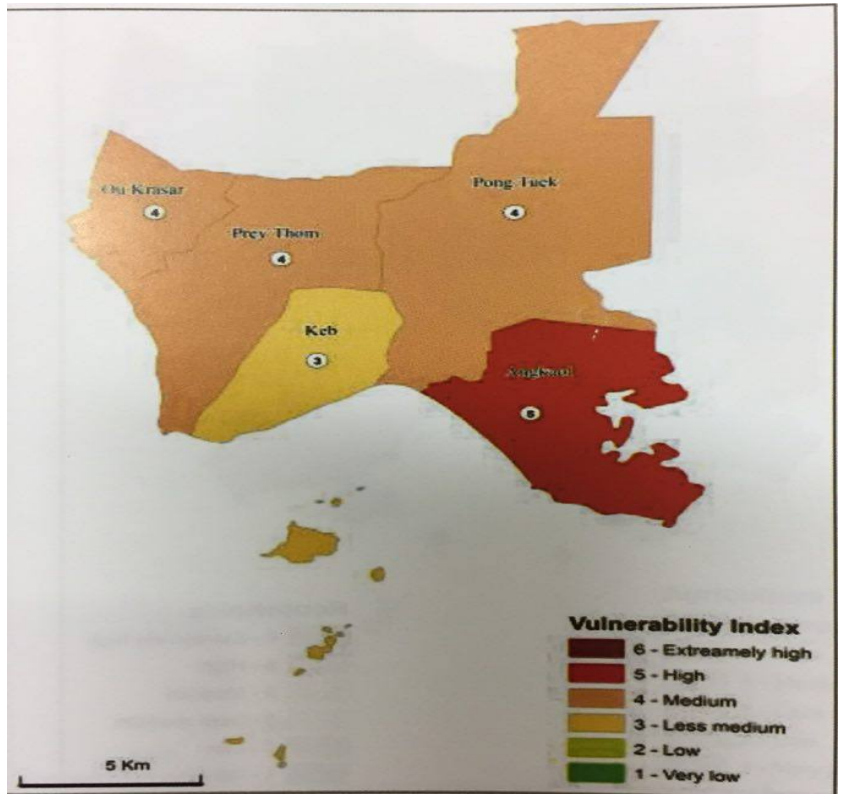
	address climate change?	implement the national climate change action plan and NAPA. Commune development plan and investment programme have also addressed climate change and disaster risk reduction.

10. Community vulnerability and risk map

Poverty Map of Kep Province by Commune



Overall Vulnerability of Kep Province by Commune



Preah Sihanouk Province

Below is some information by commune level:

1. Beneficiaries

No.	Municipality/ District	Prey Nob								Sihanoukville	
	Name of Sangkat/commune	Tuek Thla	Tuek L'ak	Samea kki	Veal Renh	Sam-rong	Prey Nob	Ou Oknha Heng	Boeng Taprom	Koh Rong	Sangkat Muoy
1	Number of Villages/communities	4	4	3	3	5	5	5	6	2	3
2	Total population	5,455	4,413	3,641	10,717	6,683	7,944	9,006	7,917	1,693	18,613
3	Number of Female	2,720	2,198	1,919	5,636	3,334	3,976	4,559	4,025	791	9,308
4	# of age 0 - 17	2,133	1,728	1,620	3,850	2,474	2,909	3,696	2,170	611	7,316
5	# of age 18 - 60	2,930	2,182	1,724	6,007	3,795	4,163	4,834	4,847	985	10,324
6	# of > age 60	392	503	297	860	414	872	476	900	97	973
7	# of indigenous people	0	0	0	0	127	0	0	0	0	0
8	# of disabled population	25	25	19	80	37	42	115	83	7	46
9	# of immigrants	551	178	101	628	223	340	139	464	526	5,582
10	# of informal people	45	13	0	40	17	42	21	5	330	160
11	# of households	1,169	963	1,044	1,967	1,352	1,608	1,688	1,503	427	4,094
12	Poverty rate (%)	20.2	20.1	19.2	26.3	19.8	18.8	18.0	12.6	23.7	11.7
13	How many people will benefit from the following interventions in the community: The main climate change impacts and risks need to be focused are: storm surge, strong waves, sea water intrusion, ground water, pollution, drinking water, waste and flood.										
	Physical/structural interventions (roads, dikes, water supply facilities, market, irrigation, drainage system, houses)	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
	Trainings	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
	Communication	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
	Information	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
14	Early warning systems in place covering different types of hazards (e.g. floods, cyclones, storms, droughts, …….)	There is no local early warning system in place but they receive warming system from Ministry of Water Resources and Meteorology through TV, media and local authorities.									
15	Existence of drainage/sewage system	There is limited drainage system available only in the downtown									
16	Existence of different groups (ethnic, women, elderly, disabled, youth) who are	There are no ethnic groups. They are under the supervision and management of Commune's children and women committee									

	treated differently. If so, how?	
17	Participation of women in decision-making process. If no, why?	Yes, women have involved all level of decision-making but they have limited knowledge and experience.
18	Responsible person to take elderly, disabled people and children	There are provincial, district and commune disaster committees and red-cross committee's responsibilities.

2. Climate change - Trend analysis

No.	Municipality/ District	Name of Sangkat/commune	Most problematic climatic hazard	Effects	Factors stopping your community from coping with current impacts	Possible adaptation building interventions identified
1	Prey Nob	Tuek Thla	• Storm surge, • Strong waves, • Sea water intrusion, • Flood, and • Sea level rise.	• Reduction tourists to visit, • Destroyed houses, • Damaged roads and dikes, • Low fish production, • Low rice production, • Contaminated ground water, • Coastline erosion, • Lack of water supply • Poor sanitation and health issues	• Low income that affect to livelihood due to no tourists, • Bad infrastructure, • Insufficient clean water supply, • Poor house conditions, • Lack of sanitation, • Health issues, • Poor management of natural resources like forests, • Limited irrigation, Limited of education and skills,	• Improve road condition, • Provide clean water supply, • Provide proper drainage system, • Conserve and protect natural resources and biodiversity, • Provide resilient house models, • Environmental management activities, e.g. planting trees, improve sanitation, • Provide vocational training on various topics, • Agriculture irrigation.
2		Tuek L'ak				
3		Sameakki				
4		Veal Renh				
5		Samrong				
6		Prey Nob				
7		Ou Oknha Heng				
8		Boeng Taprom				
9	Sihanoukville	Koh Rong				
10		Sangkat Muoy				

Note: Climate hazards, effects, coping barriers and priority interventions have been consolidated because they are similar in each Sangkat/commune

3. Strengthened institutional capacity

No.	Municipality/ District	Prey Nob								Sihanoukville	
	Name of Sangkat/commune	Tuek Thla	Tuek L'ak	Samea kki	Veal Renh	Samrong	Prey Nob	Ou Oknha Heng	Boeng Taprom	Koh Rong	Sangkat Muoy
1	Having a structured plan for hazard risk reduction/ climate change adaptation	Yes, there is a structured plan in place but very limited operation/function due to no capacity and fund.									
2	Experience of the municipality on	No specialist training from the municipality/district level to support the communities. They are from provin-									

	specialist training (for risk reduction and resilience)	cial and national level with limited supported.
3	Having a CC and resilience plan incorporated into planning schemes	Yes, all plans such as commune, district/municipality, and provincial development plans have addressed climate change adaptation and resilience. However, the implementation is limited due to low capacity and financial support.
4	Reporting awareness of exposure to at least one key hazard	Yes, there is a report on disaster happened in the areas such as storms and flood.

4. Assets produced, developed or strengthened (Health issues related to climate change)

No.	**Municipality/ District**	**Prey Nob**								**Sihanoukville**	
	Name of Sangkat/commune	Tuek Thla	Tuek L'ak	Samea kki	Veal Renh	Samrong	Prey Nob	Ou Oknha Heng	Boeng Taprom	Koh Rong	Sangkat Muoy
1	# of households to report an occupant with diarrhea in last 3 months in this settlement	0	0	0	0	0	0	0	0	0	0
2	# of households to report an occupant with malaria/ dengue last year	0	0	0	0	0	0	0	0	0	0
3	Existence of drainage issues that may give rise to mosquito borne diseases	Yes, there is drainage issues such as bad smell, pollution, mosquito and bad living environment									
4	Main health problems/ issues	There are skin diseases, mosquito borne diseases, blood pressure……									

5. Urban development and housing

No.	**Municipality/ District**	**Prey Nob**								**Sihanoukville**	
	Name of Sangkat/commune	Tuek Thla	Tuek L'ak	Samea kki	Veal Renh	Samrong	Prey Nob	Ou Oknha Heng	Boeng Taprom	Koh Rong	Sangkat Muoy
1	# of dwellings with 'average' or 'poor' quality walls	973	879	854	1,399	1,187	1,392	1,438	1,342	373	3,157
2	# of overcrowded dwellings	30	23	47	50	11	7	30	10	29	46
3	# of dwellings, which have been trained on enhancing dwelling resilience	0	0	0	0	0	0	0	0	0	0

6. Water resources and infrastructure

No.	**Municipality/ District**	**Prey Nob**	**Sihanoukville**

	Name of Sangkat/commune	Tuek Thla	Tuek L'ak	Samea kki	Veal Renh	Samrong	Prey Nob	Ou Oknha Heng	Boeng Taprom	Koh Rong	Sangkat Muoy
1	# of households with toilet	455	702	724	1,433	794	1,254	777	760	318	3,757
2	% of households using following types of toilets: 1) Shared community toilet 2) Share neighbours 3) Connected to septic tank 4) Straight pipe 5) Connected to sewerage system	Straigh t pipe – 100%	Straig ht pipe – 100%	Straight pipe – 100%	Straight pipe – 100%	Straight pipe – 100%	Straigh t pipe – 100%	Straight pipe – 100%	Straight pipe – 100%	Straight pipe – 100%	Straight pipe – 70% Septic tank – 30%
3	Average type of toilet: 1) Water seal 2) Flush 3) Pit	Flush	Flush	Flush	Flush	Flush	Flush	Flush	Flush	Flush	Flush
4	% of households with toilet discharging directly into the environment (unimproved pit toilet or straight pipe to sea/river/etc.)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
5	Main water resource for livelihood	Surface water, underground water, ponds, wells, and rainwater									
6	# of households that own (not shared) formal water connection with meter	872	598	905	1,955	877	965	698	1,225	95	3,043

7. Waste and waste infrastructure

No.	Municipality/ District	Prey Nob								Sihanoukville	
	Name of Sangkat/commune	Tuek Thla	Tuek L'ak	Samea kki	Veal Renh	Samrong	Prey Nob	Ou Oknha Heng	Boeng Taprom	Koh Rong	Sangkat Muoy
1	Existence of regular waste collection by council or private organization	No	No	No	No	No	No	No	No	No	No
2	% of households to dispose waste in river, creek, or sea	20%	20%	20%	10%	20%	20%	20%	20%	10%	15%
3	% of households to burn or bury waste	80%	80%	80%	90%	80%	80%	80%		90%	85%

8. Natural assets protected or rehabilitated

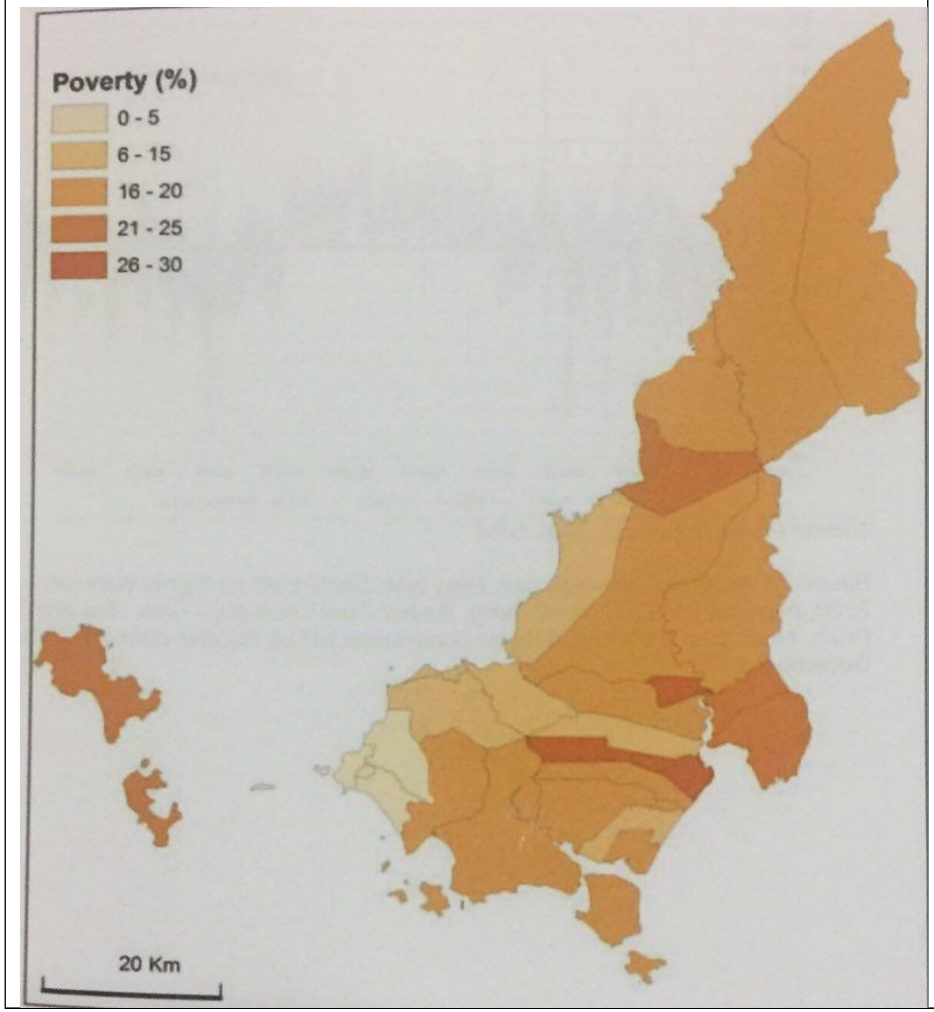
No.	Municipality/ District	Prey Nob								Sihanoukville	
	Name of Sangkat/commune	Tuek Thla	Tuek L'ak	Same akki	Veal Renh	Sam-rong	Prey Nob	Ou Oknha Heng	Boeng Taprom	Koh Rong	Sangkat Muoy
1	Does this settlement report issues with pollution/ environmental degradation (e.g. coral or mangroves)?	Yes, local settlement report issues with pollution and environment degradation that affected to majority of people in the communities.									
2	Has any steps been taken in this settlement to improve/ maintain/reduce impacts on natural assets?	There is very limited implementation because no fund support. Community people have taken care for themselves. There is around 50% of population affected their livelihood.									
3	Main environmental problems **(Choose Top 3)** 1) River flooding 2) Coastal Flooding (saltwater intrusion) 3) Surface Flooding (rainwater) 4) River Bank Erosion (soil disappearing) 5) Inland erosion 6) Coastal Erosion (beach disappearing) 7) Pollution (dirty air, dirty water, dirty soil) 8) Rubbish (waste management) 9) Drainage (e.g. blocked drains) 10) Sanitation (problems with toilet) 11) Decline in Mangrove areas 12) Plant Disease 13) Insects or bugs (flies, mosquitoes)	• Decline in Mangrove areas • Drainage (e.g. blocked drains) • Sanitation (problems with toilet)/ Rubbish (waste management								• Deforestation • Pollution/ Rubbish/ Drainage/ Sanitation • Coastal Erosion	

9. Improved policies & regulations

No.	Municipality/ District	Prey Nob								Sihanoukville	
	Name of Sangkat/commune	Tuek Thla	Tuek L'ak	Samea kki	Veal Renh	Samrong	Prey Nob	Ou Oknha Heng	Boeng Taprom	Koh Rong	Sangkat Muoy
1	Have any policies been introduced or adjusted in your municipality to address climate change?	There is no local policy to address climate change but they implement the national climate change action plan and NAPA. Commune development plan and investment programme have also addressed climate change and disaster risk reduction.									

10. Community vulnerability and risk map

Poverty Map of Preah Sihanouk Province by Commune



Household with unsafewater of Preah Sihanouk Province by Commune