



# GEF-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: LDCF

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## PART I: PROJECT INFORMATION

Project Title: Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region.			
Country(ies):	Bhutan, Cambodia, Lao PDR and Myanmar.	GEF Project ID: <sup>1</sup>	5815
GEF Agency(ies):	UNEP	GEF Agency Project ID:	01278
Other Executing Partner(s):	UNEP – Regional Office for Asia Pacific (ROAP), UN-HABITAT, Thimphu Thromde (Bhutan), NCSO (Cambodia), DDMCC (Lao PDR) and MoNREC (Myanmar)	Submission Date:	November 23, 2016
GEF Focal Area (s):	Climate Change Adaptation	Project Duration (Months)	48 months
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/> Corporate Program: SGP <input type="checkbox"/>		
Name of Parent Program	[if applicable]	Agency Fee (\$)	570,000

## A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES<sup>2</sup>

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in \$)	
			GEF Project Financing	Co-financing
CCA-1 (Component 2)	Outcome 1.1: Vulnerability of physical assets and natural systems reduced Outcome 1.2: Livelihoods and sources of income of vulnerable populations diversified and strengthened	LDCF	4,090,000	60,116,468
CCA-2 (Component 1 & 3)	Outcome 2.1: Increased awareness of climate change impacts, vulnerability and adaptation. Outcome 2.3: Institutional and technical capacities and human skills strengthened to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures	LDCF	1,910,000	28,073,949
<b>Total project costs</b>			6,000,000	88,190,417

## B. PROJECT DESCRIPTION SUMMARY

<b>Project Objective:</b> To reduce the vulnerability of poor urban communities in Asia-Pacific LDCs to climate change impacts using Ecosystem-based Adaptation (EbA)						
Project Components/ Programs	Financing Type <sup>3</sup>	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Confirmed Co-financing
1. Institutional strengthening and capacity building of city management authorities in pilot	TA	1.1. Institutional strengthening and capacity building of city management authorities in pilot	1.1.1. Policy briefs developed on cost-effective adaptation to climate change in an urban context	LDCF	577,339	8,485,961

<sup>1</sup> Project ID number remains the same as the assigned PIF number.

<sup>2</sup> When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#).

<sup>3</sup> Financing type can be either investment or technical assistance.

cities to plan and implement urban EbA		cities to plan and implement urban EbA	<p>1.1.2. Training on climate change impacts and appropriate urban EbA interventions provided to city management authorities in Bhutan, Cambodia, Lao PDR and Myanmar (including from pilot cities)</p> <p>1.1.3. Decision-making tools to integrate urban EbA into development planning and the NAP process, designed and presented to city authorities in Bhutan, Cambodia, Lao PDR and Myanmar</p>			
2. Demonstrating urban EbA interventions in pilot cities	Inv	2.1. EbA demonstrated in pilot cities to reduce the vulnerability of poor, urban communities	<p>2.1.1. Vulnerability maps and adaptation reports developed for pilot cities</p> <p>2.1.2. City-specific urban EbA interventions appropriate to the social, cultural and environmental contexts – including urban reforestation, urban agriculture and wetland restoration – demonstrated in pilot cities</p> <p>2.1.3. Livelihood improvement plans based on urban ecosystems developed and implemented with poor urban communities</p> <p>2.1.4. Long-term research programmes established in local scientific institutions to assess the long-term societal, economic and ecological benefits of urban EbA in pilot cities</p>	LDCF	4,264,033	62,674,482

3. Disseminating knowledge and raising public awareness on urban EbA in pilot cities	TA	3.1. Knowledge base for supporting the design of urban EbA interventions strengthened, and public awareness of the positive potential of urban EbA interventions to reduce vulnerability to climate change impacts increased	<p>3.1.1. Performance of urban EbA interventions in pilot cities monitored and assessed</p> <p>3.1.2. National public awareness programmes implemented on climate change effects in urban areas and appropriate EbA interventions to manage these effects, including lessons learned from interventions implemented in pilot cities</p> <p>3.1.3. Relevant local, national and regional platforms updated to share knowledge on integrating urban EbA into city planning and management processes to facilitate the upscaling of urban EbA approaches throughout the region</p> <p>3.1.4. National upscaling strategies developed and presented to policy- and decision-makers to promote urban EbA approaches</p>	LDCF	655,488	9,634,619
Monitoring and Evaluation					218,000	3,204,252
Subtotal					5,714,860	83,999,314
Project Management Cost (PMC) <sup>4</sup>				LDCF	285,140	4,191,103
<b>Total project costs</b>					<b>6,000,000</b>	<b>88,190,417</b>

### C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Please include evidence for co-financing for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Amount (\$)
Multilateral Agency	United Nations Human Settlement Programme (UN-HABITAT)	Grant	1,896,417

<sup>4</sup> For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

GEF Agency	United Nations Development Programme (UNDP)/United Nations Environment Programme (UNEP) Poverty Environment Initiative (PEI)	Grant	2,500,000
National Budget	Thimphu Thromde (Bhutan)	Grant	1,500,000
National Budget	Provincial Hall of Kep (Cambodia)	Grant	1,000,000
National Budget	Phomxaly and Oudomxay province governments (Lao PDR)	Grant	2,274,000
National Budget	Mandalay City Development Committee (Myanmar)	Grant	78,970,000
National Budget	National Council for Sustainable Development (Cambodia)	In kind	50,000
<b>Total Co-financing</b>			<b>88,190,417</b>

**D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee <sup>a)</sup> (b) <sup>2</sup>	Total (c)=a+b
UNEP	LDCF	Bhutan	Climate Change	(select as applicable)	1,500,000	142,500	1,642,500
UNEP	LDCF	Cambodia	Climate Change	(select as applicable)	1,500,000	142,500	1,642,500
UNEP	LDCF	Lao PDR	Climate Change	(select as applicable)	1,500,000	142,500	1,642,500
UNEP	LDCF	Myanmar	Climate Change	(select as applicable)	1,500,000	142,500	1,642,500
<b>Total Grant Resources</b>					<b>6,000,000</b>	<b>570,000</b>	<b>6,570,000</b>

a ) Refer to the Fee Policy for GEF Partner Agencies

## E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS<sup>5</sup>

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	<i>hectares</i>
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	<i>hectares</i>
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	<i>Number of freshwater basins</i>
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	<i>Percent of fisheries, by volume</i>
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO <sub>2e</sub> mitigated (include both direct and indirect)	<i>metric tons</i>
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	<i>metric tons</i>
	Reduction of 1000 tons of Mercury	<i>metric tons</i>
	Phase-out of 303.44 tons of ODP (HCFC)	<i>ODP tons</i>
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	<i>Number of Countries:</i>
	Functional environmental information systems are established to support decision-making in at least 10 countries	<i>Number of Countries:</i>

## F. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? NO

(If non-grant instruments are used, provide an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF Trust Fund) in Annex D.

## PART II: PROJECT JUSTIFICATION

### A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF<sup>6</sup>

A.1. *Project Description*. Elaborate on: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area<sup>7</sup> strategies, with a brief description of expected outcomes and components of the project, 4) [incremental/additional cost reasoning](#) and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and [co-financing](#); 5) [global environmental benefits](#) (GEFTF) and/or [adaptation benefits](#) (LDCF/SCCF); and 6) innovativeness, sustainability and potential for scaling up.

<sup>5</sup> Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

<sup>6</sup> For questions A.1 –A.7 in Part II, if there are no changes since PIF, no need to respond, please enter “NA” after the respective question.

<sup>7</sup> For biodiversity projects, in addition to explaining the project’s consistency with the biodiversity focal area strategy, objectives and programs, please also describe which [Aichi Target\(s\)](#) the project will directly contribute to achieving..

Several changes have been made to the alignment of the Project Document, compared with the project design described in the PIF. The following summarises the most significant changes in terms of GEF Focal Areas, co-financing, partner projects and the project's outcomes/outputs:

- Since the PIF was developed, the revised results framework for the GEF Adaptation Programme was introduced and therefore the focal area objectives of the project were revised to ensure that the project aligns with – and can be reported according to – the GEF 6 Adaptation Monitoring and Assessment Tool (AMAT). In the PIF, the project was aligned with three GEF Focal Area Objectives, namely CCA-1 (Outcome 2), CCA-2 (Outcomes 1 and 3) and CCA-3 (Outcome 1). Because of the differences between CCA-3 in GEF 5 and GEF 6, this focal area was removed from the project. Two out of three GEF Focal Area Objectives were therefore maintained in the PD. The specific Focal Area Outcomes within each Focal Area Objective were modified in accordance with changes made to the GEF 6 AMAT indicators with the following objectives: i) making indicators as attainable and measurable as possible; ii) aligning indicators with the outcomes selected at PIF stage; and iii) maximising the number of LDCF project outputs covered by the combination of indicators. From the PIF to the PD, the Focal Area Outcomes changed as follows: i) CCA-1, including Outcome 1.1 as well as Outcome 1.2; and iii) CCA-3 was removed.
- Cities selected during PPG: Thimphu in Bhutan and Mandalay in Myanmar were selected in accordance with the PIF. However, Kep in Cambodia and Phongsaly in Lao PDR were not initially part of the cities suggested in the PIF. During the inception and validation workshops, several cities were evaluated using the proposed selection criteria. Both Kep and Phongsaly were selected because they are greatly vulnerable to climate change, less developed than the cities suggested in the PIF and because they have received limited donor funds to date.
- The parallel co-financing provided by UN-Habitat was updated. A total of US\$1,896,417 will be provided from five projects being implemented by UN-Habitat in the targeted countries. The LDCF project will also benefit from US\$2,500,000 from the UNEP Poverty and Environment Initiative (PEI) as co-financing. However, UNEP co-financing through the UNEP EbA Flagship Programme and the UNEP Urban EbA project was cancelled because the aforementioned has concluded and the latter was still under development was therefore not pursued. In addition to regional projects, national baseline projects have also been identified. The following national co-financing amounts have been secured: i) US\$1,500,000 for Bhutan; ii) US\$1,050,000 for Cambodia; iii) US\$2,274,000 for Lao PDR; and iv) US\$78,970,000 for Myanmar.

Some minor changes to the outcomes and outputs defined in the PIF were undertaken to make them more specific, measurable and attainable, and to align with the country's requirements. These changes are presented and explained in the tables below.

<b>PIF</b>	<b>PD/CEO</b>	<b>PD/CEO</b>
<b>Expected outcomes</b>	<b>Expected outcomes</b>	<b>Justification of the change to the PIF</b>
1: Technical and institutional capacity of city management authorities to integrate urban EbA into development planning strengthened.	1: Institutional strengthening and capacity building of city management authorities in pilot cities to plan and implement urban EbA.	While the principle behind the outcome remains the same, the wording was changed slightly to be more specific.
2: Vulnerability of poor urban communities to climate change impacts in pilot cities reduced.	2: EbA demonstrated in pilot cities to reduce the vulnerability of poor, urban communities.	While the principle behind the outcome remains the same, the wording of the outcome was changed to make it more measurable. It is more cost-effective to quantify the extent to which EbA interventions have been demonstrated than measure a change in vulnerability over a four year period.
3: Knowledge base for supporting the design of urban EbA interventions strengthened, and public awareness	3: Knowledge base for supporting the design of urban EbA interventions strengthened, and public awareness	No change

of the positive potential of urban EbA interventions to reduce vulnerability to climate change impacts increased.	of the positive potential of urban EbA interventions to reduce vulnerability to climate change impacts increased.	
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<b>PIF</b>	<b>PD/CEO</b>	<b>PD/CEO</b>
<b>Expected outputs<sup>8</sup></b>	<b>Expected outputs</b>	<b>Justification of the change to the PIF</b>
1.1: Knowledge on effective adaptation to climate change in an urban context collated, reviewed and synthesised to guide interventions in pilot cities.	1.1: Policy briefs developed on cost-effective adaptation to climate change in an urban context.	The wording of the output was amended to make it more specific and measurable, and to avoid confusion with Component 3.
1.1.2: Training on climate change impacts and appropriate urban EbA interventions provided to city management authorities in pilot cities.	1.2: Training on climate change impacts and appropriate urban EbA interventions provided to city management authorities in Bhutan, Cambodia, Lao PDR and Myanmar (including from pilot cities).	The wording of the output was amended slightly so that training will be provided at the national scale instead of only in the pilot cities. This will promote upscaling of the interventions beyond the pilot cities.
1.1.3: Decision-making tools developed to integrate urban EbA into development planning.	1.3: Decision-making tools to integrate urban EbA into development planning and the NAP process designed and presented to city authorities in Bhutan, Cambodia, Lao PDR and Myanmar.	The wording of the output was amended slightly to make it more specific.
2.1.1 City-specific climate change impacts and adaptation needs assessed through a multi-stakeholder engagement process and cost-benefit analysis.	2.1: Vulnerability maps and adaptation reports developed for pilot cities.	The wording of the output was amended to make it more technical. The “assessments of city-specific climate change impacts and adaptation needs” is captured under “vulnerability maps and adaptation reports” as explained in Section 3.3.
2.2: City-specific urban EbA interventions appropriate to the social, cultural and environmental contexts – including urban reforestation, urban agriculture and wetland restoration – implemented in pilot cities.	2.2: City-specific urban EbA interventions appropriate to the social, cultural and environmental contexts – including urban reforestation, urban agriculture and wetland restoration – implemented in pilot cities.	
2.3: Alternative livelihoods based on the benefits of city-specific urban EbA interventions developed and promoted to reduce the	2.3: Livelihood improvement plans based on urban ecosystems developed and implemented with poor urban communities.	The wording of the output was amended to make it more measurable. Additionally, the development of livelihood improvement plans will enable livelihood development to be promoted beyond the

<sup>8</sup> In case of a single focal area, single country, single GEF Agency project, and single trust fund, no need to provide information for this table.

PIF	PD/CEO	PD/CEO
Expected outputs <sup>8</sup>	Expected outputs	Justification of the change to the PIF
climate vulnerability of poor urban communities		implementation period and provide benefits to a greater number of people.
2.4: Long-term research programmes established in scientific institutions to assess the long-term societal, economic and ecological benefits of urban EbA in pilot cities.	2.4: Long-term research programmes established in local scientific institutions to assess the long-term societal, economic and ecological benefits of urban EbA in pilot cities.	
3.1: Performance of urban EbA interventions in pilot cities monitored and assessed.	3.1: Performance of urban EbA interventions in pilot cities monitored and assessed.	
3.2: Lessons learned from urban EbA interventions in pilot cities reviewed, synthesized and disseminated to local authorities and the public.	3.2: National public awareness programmes implemented on climate change effects in urban areas and appropriate EbA interventions to manage these effects, including lessons learned from interventions implemented in pilot cities.	Outputs 3.2 and 3.4 were merged to avoid redundancy, Output 3.2 being part of Output 3.4. The scope of Output 3.2 was therefore increased from the dissemination of lessons learned on successful LDCF project interventions to the implementation of national public awareness raising programmes. These awareness programmes will focus on climate change adaptation in urban area, including the interventions of the LDCF project and other successful EbA interventions.
3.3: Knowledge on integrating urban EbA into city planning and management processes generated and made available on local, national and regional platforms to facilitate the upscaling of urban EbA approaches throughout the region.	3.3: Relevant local, national and regional platforms updated to share knowledge on integrating urban EbA into city planning and management processes to facilitate the upscaling of urban EbA approaches throughout the region.	The wording of the output was amended to make it more measurable.
3.4: Public awareness and training programmes established on climate change impacts and appropriate urban EbA interventions.		
3.5: National upscaling strategies developed and institutionalised to promote urban EbA approaches.	3.4: National upscaling strategies developed and presented to policy- and decision-makers to promote urban EbA approaches.	It is beyond the scope of the project to institutionalise the upscaling strategy. The wording of the output was therefore amended to make it more attainable.

### 1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed.

The Asia-Pacific region is currently experiencing rapid urbanization, with populations in cities increasing at an average rate of 2% per year. However, population growth in Bhutan (~4%), Cambodia (~3%), Lao PDR (~5%) and Myanmar (~35) – all Least Developed Countries (LDCs) in the Asia-Pacific region – exceeds this average. In the rural areas of

Bhutan, Cambodia, Lao PDR and Myanmar, the negative effects of climate change – including floods and droughts – have resulted in a decrease in agricultural productivity. Consequently, food insecurity and loss of livelihoods have become pervasive in these countries, resulting in the migration of rural communities to urban areas. This rapid urbanization is coupled with limited urban planning, which has resulted in several socio-economic problems, including: i) rapid and unplanned expansion of housing into areas that are vulnerable to natural disasters or otherwise unsuitable for settlement; ii) inadequate access to public services such as waste management, sanitation and refuse collection; and iii) unsustainable management and use of natural resources, particularly water.

Urban expansion in the Asia-Pacific region is negatively affecting urban and peri-urban ecosystems, including wetlands, green spaces, agricultural land, coastal areas and forests. For example, the building of urban infrastructure: i) replaces natural ecosystems; ii) leads to increased pollution; and iii) decreases biodiversity. The degradation of urban water bodies such as wetlands and rivers is further exacerbated by the inadequate management of urban waste. This results in the blockage of waterways and contributes to urban flooding as well as an increase in the incidence of vector- and waterborne diseases. The abovementioned effects of ecosystem degradation are a threat to the lives and well-being of urban communities in the Asia Pacific region.

The urban poor are particularly vulnerable as a result of limited access to basic services, such as clean water, sanitation and electricity. For example, of the urban population in Bhutan, ~16% do not have access to safe drinking water, ~11% do not have access to toilets, and ~40% do not use electricity as their main source of lighting. The percentage of the population who live below the poverty line in these countries ranges from ~20% in Cambodia to ~30% in Myanmar. Moreover, poor urban communities often live in informal settlements, many of which are situated in areas with limited agricultural productivity and are vulnerable to natural hazards. Intact urban and peri-urban ecosystems provide a number of products and services, including: i) the provision of food, fuelwood and potable water; ii) regulation of floods, micro-climates and waste decomposition; and iii) the provision recreational and cultural benefits while improving the aesthetics of cities.

Current climate variability and change is exacerbating the above-mentioned environmental degradation and increasing the vulnerability of urban communities in the Asia-Pacific region. The effects of climate change in the Asia-Pacific region have already been widely observed. These include *inter alia* increased: i) variability in the timing and mean annual volume of rainfall received; ii) mean annual temperature and number of ‘hot’ days per year; iii) frequency and severity of climate-related hazards such as droughts, floods and storms; and iv) frequency of extreme events such as hurricanes. Under future climatic conditions, urban communities in the Asia-Pacific region are predicted to experience *inter alia*: i) decreased food security; ii) decreased water security; iii) inadequate sanitary conditions; iv) increased health risks and spread of diseases such as dengue, typhoid and cholera; v) loss of life, assets and livelihood options; vi) increased uncontrolled migration; and vii) reduced energy supplies. Consequently, there is an urgent need to implement adaptation interventions to reduce the negative impacts of climate change on poor urban communities in the Asia-Pacific region.

Ecosystem-based approaches to Adaptation (EbA) are a cost-effective approach to reduce the vulnerability of urban and peri-urban communities to climate change. The vulnerability of these communities is reduced by protecting, maintaining and rehabilitating priority ecosystems<sup>9</sup> in urban areas to: i) act as physical buffers against climate change-related hazards; and ii) generate multiple social and environmental co-benefits. Importantly, the EbA approach has been shown to require comparatively small investments relative to the long-term social, economic and environmental benefits that it generates<sup>10</sup>. However, there is currently limited awareness and technical capacity within national and municipal governments to identify and integrate EbA approaches into development planning in the Asia-Pacific region. In particular, the government authorities and institutions responsible for urban planning, management and development in cities in Bhutan, Cambodia, Lao PDR and Myanmar are largely unaware of the benefits of implementing an ecosystem-based approach to adaptation. Additionally, communities living in urban and peri-urban areas within the focal countries have limited knowledge, awareness and technical capacity to implement this type of approach.

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<sup>9</sup>Jones, H.P., Hole, D.G. & Zavaleta, E.S. 2012. Harnessing nature to help people adapt to climate change. *Nature Climate Change* 2: 504–509.

<sup>10</sup>UNEP/STREP 2012. A comparative analysis of ecosystem-based adaptation and engineering options for Lami Town, Fiji: Synthesis Report.

The **problem** that the LDCF-financed project will address is that urban communities in the Asia-Pacific region are vulnerable to the present and future effects of climate change that exacerbate environmental pressures. Uncoordinated urban planning and development, poverty and poor waste management are underlying threats that increase the vulnerability of communities in Thimphu, Kep, Phongsaly and Mandalay to natural disasters – including flooding, landslides and vector- and water-borne diseases. Furthermore, these threats result in environmental degradation and consequently affect the provision of ecosystem goods and services on which urban communities rely. The present and future effects of climate change (as described in Section 2.1 of the Project Document) – particularly floods and droughts – will exacerbate these threats. Compounding the effects of climate change is the limited technical capacity and financial resources within urban communities to adapt and reduce their vulnerability to the negative effects of climate change.

The **preferred solution** is to reduce the vulnerability of urban communities in the Asia-Pacific region to climate change by catalyzing the integration of EbA into urban planning. However, there are several **barriers** to achieving this preferred solution. These barriers include: i) limited technical capacity to integrate EbA into urban development planning; ii) limited coordination between government sectors; iii) limited on-the-ground demonstrations of the benefits of urban EbA; iv) limited understanding, research and public awareness on urban EbA; and v) limited financial resources to implement urban EbA activities as part of municipal planning and budgets.

The LDCF-financed project will contribute to overcoming the barriers described in the paragraph above by: i) strengthening the institutional capacity of city management authorities in cities – Thimphu, Kep, Phongsaly, Oudomxay and Mandalay – to integrate EbA into urban development plans; ii) enhancing the technical capacity of city management authorities and urban communities to implement EbA as a response to climate change; iii) implementing urban EbA interventions across the Asia Pacific region; iv) increasing awareness of the general public on the benefits of urban EbA approaches; and v) engaging with representatives of the private sector to catalyse funding for sustaining, replicating and upscaling of successful EbA interventions across the four pilot countries and elsewhere in the Asia Pacific region.

## 2) The baseline scenario and associated baseline projects

Under the baseline scenario, communities in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay will continue to experience economic, social and environmental problems that will be further exacerbated by the effects of climate change. Inadequate planning for urban development will continue to result in poor, vulnerable communities having to live in marginal areas such as flood-risk zones. Furthermore, unsustainable land-use practices and pollution of water resources will continue to degrade the urban and peri-urban ecosystems within these cities. This ecosystem degradation will in turn continue to compromise the provision of ecosystem goods and services that underpin the well-being of urban communities.

### *Component 1: Institutional strengthening and capacity building of city management authorities in pilot cities to plan and implement urban EbA*

In the Asia-Pacific region, several climate change programmes – including the Cities and Climate Change Initiative (CCCI), Asian Cities Climate Change Resilience Network (ACCCRN) and South East Asia Systems for Analysis Research and Training (SEA START) – provide training to increase the capacity of national and local governments to develop climate change action strategies. As a result, several national strategies and plans have been developed in Bhutan, Cambodia, Lao PDR and Myanmar that include considerations related to planning for climate change. Examples of such plans and strategies include *inter alia* Cambodia's Climate Change Strategic Plan and National Strategic Development Plan, as well as the Action Plan on Climate Change of Lao PDR (2013–2020). However, these programmes have not provided training to national and local governments on EbA as an adaptation option. Government representatives have not received training on planning and implementing urban EbA at a large scale as a cost-effective and low-risk approach to climate change adaptation. Consequently, policy- and decision-makers have limited awareness of EbA as a cost-effective and low-risk approach to achieving development objectives under conditions of climate change. Urban EbA has therefore not been integrated into policies, strategies and local/city level plans that underpin the governance of urban ecosystems and development of these areas. As a result, the EbA approach is not included in current business-as-usual programmes or plans to improve the circumstances of urban poor communities in the four focal countries.

A number of cross-sectoral committees have been established in some of the focal countries to serve as national platforms for the development of policies, strategies and activities to adapt to the effects of climate change. These committees include *inter alia* Bhutan's National Environment Commission, Cambodia's National Climate Change Committee and Lao's National Steering Committee on Climate Change. However, the policies generated by these national-level committees on climate change adaptation do not currently promote EbA as an effective approach to adaptation. Furthermore, coordination between government departments, the private sector and research institutions is limited. This prevents the dissemination of relevant technical information on urban EbA and the upscaling of successful local efforts to the national and regional level. It is therefore likely that policy- and decision-makers at the national and sub-national level who are responsible for drafting policies and strategies related to urban planning and environmental management will continue to have insufficient awareness of the benefits of the EbA approach to climate change adaptation. In the absence of technical knowledge and an evidence base on the benefits of EbA at a national scale, climate change strategies and urban development plans will continue to be designed and implemented without including the EbA approach. Under this scenario, planning and implementation of initiatives focused on socio-economic development and environmental management in the Asia-Pacific region are likely to continue without explicit integration of EbA approaches into policies and strategies as a cost-effective and low-risk measure for achieving development objectives under current and future conditions of climate change.

### *Component 2: Demonstration of urban EbA interventions in pilot cities*

Urban areas in the four focal countries face a number of challenges, which include rapid urbanisation, extensive poverty, social marginalisation and reduced food and water security. As a result, the governments of Bhutan, Cambodia, Lao PDR and Myanmar are currently focused on addressing the socio-economic and environmental problems to improve the well-being of urban communities. Many of the challenges affecting urban communities in the four focal countries will be exacerbated by the effects of climate change, which include flooding, storm surges, heat stress, drought, landslides, and groundwater depletion. These effects will likely result in *inter alia*: i) damage to infrastructure; ii) increased transmission of life-threatening diseases; iii) loss of life; iv) decreased agricultural yields; v) reduced food security; and vi) a reduction in access to clean water.

To date, most climate change adaptation interventions in cities have focused on the use of technologies and the development of infrastructure as a means of reducing climate change vulnerability. For example, to stabilise slopes and prevent landslides in Bhutan, retaining walls have been built along steep slopes. In contrast to this business-as-usual approach, an EbA approach would include the restoration of natural vegetation to prevent soil erosion and enhance groundwater infiltration. In Myanmar, initiatives in the city have focused on the construction of hard infrastructure to improve the well-being of urban communities, including storm water drains for water management. These initiatives have not included an EbA approach, which would see the restoration of natural vegetation buffers and to protect infrastructure and increase the resilience of urban communities under conditions of climate change. Although hard infrastructure interventions are often appropriate to deal with specific urban problems or climate change threats – thereby reducing risks or damage from natural disasters – they are usually costly and incompatible with other sustainable development initiatives. Furthermore, climate-resilient measures are not explicitly included in the design and implementation hard interventions – in contrast to the holistic EbA approach. For example in Myanmar, non-EbA initiatives that focus on the rehabilitation of vegetation to mitigate the impacts of climate-related disasters – undertaken by the Forestry Department, Dryzone Greening Department and City Development Committee in Mandalay – do not integrate climate scenarios in the selection of species. As a result, these initiatives will continue to select plant species that are not heat or drought tolerant. The efficacy of these restoration activities is therefore constrained by the negative effects of climate change. This is primarily a result of a limited understanding and proof-of-concept for urban EbA interventions, and consequently limited expertise on urban EbA within city management authorities.

Because city management authorities have a limited understanding of climate change and its impact on livelihoods, the identification of appropriate, climate-related adaptation activities cannot be undertaken. This limited understanding is compounded by a near absence of training on how to adapt community livelihoods to climate change using urban EbA approaches. In the Asia-Pacific region, livelihood diversification activities are generally undertaken as business-as-usual

approaches to address current challenges related to poverty reduction, income generation and food security. There is little consideration of how these activities should be implemented to generate climate change adaptation benefits. Vulnerable communities therefore remain unable to prioritise the implementation of appropriate adaptation interventions, and particularly the use of urban EbA approaches to address the expected effects of climate change. As a result, these vulnerable communities will remain unable to cope with current and future climate change impacts. Furthermore, under the baseline scenario, initiatives that focus on addressing socio-economic and environmental problems will therefore continue to derive no benefit from urban EbA as a cost-effective approach to achieving development objectives under conditions of climate change.

### *Component 3: Disseminating knowledge and raising public awareness on urban EbA in pilot cities*

There are a number of regional knowledge-sharing networks, climate change programmes and initiatives currently underway in the Asia-Pacific region – such as the Asia-Pacific Adaptation Network (APAN), ACCCRN and Climate Technology Centre and Network (CTCN) (see Section 2.7 of the Project Document for further details) – which are increasing the awareness of national governments to the effects of climate change. This knowledge, however, is often not effectively communicated to local governments and is often not focussed on climate change adaptation. Local government entities, city management authorities and other stakeholders in Bhutan, Cambodia, Lao PDR and Myanmar therefore have limited knowledge of the potential benefits of EbA in general, and almost no knowledge of urban EbA. As a result, urban EbA is not actively promoted as a cost-effective and low-risk approach to adaptation. In addition, where urban EbA information is available, there are few opportunities for sharing this information and lessons learned from urban EbA initiatives. Under the business-as-usual scenario, information on the impacts of climate change, appropriate adaptation options – particularly the use of urban EbA approaches – and the potential benefits associated with adaptation interventions, will continue to be limited<sup>11</sup>. In the absence of technical knowledge and an evidence base on the benefits of urban EbA, adaptation interventions supported by various initiatives will continue to exclude the adoption of urban EbA approaches to climate change.

### **Baseline projects**

The LDCF-financed project will build on several projects that are currently being implemented in Bhutan, Cambodia, Lao PDR and Myanmar to address problems related to social and economic development in cities. In particular, these problems include: i) limited availability and quality of water for domestic use and urban agriculture; ii) inadequate infrastructure for household sanitation; and iii) vulnerability of urban communities to floods. A brief description of these projects is provided below. Please refer to Section 2.6 in the Project Document for more information.

#### *Bhutan*

A **low income housing project** (2016–2020) is being implemented by Thimphu City’s Building and Human Settlement Division (TCBHSD). The objective of the TCBHSD project is to resettle inhabitants of informal settlements into permanent housing. Currently, ~260 households – with a population of ~1,070 people – reside in Thimphu’s informal settlements. The city has planned to resettle 233 households over 5 years at an expense of ~US\$3,395,000. Due to budgetary constraints, the TCBHSD project will be implemented in phases. The first phase of this settlement is expected to cost ~US\$1,057,000 – sought as co-financing for the LDCF project – and will be used for site selection, planning, construction of housing units and basic facilities, including sanitation infrastructure and access roads. The TCBHSD project is expected to improve livelihoods, health and the social status of people currently residing in informal settlements. However, the TCBHSD project makes limited consideration of climate change in the design and location of this new infrastructure. The LDCF project will build on the TCBHSD resettlement project by strengthening institutional and technical capacity to plan and implement urban EbA (Component 1). Training and workshops will be undertaken, which will facilitate the integration of urban EbA into urban development planning. In addition, the LDCF project will increase the climate resilience of the formal settlements through implementing urban EbA interventions (Component 2) to climate-proof the development. These interventions in resettlement areas will include promoting green areas with NTFP

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<sup>11</sup> Stakeholders to be affected by the limited availability of information of urban EbA will include *inter alia* local government entities, city management authorities and the general public.

trees, energy efficient technologies for buildings (using examples and guidelines from the UNEP sustainable social housing initiative (SUSHI)) such as green insulation technologies, rain-water harvesting technologies, and urban agriculture in the form of vegetable gardens. Furthermore, the dissemination of information and best practices generated through the LDCF project (under Component 3) will inform other projects in cities across Bhutan.

The **Urban Agriculture Project (UAP)** will be implemented by the Environment Division of Thimphu Thromde. The UAP focuses on promoting food security for the urban poor through introducing urban agriculture and vegetable production on 10 acres of land in Hejo/Taba, Samteling and Dechencholing, as well as resettled areas over the next four years. However, the expected effects of climate change are not accounted for in the UAP's agricultural activities. The LDCF project is expected to increase the resilience of the community and the environment to the effects of climate change through the implementation of on-the-ground EbA activities to diversify urban food sources and livelihoods (Component 2), including the propagation of climate-resilient, multi-use plants and trees, and promoting climate-resilient technologies in livestock production. In addition, the LDCF project will enhance the adaptive capacity of the urban poor through the development and implementation of a public awareness-raising programme on the benefits of EbA (Component 3). The amount available for co-financing is US\$400,000.

The **River Bank and Riparian Zone Management Project (RBRZMP)** is also financed by the Thimphu Thromde. The objective of the RBRZMP is to reduce flood risks in the low-lying areas along a 1.5km stretch of the Thimphu River. The RBRZMP's interventions largely focus on the construction of concrete walls along river banks and the management of flood plains. The LDCF project will build on the RBRZMP by implementing urban EbA interventions (under Component 2) to climate-proof the river bank and enhance riparian zone management. Activities may include planting climate- or flood-resilient tree species along the flood plains to stabilise soils and act as natural buffer for flooding, rather than implementing hard infrastructure. The LDCF's activities will therefore not only improve vegetation cover, biodiversity and aesthetics, but will also improve water retention and regulation along the flood plains. The total amount available as baseline co-financing is US\$42,900.

### *Cambodia*

There are several projects currently being implemented in accordance with Kep's three year revolving investment plan (2016–2018).

Under the investment plan, the Department of Public Work and Transport is responsible for implementing the following projects: i) **Expansion of 33a national road from White Horse to Preah Noreay** (\$6,514,000) – construction of 7.8 km AC with 6 lanes and a walkway; ii) **Expansion of 33a national road from Preah Eyso to Phsarkdam and Kep Beach** (US\$2,072,750) – construction of 1 km AC with a walkway, gardens and parking lots; iii) **Urban Road Improvement** (US\$4,650,000) – to improve the city road and sewage system for 9.9 km; iv) **Road 33a improvement along the coast** (US\$3,375,000) – construction of 5.7 km AC with a walkway, gardens and parking lots; and v) **Construction of waste water treatment in Kep Beach and Chroy Doung** (US\$300,000) – to treat waste water from all sources in the urban area/Kep City and improve the beauty of the central city. The LDCF project will support the Department of Public Works and Transport's initiatives through the implementation of EbA interventions (under Component 2), including tree planting along the roads or mangrove restoration to reduce erosion and protect the hard infrastructure from storms. These measures will also benefit local communities by improving livelihoods.

The Department of Water Resources and Meteorology is responsible for the **Repair and maintenance of Oukrasa reservoir** (US\$66,375) – to increase the availability of water for household and agricultural consumption in Sangkat Oukrasa. And the Department of Tourism, with the support of the Asian Development Bank is responsible for the **Construction of a Waste Water Treatment Plant in Phsar Kdam** (US\$100,000) which will prevent the discharge of pollution and enhance ecosystem goods and services. The LDCF project will support the above projects through the implementation of EbA interventions (under Component 2), including wetland restoration which will buffer local communities from flooding and improve the supply and quality of water. Adaptation projects have proven cost-effective and successful in restoring wetlands. Such activities reduce the costs of maintenance for hard infrastructure, as well as provide several adaptation benefits, including a reduced risk of flooding for urban communities.

The LDCF project will build on the above initiatives. A budget of US\$1,000,000 is provided as baseline co-financing by the Provincial Hall of Kep.

### *Lao PDR*

The Provincial Natural Resource and Environment Department is responsible for implementing initiatives for **improving the well water supply system and managing watershed protected zones** in Phongsaly Province (US\$2,200,00 – will be counted as baseline co-financing for the LDCF project) with the objective of improving urban water supply to 1,500 m<sup>3</sup> per day by 2025. This project will include the construction of an 800 m<sup>3</sup> reservoir and associated facilities that will benefit ~8900 people. The LDCF project will support this project through the implementation of EbA interventions (under Component 2) to climate-proof infrastructure from extreme weather events, such as storm surges and flooding. The restoration of watersheds through the planting of climate-resilient species will buffer local communities and hard infrastructure from flooding, as well as increase the quality and availability of water. In addition, capacity-building (under Component 1 of the LDCF project) will ensure that climate change is considered and an EbA approach is adopted in the design and planning of such infrastructure.

The **PhuHePhi Protection Forest Management Project** in Oudomxay Province (US\$74,000 – sought as baseline co-financing for the LDCF project), is being implemented by the Provincial Natural Resource and Environment Department – in collaboration with South Korea. The objective of the project is to conserve biodiversity and promote ecotourism through the development of a legal framework for approval of the area as a National Biodiversity Conservation Area. By designating this area as a National Biodiversity Conservation Area, they will benefit ~265,000 people. The project will also focus on the protection of water resources in Oudomxay Province for domestic, agricultural, economic and environmental purposes.. The protection of water resources upstream will have a positive effect on the water supply and availability within the urban areas downstream, thereby ensuring the sustainability of the alternative livelihoods to be demonstrated by the LDCF project. The LDCF project will support the initiative through capacity building (under Component 1) to ensure that climate change adaptation is integrated into medium- and long-term planning and development, as well as management frameworks. In addition, the adoption of an EbA approach and the implementation of watershed restoration measures (under Component 2) will support the development of alternative livelihoods through ecotourism as well as generating benefits through enhanced ecosystem services. During the implementation period of the LDCF project, the potential benefits of ecosystem restoration will be identified through vulnerability mapping, which will include socio-economic research focusing on vulnerable groups, as well as climate modelling. Lessons learned through the implementation of the National Guidelines on Ecosystem-based Adaptation and best practices from the baseline forestry project will be shared through the incorporation of the Project Manager in the LDCF project's Technical Committee. This will strengthen the sustainability and promote the replication and upscaling opportunities of the LDCF as well as the baseline forestry projects.

### *Myanmar*

The **Mandalay Urban Services Improvement Project** (US\$78,970,000 – sought as baseline co-financing for the LDCF project) will be implemented by the Mandalay City Development Committee for two years from mid-2016 to mid-2018. The objective of this project is to improve the management of wastewater in the urban areas of Mandalay. The two main interventions on which the LDCF project will build on are: i) the implementation of central wastewater pipelines to treat wastewater from 93 factories in the southern part of Mandalay City; and ii) the upgrading of the sewage management system for domestic wastewater in Thimgazar Creek. These interventions are funded by the Asian Development Agency and Hydrotek Supreme Co. Ltd. Upon completion of these plants, treated water will be released into the Dothawadi River. The LDCF project will support the above initiative through implementing urban EbA interventions under Component 2 to climate-proof the wastewater treatment plant and sewage management system and restore the wetlands and flood plain of the Dothawadi River. Flood-resilient tree species will be planted in the surrounding areas to promote water retention and regulation, and reduce sedimentation. This will also improve the aesthetics of the area, the biodiversity and vegetation cover, as well as the quality of water discharged into the Dothawadi River.

## *Regional projects providing co-financing*

Rapid urbanisation has led to an increase in poverty and limited access to basic services in many cities in the Asia Pacific region. Ensuring food and water security, managing disaster risks, protecting infrastructure, and improving the livelihoods of the urban poor are major challenges for decision-makers and planners in the Asia-Pacific. To address these challenges, UN-Habitat is implementing initiatives with a variety of stakeholders across the region, including Cambodia, Lao PDR and Myanmar. The LDCF project will build on the initiatives that are being implemented by UN-Habitat to improve access of vulnerable, urban communities in the Asia Pacific to resources – including water – and livelihoods. These initiatives are described below. Additionally, as part of this co-financing agreement, UN-Habitat will assist ROAP in the execution of Output 1.2 on training and Output 1.3 on decision-making tools.

**Community-based small-scale climate resilient rural water infrastructure project in Attapeu, Sekong and Saravanve in Lao PDR** is being implemented by UN-Habitat with financing from the International Fund for Agricultural Development (IFAD) and co-financing from the Government of the Lao PDR. The objective of the project is to improve agricultural productivity in three southern provinces of Lao PDR under conditions of climate change. Although this UN-Habitat/IFAD project is being implemented in a different geographical region in Lao PDR, the LDCF project will build on activities to develop “Build Back Better” (BBB) principles related to climate resilient infrastructure. Additionally, knowledge on EbA – as a cost-effective and sustainable means to support water-related objectives under conditions of climate change – that will be generated through the LDCF project will be made available to be integrated into BBB principles and training material. A total of US\$253,686 will be used as co-financing. This includes budgets allocated to outputs of the UN-Habitat/IFAD project to provide technical assistance and guidance towards BBB principles related to Small-scale water infrastructure in selected villages.

**Enhancing water governance through improved decision-making and performance management** is funded through the Governance, Advocacy and Leadership for Water, Sanitation and Hygiene (GoAL WaSH). The objective of GoAL WaSH – which is a joint UN-Habitat and UNDP programme – is to improve decision-making and performance management in the water sector through building capacity and management systems at national, provincial and district levels in Lao PDR and the Mekong Region. In particular, the project focusses on improving the flow of information between national, provincial and district levels, as well as improve understanding of the impacts of water supply on communities. The LDCF project aims to improve decision-making in the water sector under conditions of climate change. In particular, training under Outcome 1 will strengthen the capacity of city management authorities in Lao PDR to plan and implement urban EbA to improve water access and quality. Dissemination of knowledge on the benefits of EbA (Outcome 3) will also support the objective of GoAL WaSH to improve decision-making in the water sector. A total of US\$ 259,686 will be used as co-financing. This includes budgets allocated to outputs of the UN-Habitat/UNDP project to improve water governance.

The ongoing **Enhancing capacity for pro-poor WASH governance at provincial, district and commune levels in Cambodia** is a joint programme between UN-HABITAT and UNDP. The objective of the project is to generate a framework to overcome the ineffectiveness in the WASH sectors – water, sanitation and hygiene – at sub-national levels. This objective will be achieved by enhancing coordination and improving decision-making through the development of a governance guide and related capacity building activities. The initiative has undertaken a capacity building and needs assessment on which the LDCF project will build when assessing the planning processes in Cambodia (Outcome 1) to inform the design of decision-making tools for urban EbA. Similarly to the project in Lao PDR, dissemination of knowledge on the benefits of EbA (Outcome 3) will support the objective of the GoAL WaSH project in Cambodia to improve water management under conditions of climate change. The WASH guide that has been developed through the UN-Habitat/UNDP project will be reviewed with a view to integrating EbA as a cost-effective means to improve water access and quality under conditions of climate change. A total of US\$ 200,500 will be used as co-financing. This includes budgets allocated to outputs of the UN-Habitat/UNDP project to: i) assess the gaps and needs for institutional strengthening of sub-national levels in WASH sector; ii) produce national WASH Guide for provincial, district and commune levels; and iii) pilot the WASH guide at provincial, district and commune levels.

The LDCF project will build on two initiatives that UN-Habitat is implementing in Myanmar (described below). The overarching aim of these initiatives is to improve planning in urban areas.

- **100 Resilient Cities** is a project funded by the Rockefeller Philanthropy Advisors, Inc. which supports the development of an overall resilience strategy for the City of Mandalay. Through Outcome 2 of the LDCF project, EbA will be demonstrated in Mandalay as a cost-effective and sustainable approach to adaptation in urban environments. Additionally, the LDCF project's activities will strengthen the capacity of city management authorities in Mandalay to plan and implement this novel approach to increase resilience of the city. The climate change vulnerability map that will be developed for Mandalay (Outcome 2) will be made available to UN-Habitat to inform resilience planning. The total budget for the 100 Resilient Cities project (US\$ 200,000) will be used as co-financing for the LDCF project.
- **Capacity Development Technical Assistance (TA 7456- MYA): Transformation of Urban Management** is a project initiated by the Asian Development Bank (ADB) and implemented by UN-Habitat, which promotes sustainable urban development in Myanmar. The main objective of this project is being achieved by building the institutional capacity of local authorities to prioritise provision of essential infrastructure. The LDCF project will climate proof the TA 7456 MYA project by integrating EbA into these capacity-building activities. In particular, city management authorities will be trained on the impacts of climate change in urban areas and appropriate EbA interventions to manage these impacts (Outcome 1). Policy briefs on cost-effective adaptation practices, including urban EbA will also be disseminated to these stakeholders (Outcome 1). Knowledge on urban EbA – that will be collated, generated and disseminated through Outcome 3 of the LDCF project – will be disseminated to urban planners, thereby supporting sustainable development of cities in Mandalay. A total of US\$ 982,545 will be used as parallel co-financing. This includes budget allocated to outputs of the TA 7456 MYA project to increase capacity, such as consulting fees, workshops and training.

A total of US\$1,896,417 will be used as co-financing for the LDCF project from UN-Habitat from the initiatives described above.

The **Poverty-Environment Initiative (PEI)** is a joint programme between UNDP and UNEP which integrates pro-poor environmental sustainability and climate change issues into development planning, budgeting and investment management processes. In doing so, PEI supports Ministries of Finance, Planning and Local Governments to direct public and private investments to achieve greener and more inclusive economies. The regional PEI Asia-Pacific Strategy for 2013–2017 promotes: i) the application of poverty-environment approaches and tools for integrated development policies, plans and coordination mechanisms; ii) the institutionalisation of cross-sectoral budget, expenditure frameworks, coordination mechanisms and environment-economic accounting systems; and iii) the documentation of poverty-environment approaches and sharing of experiences to inform country, regional and global development programmes. The LDCF project will build on the PEI by: i) incorporating CCA – and EbA in particular – into sustainable urban development under Outcome 1; ii) building the technical and institutional capacity of government authorities to implement adaptation activities that are resilient<sup>12</sup> to climate change under Outcome 1; and iii) sharing knowledge of climate change and EbA through public awareness campaigns and various platforms under Outcome 3. A total of US\$2,500,000 will be used as parallel co-financing for the LDCF project (for 2016–2017).

### **3) The proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project**

The vulnerability of urban communities to the current and predicted effects of climate change in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay will continue to increase in the future. To reduce this vulnerability, the LDCF-financed project will promote the use of an urban EbA approach to adaptation by targeting stakeholders, such as government departments and local communities in these cities. This will be achieved by implementing activities that will build on and climate-proof the baseline projects described in Section A.2. National and local stakeholders will be trained on implementing EbA as a cost-effective and sustainable means to adapt to climate change. By demonstrating the EbA approach in the pilot cities of Thimphu, Kep, Phongsaly, Oudomxay and Mandalay, the functioning of urban and peri-

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<sup>12</sup> This encompasses the more wider definition of resilience in urban areas identified under the Zero Draft of the New Urban Agenda (to be presented at Habitat 3) by the Policy Unit 8 (Urban Ecology and Resilience) is 'low-carbon, resource efficient and resilient'.

urban ecosystems that underpin the well-being of communities living in these cities will be enhanced under conditions of climate change. It is envisaged that successful demonstrations of the EbA approach in the four pilot cities will promote the replication of EbA interventions in other cities within the Asia-Pacific region. The upscaling of urban EbA across Bhutan, Cambodia, Lao PDR and Myanmar will be further promoted by proposing revisions to policies and plans for climate-vulnerable sectors, such as ecosystem management, urban planning and water management. In addition, awareness of EbA and access to scientific research on EbA will be improved. The proposed alternative scenario – including the expected outcomes, outputs and activities of the LDCF-financed project – is described below.

### **Component 1: Institutional strengthening and capacity building of city management authorities in pilot cities to plan and implement urban EbA.**

*Outcome 1: Institutional strengthening and capacity building of city management authorities in pilot cities to plan and implement urban EbA.*

Activities under Outcome 1 will create an enabling environment for the integration of EbA into medium-and long-term planning for urban development in Bhutan, Cambodia, Lao PDR and Myanmar. This will also allow the integration of urban EbA into the broader NAP process in each country. The technical and institutional capacity of city management authorities in the focal countries to plan and implement urban EbA will be strengthened. This will require information on adaptation techniques – implemented in the Asia-Pacific region – to be collated and cost-benefit analyses undertaken. The results of the analysis will be shared with government and other stakeholders involved in adaptation and development planning through workshops in the focal countries. At these workshops, policy briefs on the cost-effective adaptation techniques identified in an urban context will be disseminated to stakeholders. In addition, city management authorities will receive training on urban EbA. Targeted stakeholders in each country will include: i) Thromde management authorities in Bhutan – including focal persons from NEC, GNHC, DoA, DoS and MoWHS; ii) representatives from MoE, NCS, MPWT, NCDM, MLMUPC and Kep Provincial Hall in Cambodia; iii) Mandalay City Development Committee, Myanmar Climate Change Alliance and its technical working group, which includes representatives from MNREC, MALI and MOI in Myanmar;; and iv) representatives from MoNRE, MoAF, Ministry of Public Work and Transportation, Ministry of Planning and Investment in Lao PDR. Training topics will include: i) the effects of climate change on urban communities; ii) the benefits of EbA for adapting to the effects of climate change; and iii) planning, implementing, monitoring and maintaining EbA to manage the effects of climate change in urban areas. Initially, training materials will be developed using the information available, including the information to be collated under Output 1.1. To assist with tailoring information to stakeholders’ needs, assessments will be undertaken to understand the decision-making processes in each country. Based upon these assessments, decision-making tools will be developed in conjunction with decision-makers and planners from Bhutan, Cambodia, Lao PDR and Myanmar, as well as authorities from the pilot cities and academics from local universities. The decision-making tools will promote the integration of urban EbA into development planning.

#### *Output 1.1: Policy briefs developed on cost-effective adaptation to climate change in an urban context.*

Activities to be implemented under Output 1.1 include:

- 1.1.1 Undertake a stock-take on adaptation techniques that have been implemented in urban areas in the Asia-Pacific region.
- 1.1.2 Undertake cost-benefit analyses of adaptation techniques that have been implanted in urban areas in the Asia-Pacific region.
- 1.1.3 Hold a regional event with government stakeholders and practitioners involved in adaptation in urban areas to present the findings of the cost-benefit analyses and gather information on lessons learned through implementation of adaptation techniques in urban areas.
- 1.1.4 Develop a policy brief on the effectiveness of adaptation interventions in urban areas based on the cost-benefit analyses and information from relevant stakeholders.

#### *Output 1.2: Training on climate change impacts and appropriate urban EbA interventions provided to city management authorities in Bhutan, Cambodia, Lao PDR and Myanmar (including from pilot cities).*

Activities to be implemented under Output 1.2 include:

- 1.2.1 Develop/adapt training material on: i) undertaking vulnerability assessments; and ii) planning, implementing, monitoring and maintaining best practice EbA intervention-based studies developed in Output 1.1.1 and Output 2.1.1.
- 1.2.2 Train city management authorities in targeted countries – including those from pilot cities – to plan and implement urban EbA interventions using the material developed in Activity 1.2.1.

*Output 1.3: Decision-making tools to integrate urban EbA into development planning and the NAP process designed and presented to city authorities in Bhutan, Cambodia, Lao PDR and Myanmar.*

Activities to be implemented under Output 1.3 include:

- 1.3.1 Assess the decision-making processes in each targeted country with regards to urban planning.
- 1.3.2 Produce decision making tools for integrating EbA into urban development planning based on the particular decision-making process in each country as well as the NAP process and frameworks for collaboration between institutions. These tools should be designed with city authorities, decision-makers, planners and academics from local universities. Importantly, the tools should take into account medium to long term adaptation planning and contribute to bridging the divide between climate sciences/adaptation planning and urban development.
- 1.3.3 Train city authorities on using this tool for integrating EbA into development planning.

## **Component 2: Demonstrating urban EbA interventions in pilot cities.**

*Outcome 2: EbA demonstrated in pilot cities to reduce the vulnerability of poor, urban communities.*

Within Outcome 2, urban EbA interventions to strengthen the capacity of urban communities to adapt to the effects of climate change will be implemented to demonstrate the benefits of these interventions to urban communities in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay (see Section 2.1 and 2.3 of the Project Document). The proposed interventions include *inter alia*: i) reforestation of watershed areas and riparian forests using locally adapted plant species; ii) adoption of climate-resilient agricultural practices; iii) rehabilitation of degraded wetlands; iv) implementation of rainwater harvesting systems; and v) the establishment of urban gardens. Restoration activities will prioritise the selection of a diverse range of locally adapted species that are resilient to the current and predicted future climate variability of the respective interventions sites. The EbA interventions related to the restoration of watersheds and urban areas will cumulatively increase the availability and quality of freshwater, thereby increasing the resilience of all pilot cities to the predicted variability of rainfall under future climate change conditions. Furthermore, the project's interventions will reduce the incidence and severity of hazards caused or exacerbated by intense rainfall events – particularly soil erosion, landslides and floods. The increased infiltration of rainwater – that results from restored watersheds – will reduce the volume of rainfall runoff that contributes to severe flooding. Interventions that have been selected during the PPG phase will be validated with city management authorities and the targeted urban communities at project inception. Thereafter, technical guidelines on planning, implementing and maintaining the urban EbA interventions will be developed and used to train targeted communities that will be responsible for implementing the on-the-ground interventions. These guidelines will include recommendations for native or endemic tree and crop species that are climate-resilient<sup>13</sup> and which have the potential to enhance climate change adaptation and provide socio-economic benefits. Reforestation in degraded urban watersheds will involve the planting of the selected native or endemic climate-resilient tree species. At the urban landscape scale, climate-resilient trees will be planted in riparian zones, along sidewalks and along roads in green spaces. By increasing the vegetative cover within the pilot cities, urban and peri-urban reforestation will: i) provide shade as protection against the predicted increase in mean annual temperature; ii) facilitate increased infiltration of rainwater into aquifers; and iii) reduce surface runoff and erosion. In addressing both social and environmental aspects, the project's EbA interventions will generate multiple climate change adaptation benefits for vulnerable urban communities.

Through Outcome 3, the project's interventions will also contribute towards the scientific evidence base that underpins investments in upscaling and replicating EbA in other urban areas. To support upscaling, climate change vulnerability maps will be developed for selected cities across Bhutan, Cambodia, Lao PDR and Myanmar. Existing vulnerability maps

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<sup>13</sup> For example, flood and drought tolerant.

that have been developed for cities such as Oudomxay and Pakse in Lao PDR will also be updated. These vulnerability maps will be developed using updated information that will be generated through the LDCF project, in particular: i) climate models (using an integrated approach including the consideration of Shared Socio Economic Pathways<sup>14</sup>; ii) socio-economic research (with a focus on vulnerable groups, such as women, elderly and youth); and iii) research on urban ecosystems in selected cities (with a focus on services provided by these ecosystems). In addition, reports on adaptation needs will be developed using the results of the vulnerability mapping exercise, with a focus on the potential for urban ecosystem to contribute towards meeting these needs.

To increase the capacity of vulnerable, targeted communities further, livelihood plans will be developed and implemented. These plans will be based on the benefits that will be experienced by these communities from productive urban ecosystems that will be targeted through the LDCF project. Initially, assessments will be undertaken to identify the current and potential livelihoods derived from urban ecosystems. Through these assessments, reports will be developed on: i) barriers to developing and growing livelihoods from urban ecosystems; ii) methods to overcome these barriers; and iii) value chain and market analyses of livelihoods from urban ecosystems. Thereafter, plans will be developed to improve livelihoods based on these assessments. These plans will include a description of the training and equipment needs to improve livelihoods from urban ecosystems in the long term. The implementation of livelihood improvement plans will be supported through the provision of training and equipment through the LDCF project. Importantly, this should include training to develop financial planning skills within urban communities and may include topics such as *inter alia* micro-enterprise development using EbA products, value chains, marketing, record-keeping, accounting and cash-flow analysis. To promote sustainability and opportunities for supporting livelihoods through the goods and services provided by urban ecosystems, workshops will be held to link urban communities with potential private sector partners. For example, hotel owners or managers could be linked with communities that will be producing vegetables or fruits through climate-resilient, urban farming practices.

To assess the long-term societal, economic and ecological benefits of urban EbA in pilot cities, research programmes will be developed and established in collaboration with academics. These programmes will promote long-term research on the impacts of urban EbA interventions that will be implemented in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay. Memoranda of Understanding will be signed by all organisations involved – including Bhutan’s National Environment Commission, College of Science and Technology of Bhutan, Royal University of Bhutan, Institute of Technology of Cambodia, University of Cambodia, Science, Technology and Environment Agency of Lao PDR, University of Lao PDR, University of Mandalay and Mandalay Technical University – in the programmes to undertake medium- and long-term research. These MoUs will include details on the roles of stakeholders involved in the programme to: i) collect, process, analyse and manage long-term data; and ii) share the findings of this research with government and the general public. To initiate the long-term research, funding will be made available through local institutions – for example universities or government ministries – to develop hypotheses and collect baseline data for the long-term research. The hypotheses and baseline data will be shared through publications and other academic platforms. The generation of long-term data and information on the effects of the project interventions will contribute to the development of a scientific evidence base to support future investments in EbA and other innovative approaches to climate change adaptation in urban areas. The long-term research programme that will be established will be different from the monitoring framework that will be developed and implemented during the lifespan of the project.

#### Output 2.1: Vulnerability maps and adaptation reports developed for pilot cities.

Activities to be implemented under Output 2.1 include:

- 2.1.1 Develop updated climate models to inform vulnerability mapping of selected cities<sup>15</sup>.
- 2.1.2 Undertake socio-economic research in selected cities, with a focus on vulnerable groups such as women, the elderly and youth.
- 2.1.3 Undertake ecosystem assessments in selected cities, with a focus on services provided by the urban ecosystems.

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<sup>14</sup> <http://www2.cgd.ucar.edu/research/iconics>

<sup>15</sup> In Bhutan this includes identifying and mapping wetland and riparian zones in Thimphu with assessment of anthropogenic and climate related threats

2.1.4 Develop short- to medium-term vulnerability maps for selected cities using the updated climate models, socio-economic research and ecosystem assessments.

2.1.5 Develop a report on adaptation needs for each city and the potential for services from urban ecosystems to contribute to meeting these needs.

Output 2.2: 2 City-specific urban EbA interventions appropriate to the social, cultural and environmental contexts – including urban reforestation, urban agriculture and wetland restoration – demonstrated in pilot cities.

Activities to be implemented under Output 2.2 include:

2.2.1 Validate the EbA interventions and targeted communities selected during PPG phase using the vulnerability maps and reports developed in Output 2.1.

2.2.2 Develop technical guidelines on planning, implementing, monitoring and maintaining the validated EbA interventions.

2.2.3 Train local communities and support government staff on applying the technical guidelines to implement the urban EbA interventions.

2.2.4 Implement urban EbA interventions – including ecosystem restoration, climate-resilient agriculture and agroforestry technologies – using technical guidelines.

Output 2.3: Livelihood improvement plans based on urban ecosystems developed and implemented with poor urban communities.

Activities to be implemented under Output 2.3 include:

2.3.1 Develop reports on livelihoods from urban ecosystems in targeted urban communities. These reports should describe: i) barriers to developing and growing livelihoods from urban ecosystems; ii) methods to overcome these barriers; and iii) value chain and market analyses of livelihoods from urban ecosystems.

2.3.2 Develop plans to improve livelihoods of vulnerable, urban communities based on the reports on livelihoods. These plans should include a description of business and technical training needs, and equipment required to improve livelihoods.

2.3.3 Implement livelihood improvement plans by providing training and equipment. Importantly, this should include training to develop financial planning skills of urban communities for establishing and sustaining livelihoods from EbA interventions. This will include training on inter alia business roles, structures, value chains, marketing, record-keeping, accounting, cash flow analysis, and forward planning.

2.3.4 Hold a workshop to link potential private sector partners with urban communities that are implementing livelihood improvement plans in each pilot city through ongoing communication and meetings.

Output 2.4: Long-term research programmes established in local scientific institutions to assess the long-term societal, economic and ecological benefits of urban EbA in pilot cities.

Activities to be implemented under Output 2.4 include:

2.4.1 Develop a programme with research institutions and/or universities in the four countries to assess the societal, economic and ecological benefits of urban EbA in pilot cities in the long term.

2.4.2 Select and fund studies through local institutions to develop hypotheses for long-term research and to collect baseline data at sites in which urban EbA will be implemented under Outcome 2. Students conducting this research should be selected from a variety of disciplines including inter alia urban planning, agriculture, fisheries and forestry.

2.4.3 Share hypotheses and findings from research that is funded during the project lifespan academic platforms.

2.4.4 Develop at least one Memorandum of Understanding (MoUs) per country including all organisations involved in the research programme to conduct medium- and long-term research including details on the roles of stakeholders involved in the framework to: i) collect, process, analyse and manage long-term data; and ii) share the findings of this research with government and the general public.

**Component 3: Disseminating knowledge and raising public awareness on urban EbA in pilot cities.**

*Outcome 3: Knowledge base for supporting the design of urban EbA interventions strengthened, and public awareness of the positive potential of urban EbA interventions to reduce vulnerability to climate change impacts increased.*

Within Outcome 3, knowledge on urban EbA will be generated, managed and disseminated in Bhutan, Cambodia, Lao PDR and Myanmar – as well as the wider Asia-Pacific region. Knowledge will be generated by implementing the ongoing monitoring framework that will be developed and developing reports on the findings from these monitoring activities. The performance of the urban EbA interventions will be measured through the development and implementation of monitoring framework within local communities. This framework will provide guidelines for ongoing monitoring of EbA interventions during the implementation period through participatory processes with local communities. The objective of the monitoring framework will be to measure the performance of the project interventions during the four-year implementation period. This will differ from the programme that will be established under Outcome 2 – which will be implemented with the objective to measure the long-term societal, economic and ecological benefits of urban EbA interventions. The results from the monitoring activities will be collated into city-specific reports. Information from these reports and the knowledge developed through the LDCF project will be managed and disseminated through: i) awareness-raising campaigns; and ii) local, national and regional information-sharing platforms (see Section 2.7). Public awareness will be increased and information will be disseminated on lessons learned from the interventions demonstrated under Outcome 2. Through these national awareness programmes, information on planning and implementing EbA will be shared with vulnerable communities living in urban areas throughout Bhutan, Cambodia, Lao PDR and Myanmar. The dissemination of knowledge will facilitate the upscaling of urban EbA approaches throughout the Asia-Pacific region. Upscaling strategies for urban EbA interventions will also be developed and presented to policy- and decision-makers. Furthermore, local, national and regional platforms that share information on city planning and climate change adaptation will be reviewed and relevant platforms updated to share knowledge on integrating urban EbA into city planning and management processes. This knowledge will include *inter alia* lessons learned through the LDCF project, results from the monitoring framework, vulnerability maps, policy briefs, technical guidelines, decision-making tools and information from the upscaling strategy. Thereafter, national workshops will be held to connect all stakeholders involved in the planning and management of urban ecosystems, including representatives from governments, NGOs and aligned projects. The updated platforms will be introduced to planners and practitioners at these workshops, and an overview of the knowledge tools – managed and shared through these platforms – will be presented. Stakeholders involved in the workshops will also discuss entry points for EbA in city planning. The uptake of these knowledge tools will be monitored under this output, and support services provided to promote this uptake. These support services will include ongoing communication with the decision-makers and planners using the tools and platforms and making minor adjustments to these tools and platforms if necessary.

*Output 3.1: Performance of urban EbA interventions in pilot cities monitored and assessed.*

Activities to be implemented under Output 3.1 include:

3.1.1 Develop a monitoring framework to measure the performance of EbA interventions. This framework will include a description of the: i) responsibilities of different stakeholders that will be involved in monitoring the interventions; ii) indicators and targets to measure the performance of urban EbA interventions; iii) equipment needs; and iv) frequency of data collection.

3.1.2 Execute the monitoring framework to assess the performance of EbA interventions.

3.1.3 Develop detailed reports on the performance of urban EbA interventions in pilot cities.

3.1.4 Present and disseminate the reports developed under Activity 3.1.3 to relevant government, NGOs and other decision-makers and practitioners during regional and national workshops.

*Output 3.2: National public awareness programmes implemented on climate change effects in urban areas and appropriate EbA interventions to manage these effects, including lessons learned from interventions implemented in pilot cities.*

Activities to be implemented under Output 3.2 include:

3.2.1 Collate and assess information on: i) the effects of climate change in urban areas in Bhutan, Cambodia, Lao PDR and Myanmar; ii) best-practice EbA to manage these effects of climate change (including information generated through Component 1, lessons learned through implementing the LDCF project and findings from Output 3.1).

3.2.2 Develop and implement awareness-raising programmes and tools based on the information collected in Activity 3.2.1 – using several communication channels such as radio, television, pamphlets, and awareness-raising boards and events – to share information on the effects of climate change in urban areas and best-practice options for EbA with the general public.

*Output 3.3: Relevant local, national and regional platforms updated to share knowledge on integrating urban EbA into city planning and management processes to facilitate the upscaling of urban EbA approaches throughout the region.*

Activities to be implemented under Output 3.3 include:

3.3.1 Hold a regional workshop for stakeholders involved in the regional project and others involved in urban planning/management in Bhutan, Cambodia, Lao PDR and Myanmar. At this workshop, the following topics should be discussed: i) overview of the regional project, highlighting successes and challenges; ii) similarities between countries in city planning processes; iii) potential entry points for EbA in these city planning processes (taking into account lessons learned from regional project).

3.3.2 Update relevant local, national and regional platforms to share knowledge on integrating urban EbA into city planning and management processes including inter alia lessons learned through the LDCF project, generate a menu of Urban EbA interventions that can be shared regionally, methodologies for producing vulnerability assessments and decision-making tools developed under Outcome 1

3.3.3 Link all city planning and management authorities in the Bhutan, Cambodia, Lao PDR and Myanmar to the local and national platforms through effective and ongoing communication with these stakeholders.

3.3.4 Link all city planning and management authorities in the Asia-Pacific region to regional (and global) platforms (such as Asia Pacific Adaptation Network and the EbA south platform) <sup>16</sup>through effective and ongoing communication with relevant ministries in each country.

*Output 3.4: National upscaling strategies developed and presented to policy- and decision-makers to promote urban EbA approaches.*

Activities to be implemented under Output 3.4 include:

3.4.1 Develop national upscaling strategies – one strategy for each pilot country – for urban EbA based on knowledge generated and collated through the project including lessons learned. These upscaling strategies will include sections on: i) information on the benefits and cost-effectiveness of EbA relative to other approaches for adapting to climate change in urban areas; ii) information on the need for multi-sectoral research to inform EbA; iii) recommended approaches and long-term training to coordinate upscaling and implementation of EbA across urban sectors; iv) the roles and responsibilities of stakeholders in each country related to the upscaling of urban EbA approaches; and v) recommendations for sustainable financing mechanisms to support the upscaling of urban EbA in each country.

3.4.2 Present the upscaling strategy to relevant policy- and decision-makers in the pilot countries.

#### **4) Additional cost reasoning**

Urban ecosystems provide a range of services such as: i) the provision of natural resources such as food and water; and ii) regulatory functions such as flood mitigation, water filtration and waste decomposition). Currently, these ecosystems are being degraded by unplanned urban expansion in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay. The effects of such ecosystem degradation include: i) reduced water infiltration and increased flooding; ii) increased soil erosion; and iii) decreased water quality as a result of increasing pollution in rivers and other water ways. The negative effects of climate change – including an increased frequency and intensity of floods and droughts – will exacerbate ecosystem

<sup>16</sup> EbA south is a knowledge platform developed under a global GEF project entitled “Enhancing Capacity, Knowledge and Technology Support to Build Climate Resilience of Vulnerable Developing Countries”. The platform aims to share knowledge on best practices in EbA and to create an online community of EbA experts and stakeholders “in the South and for the South” [www.ebasouth.org](http://www.ebasouth.org).

degradation and reduce the provision of ecosystem services to vulnerable communities. Without the LDCF project, urban communities in the Asia-Pacific will continue to experience inter alia: i) reduced water availability for household use; ii) decreased food security as urban and peri-urban farming becomes less productive; and iii) greater risks to health from the increased frequency and severity of climate-related disasters, and the prevalence of vector and water-borne diseases.

The LDCF project will reduce the vulnerability of urban communities to the effects of climate change by implementing urban EbA interventions that are informed by scientific research and local knowledge in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay. These interventions will enhance the provision of ecosystem services – including flood protection, water quality maintenance and erosion prevention – regardless of climate-related effects. In addition, the urban EbA interventions of the project will increase the climate-resilience of the baseline projects in the three selected cities. The table below describes the business as usual scenario compared with the alternative adaptation scenario in more detail for each outcome.

	Business-as-usual		Alternative adaptation scenario
Problem Description	Poor urban communities living in Asia-Pacific LDCs are vulnerable to the current and predicted effects of climate change including flooding, droughts, landslides, cyclones and increased temperatures. Local city management authorities have limited capacity, knowledge or financial resources to manage these effects. There is consequently an urgent need to identify, demonstrate, maintain and upscale adaptation interventions, as well as to build capacity and knowledge of governments and city-management authorities, to increase the climate change resilience of poor urban communities living in Asia-Pacific LDCs.		The LDCF project will increase the climate resilience of poor urban communities living in Asia-Pacific LDCs by catalysing large-scale implementation of EbA in the urban context. This will be achieved by demonstrating urban EbA interventions in pilot cities in Bhutan, Cambodia, Lao PDR and Myanmar. Additionally, knowledge on the design and implementation of urban EbA will be disseminated throughout the region. City-management authorities and local communities in pilot cities will also be trained on climate change and EbA. Furthermore, an upscaling strategy will be developed to promote urban EbA approaches in other cities both nationally and regionally.
Project Outcomes	<p>Outcome 1. There is currently:</p> <ul style="list-style-type: none"> <li>• Limited sharing of experience and information between adaptation-related initiatives – particularly between and within relevant government departments, the private sector and research institutions.</li> <li>• Limited awareness of urban EbA as an approach for climate change adaptation.</li> <li>• Limited integration of urban EbA into national and sub-national strategies, plans and laws.</li> <li>• Limited technical capacity of government to integrate EbA into development plans.</li> </ul>		<p>The project will increase the technical capacity of the relevant stakeholders to plan and implement urban EbA. The activities under this Outcome will develop an enabling environment for national and local government in the Asia Pacific region to promote the upscaling of urban EbA. This will be done by:</p> <ul style="list-style-type: none"> <li>• collating, reviewing and synthesising knowledge of effective adaptation to climate change in an urban context – including urban EbA and other relevant hard adaptation interventions – to guide interventions in pilot cities;</li> <li>• strengthening an EbA focus within local government institutions and city management authorities;</li> <li>• training city management authorities in pilot cities on climate change impacts and appropriate urban EbA interventions;</li> </ul>

			<ul style="list-style-type: none"> <li>• developing policy briefs and technical guidelines on increasing the resilience of poor urban community livelihoods to climate change using appropriate urban EbA interventions such as urban reforestation, urban wetland restoration and urban agriculture; and</li> <li>• developing decision-making tools to integrate EbA into urban development planning, more specifically into the NAP process</li> </ul>
	<p>Outcome 2. At present:</p> <ul style="list-style-type: none"> <li>• Climate change related projects do neither include the use of the EbA approach to adapt to climate change, nor do they consider the future effects of climate change.</li> <li>• Urban ecosystems are being degraded as a result of uncoordinated urban planning and unsustainable use of water resources.</li> <li>• Natural disasters – such as hurricanes and storm surges – are exacerbated by the effects of climate change, thereby damaging urban infrastructure and livelihoods.</li> <li>• There is limited knowledge on best practices to implement urban EbA interventions.</li> <li>• Urban wetlands have reduced water storage capacity because of pollution and unregulated solid waste management.</li> <li>• Urban communities remain vulnerable to the effects of climate change.</li> </ul>		<p>The urban EbA interventions implemented in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay will restore urban ecosystems in these cities, and enhance services from these ecosystems under conditions of climate change. This will reduce the vulnerability of urban communities to the effects of climate change. In addition, the interventions will: i) demonstrate the benefits of an EbA approach; and ii) increase the adaptive capacity of urban communities to climate change. This will be achieved through inter alia:</p> <ul style="list-style-type: none"> <li>• assessing city-specific climate change impacts and adaptation needs through a multi-stakeholder engagement process, including workshops with the relevant city management authorities and poor urban communities;</li> <li>• selecting EbA interventions appropriate to social, cultural and environmental contexts of each pilot city through a multi-stakeholder engagement process, including workshops with the relevant city management authorities and poor urban communities;</li> <li>• developing technical guidelines for EbA interventions in pilot cities;</li> <li>• implementing urban EbA interventions – such as urban reforestation, urban wetland restoration and urban agriculture – in pilot cities to reduce the climate vulnerability of the urban poor;</li> <li>• developing and promoting alternative livelihoods based on the ecosystem services enhanced by urban EbA interventions; and</li> <li>• establishing long-term research programmes in scientific institutions to assess the long-term societal and ecological benefits of urban EbA interventions.</li> </ul>

	<p>Outcome 3. Currently, there is limited:</p> <ul style="list-style-type: none"> <li>• Understanding of the performance of EbA in an urban environment.</li> <li>• Awareness on urban EbA to adapt to climate change in the Asia-Pacific.</li> <li>• Knowledge on urban EbA within the Asia-Pacific region.</li> <li>• Finances and mechanisms to promote and upscale urban EbA across the Asia-Pacific region.</li> </ul>		<p>The LDCF project will promote the generation and sharing of evidence-based knowledge of urban EbA across the Asia-Pacific region. This will be achieved by:</p> <ul style="list-style-type: none"> <li>• monitoring and assessing the performance of EbA interventions in pilot cities, including participatory monitoring and evaluation by local communities where appropriate;</li> <li>• synthesising lessons learned concerning the implementation of urban EbA interventions;</li> <li>• disseminating knowledge and lessons learned to local authorities and the public using appropriate media;</li> <li>• distributing knowledge on integrating urban EbA into city planning and management processes on local, national and regional platforms, to facilitate the upscaling of urban EbA approaches throughout the region;</li> <li>• establishing public awareness programmes on climate change impacts and appropriate urban EbA interventions; and</li> <li>• developing national upscaling strategies – with relevant local and national government departments – to promote urban EbA approaches and incorporate them into national development policies, strategies and legislation.</li> </ul>
Cost	Business-As-Usual Development Cost US\$88,190,417		Additional Adaptation Cost US\$6,000,000
Financed by:	UN-Habitat, UNDP-UNEP PEI, Thimphu Thromde (Bhutan), Provincial Hall of Kep (Cambodia), Phongsaly and Oudomxay province governments (Lao PDR), Mandalay City Development Committee (Myanmar), National Council for Sustainable Development (Cambodia).		LDCF

### 5) Adaptation benefits (LDCF/SCCF)

Urban communities in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay will gain direct adaptation benefits from the implementation of EbA in urban ecosystems. These benefits will initially accrue locally, but research and awareness raising on urban EbA under Component 3 will promote the replication and upscaling of the EbA interventions nationally and regionally. In addition, the upscaling strategy and knowledge frameworks established by the project will support the sustained promotion of urban EbA in the long term.

EbA interventions demonstrated by the project will therefore provide multiple benefits to poor urban communities in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay. Such urban EbA interventions include inter alia: i) water

harvesting; ii) urban reforestation; and iii) urban agriculture. Household-level interventions – such as rainwater harvesting – will increase the water supply and reduce the negative effects of droughts. Urban reforestation and urban agriculture will increase vegetation cover within these cities through the planting of climate-resilient and multi-benefit tree species<sup>17</sup> – thereby reducing heat stress, mitigating flooding, enhancing groundwater recharge and reducing air pollution. Furthermore, multi-benefit tree species will increase the climate resilience of poor communities by diversifying urban food sources and income streams.

The LDCF project will also generate benefits for the pilot cities and the region after the implementation period. This will be enabled by: i) promoting an upscaling strategy for local level interventions to be expanded and replicated across the region; ii) reviewing, synthesising and disseminating results of the Long-term Research programme to national and regional networks; and iii) establishing public awareness and training programmes on climate change impacts and appropriate urban EbA interventions.

## **6) Innovativeness**

The LDCF project is innovative because: i) EbA is an innovative approach that has been proven to be cost effective in providing adaptation benefits<sup>18</sup>; ii) EbA approaches will support local communities in meeting their adaptation needs by reducing the climate vulnerability of urban areas, improving the provision of ecosystem goods and services (e.g. livelihood provision, buffering from extreme weather events); and iii) implementation of EbA interventions also yields co-benefits such as biodiversity conservation, additional climate-resilient livelihoods, carbon sequestration and poverty reduction opportunities. The proposed LDCF financed project is innovative in that it will introduce the EbA approach as a novel and cost effective way to adapt to the effects of climate change in an urban context in the Asia Pacific region.

Wherever possible, the urban EbA interventions implemented through the LDCF-financed project will complement existing and planned hard infrastructure. The combination of EbA and hard engineering is an innovative and effective option because hard infrastructure provides direct benefits in the short to medium term to address immediate needs whereas EbA interventions are comparatively better at ensuring long-term adaptation gains. In addition, strengthening and protecting ecosystems through EbA is a long-term investment that – if well managed – will provide a wide range of environmental, social and financial benefits in the future.

A long-term research programme will be developed in collaboration with the existing research institutes to monitor and evaluate the benefits of the EbA interventions. Such research is innovative as the monitoring of the potential benefits of EbA has not yet been undertaken in Bhutan, Cambodia, Lao PDR and Myanmar.

## **Sustainability**

The sustainability of the LDCF project's investments will be supported by: i) active participation of all relevant stakeholders in the decision-making and implementation of the project activities; ii) strengthened institutional and technical capacity of national and local government to monitor the EbA interventions and maintain the benefits of the interventions; iii) increased public awareness of the benefits of urban EbA to support and maintain the activities beyond the project lifespan; and iv) collection, analysis and dissemination of the results generated through the long-term research programme on urban EbA interventions. Details of these approaches are described below.

The LDCF project was developed by consulting a range of stakeholders including: i) central government ministries and departments; ii) local government representatives; iii) city management authorities and iv) representatives from the selected communities in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay. These stakeholders will continue to be consulted during the implementation of the project. In particular, participatory consultations will be undertaken to collection socio-economic data, validate and refine EbA interventions and develop livelihood improvement plans

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<sup>17</sup> Certain tree species can provide additional benefits to human populations through the provision of non-timber forest products (NTFPs). This can include nuts, seeds, berries, medicinal plants, fuelwood, fodder and construction materials.

<sup>18</sup> Jones, H.P., Hole, D.G. & Zavaleta, E.S. 2012. Harnessing nature to help people adapt to climate change. *Nature Climate Change* 2, 504-509.

(Component 2). This participatory approach will promote ownership of the project by the stakeholders, which will contribute to the sustainability of the project.

The technical and institutional capacity of stakeholders in the four selected cities<sup>19</sup> will be increased to plan and implement EbA through: i) training on this approach as a cost-effective and sustainable means of adaptation in urban areas within Component 1; ii) demonstration of EbA in pilot cities within Component 2; and iii) knowledge collation, generation and dissemination through Component 3. At the local level, urban communities will be trained on planning, implementing, monitoring and maintaining urban EbA. This training will be informed by technical guidelines, which will be developed in English and local languages. Within Component 3, a participatory monitoring framework will be developed and implemented with these local communities to measure performance of the interventions during the project lifespan. These activities will contribute to increasing the capacity of local communities in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay to manage and maintain urban EbA interventions. Research on the long-term societal, economic and ecological benefits that will be designed and initiated within Component 1 will also contribute to the knowledge base of urban EbA in the four pilot countries, and the Asia-Pacific region in general. Knowledge on urban EbA – including results from the research (Component 1) and monitoring activities (Component 3) – will be managed and shared through existing local, national and regional platforms, which will promote the uptake of urban EbA after the project lifespan. Importantly, the availability of quantitative information on the benefits of urban EbA will promote evidence-based decision-making by the local authorities in the future, thereby promoting EbA investments beyond the project's endpoint. National upscaling strategies will also be developed with government from Bhutan, Cambodia, Lao PDR and Myanmar to promote integration of urban EbA into planning and development in other cities throughout the Asia-Pacific.

Public awareness programmes on urban EbA will be implemented in Bhutan, Cambodia, Lao PDR and Myanmar to promote sustainability of LDCF investments. Through awareness raising – particularly at young age – it is more likely that people will remember EbA as an option to adapt to climate change at a later point in time. In particular, the awareness raising campaign will teach people about the: i) the effects of climate change on urban areas; ii) the cost-effectiveness of EbA for managing these effects; and iii) best-practice EbA. Information will be communicated through a variety of appropriate media such as radio, webinars, social media and local newspapers.

Community engagement in the planning, implementing and monitoring of EbA interventions will ensure local ownership. In Bhutan, “Self-Help Groups” will be formed during the implementation phase (for example “women’s vegetable groups”) that would be involved in the implementation and maintenance of the activities. These community associations will officially be in charge of managing the intervention sites for which management plans will be developed. In Myanmar, at the commune level Commune Committees for Women and Children will be actively involved in the implementation and maintenance of EbA interventions. Similarly at the commune/Sankgat level in Cambodia, beneficiaries – particularly women – will participate in urban agriculture initiatives which will contribute towards social cohesion. The participation of local communities will also result in increased awareness of the long-term benefits of protecting ecosystems for the improvement of livelihoods and reducing vulnerability to climate change.

## **Replication**

The LDCF project will implement urban EbA interventions at selected sites in four cities in Bhutan, Cambodia, Lao PDR and Myanmar. Urbanisation and increased incidence and severity of climate events – including flooding, droughts, erratic rainfall and heat stress – are predicted to affect most cities in the Asia Pacific. Consequently, the interventions implemented in the four selected pilot cities can be effectively replicated across this region. The provision of resources from urban ecosystem is important in increasing the adaptive capacity of poor, urban communities to climate change. The technical guidelines that will be developed within Component 2 will be tailored to enhance services from such ecosystems through implementation of EbA. These technical guidelines will be documented – along with lessons learned and other knowledge – to facilitate replication in other cities in the country and the Asia-Pacific region.

To promote upscaling and replication of urban EbA at national level, an upscaling strategy will be developed within Component 3. This upscaling strategy will include information on: the benefits and cost-effectiveness of EbA relative to other approaches for adapting to climate change in urban areas; ii) information on the need for multi-sectoral research to inform EbA; iii) recommended approaches to coordinate implementation of EbA across urban sectors; iv) the roles and

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<sup>19</sup> Particularly those government departments involved with water, environment and urban planning.

responsibilities of stakeholders in each country related to implementing urban EbA approaches; and v) recommendations for sustainable financing mechanisms to support the upscaling of urban EbA in each country. Decision-support tools will be developed within Component 1 to support implementation of this strategy, and promote integration of EbA interventions into urban development plans. In addition, platforms will be updated to share knowledge on urban EbA – such as APAN and ACCCRN – to facilitate information sharing between national and local governments, as well as NGOs and community leaders between cities across the Asia-Pacific region.

Knowledge will be generated through the LDCF project on the cost-effectiveness and performance of EbA interventions. Through these knowledge-related activities, best-practice EbA interventions will be identified for urban areas in the Asia-Pacific region. This knowledge – along with on-the-ground demonstrations of urban EbA in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay – will promote replication of the interventions beyond the project's intervention areas.

*A.2. Child Project?* If this is a child project under a program, describe how the components contribute to the overall program impact.

N/A

*A.3. Stakeholders.* Elaborate on how the key stakeholders' engagement, particularly with regard to [civil society](#) and [indigenous peoples](#), is factored in the preparation and implementation of the project.

The development process for the LDC-financed project was country driven and included extensive consultations with local urban communities, civil society organization, city management authorities and relevant government authorities in the sectors of urban planning, transport, energy, water and the environment. There are a variety of CSOs/NGOs operating within each of the target cities with varying levels of activity and challenges. The landscape varies between each of the countries and hence they were involved in project preparation to different degrees. For example:

Within **Cambodia**, there are a number of active CSOs operating in Kep. Only two registered CSO's have offices in Kep, the others deliver their services or implement actions in Kep as part of their organisations' activities. A few of the organisations provide services related to environmental protection and awareness raising. However, there are not that many CSOs that specifically focus on ecosystem based adaptation or urban development. In general, CSOs have had difficulties getting support through funds and their activities have reduced. Urban planning and development is generally lead by provincial hall and government departments. However, the city authorities in Kep undertake workshops relating to urban planning and development at which representatives from CSOs can participate and discuss projects raised by communes/Sangkats that require funding or support. The CSOs can then design project interventions based on the needs from the commune/Sangkat using their own resources Therefore, CSOs can actively participate in project design and implementation in Kep City. Their involvement is essentially dependent upon the needs of the local people as expressed to them. CSO's were therefore involved in LDCF project design through the city authorities and workshops held at inception phase.

In contrast thereto, the CSOs in **Myanmar** indicate that project design and implementation usually follows a top-down approach. CSOs are therefore rarely involved in discussions regarding the formulation of project initiatives at the outset and they welcomed the participatory approach adopted by the LDCF project. By adopting such an approach, CSOs in Mandalay – such as Sein Yaung So, Bramaso and FREDa have been able to actively participate in workshops discussing the city selection process as well as the activities and costs estimates. These CSOs will be further consulted and involved in project activities during project implementation.

In order to strengthen civil society, promote social welfare and improve the conditions and quality of life in **Bhutan**, legislation has been introduced which promotes the establishment and growth of civil society organisations. Examples of CSOs active in Bhutan include Respect, Educate and Empower Women (RENEW) which addresses the needs of disadvantaged women and girls; Bhutan Association of Women Entrepreneurs (BOWE) which promotes women entrepreneurs at grassroots level towards poverty reduction and self-reliance; Royal Society for Protection of Nature (RSPN) which promotes sustainable livelihood options in communities worldwide as well as promotes research,

environmental education and build capacity of local communities in conservation and sustainable management of natural resources. In addition, the Bhutan Foundation is active in climate change activities and has trained both teachers and students in data collection as well as weather station monitoring and climate change has been included within the science curriculum. Notwithstanding the approaches adopted in each city promote and support CSOs involvement, CSOs in all of the target cities have: i) been actively engaging with communities and identifying communities' priority needs through consultations, focus group discussions and field visits at local levels; and ii) provided technical support and funding contributions to project implementation. This has included inter alia undertaking needs assessments in Bhutan to identify and endorse the priority needs in Thimphu. Relevant CSO were consulted during the PPG process in Bhutan through focus group discussions. RSPN and Tarayana Foundation were actively involved and have important roles to play in project implementation especially relating to wetland management, plantation, smart green technologies such as irrigation and rain water harvesting etc.

Due to **Lao's** political circumstances, only three international NGOs were present until 1986. Although there is still some uncertainty regarding the presence and role of CSOs in Lao, there has been an increase in the number of international NGOs operating in the country – such as Care International, WWF and IUCN. In addition, many civil society roles have been fulfilled by mass organisations such as the Lao Women's Union and Lao People's Revolutionary Youth Union. There is also strong government support for community participation-based CSOs, particularly Village Education Development Communities. Other networks that are of relevance include the Lao NPA network which is an informal network of non-profit associations involved in development work in Lao PDR as well as the Development Gender Group (GDG) which is a local network of organisations working on gender issues. CSO's in Lao were consulted and informed during the development of the project through workshops and through the provincial government, and will continue to be consulted during project implementation.

At the commencement of the PPG phase in October 2015, a regional workshop was held with the national consultants and national focal points of Bhutan, Cambodia, Lao PDR and Myanmar to outline the background and the development process for the project. This regional workshop was followed by stakeholder consultations including: i) national inception workshops during October 2015; ii) national validation workshops during March-May 2016; and iii) various individual meetings with national stakeholders in each of the focal countries between October 2015 and May 2016. The national workshops were complemented by regular consultations with the four national consultations from Bhutan, Cambodia, Lao PDR and Myanmar respectively. The objectives of these consultations were to: i) identify the most vulnerable areas in the pilot cities; ii) identify appropriate baseline projects within these areas; iii) develop a detailed list of urban EbA interventions to implement in the selected sites; iv) calculate the costs of each intervention; and v) set up realistic indicators and targets for these interventions. To achieve this, the four national consultants engaged with provincial and local stakeholders, visited the pilot cities and selected the intervention sites using a set of selection criteria. As a result, the EbA interventions of the proposed project are aligned with the cities' specific priorities and needs to adapt to climate change. This participatory approach will also be followed during the project implementation phase and will promote ownership of the project by the government and local communities. The stakeholders consulted during the PPG phase are outlined in the table below.

**Table 1: The main stakeholders consulted in each country during the PPG Phase**

Stakeholders	Bhutan	Cambodia	Lao PDR	Myanmar
National government	<ul style="list-style-type: none"> <li>• National Environment Commission</li> <li>• Ministry of Works and Housing, Policy and Planning Division</li> <li>• Ministry of Works and Housing, Department of Housing and Settlement</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Environment: (General Department of Administration for Nature Conservation and Protection, Climate Change Department)</li> <li>• The Ministry of Land Management, Urban Planning and</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Natural Resource and Environment</li> <li>• Ministry of Agriculture and Forestry</li> <li>• Ministry of Planning and Investment (MPI)</li> <li>• Ministry of Planning and Investment (MPI)</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Natural Resources and Environmental Conservation: Environmental Conservation Department, Dryzone Greening Department and Forest Department</li> <li>• Ministry of Home Affairs, General</li> </ul>

	<ul style="list-style-type: none"> <li>• Ministry of Works and Housing, Department of Engineering Services</li> <li>• Ministry of Agriculture and Forests</li> <li>• Ministry of Agriculture and Forests, Department of Forest and Park Services. Thimphu Forest Division</li> <li>• Ministry of Agriculture and Forests, Department of Forest and Park Services. Watershed Management Division</li> <li>• Ministry of Agriculture and Forests, Department of Forest and Park Services, Nature Recreation and Eco-tourism Division.</li> <li>• National Commission for Women and Children</li> </ul>	<ul style="list-style-type: none"> <li>Construction (MLMUPC)</li> <li>• Ministry of Agriculture Forestry and Fisheries</li> <li>• Ministry of Planning</li> <li>• Ministry of Rural Development</li> <li>• Ministry of Water Resources and Meteorology</li> <li>• National Committee for Disaster Management</li> <li>• National Mekong Committee</li> <li>• Cambodia Development Resource Institute</li> <li>• The Ministry of Industry, Mines and Energy (MIME)</li> <li>• The Ministry of Public Works and Transportation (MPWT)</li> <li>• The Ministry of Rural Development (MRD)</li> <li>• The Ministry of Health (MoH)</li> <li>• The Ministry of Tourism (MoT)</li> <li>• The Council for the Development of Cambodia (CDC)</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Transportation and Public Works</li> <li>• Ministry of Energy and Mines</li> <li>• Ministry of Health</li> <li>• Department of Disaster Management and Climate Change</li> <li>• Department of Meteorology and Hydrology ,</li> <li>• Department of Land Planning and Development</li> <li>• Department of Forest Resource Management</li> <li>• Department of Forestry</li> <li>• Department of Agriculture</li> <li>• Mekong River Commission Secretariat</li> <li>• National Geographic Department</li> <li>• Statistical Division, Department of Planning</li> <li>• National Lao National Youth Office</li> <li>• Lao National Women Union</li> <li>• Loa National Front</li> </ul>	<ul style="list-style-type: none"> <li>Administration Department</li> <li>• Ministry of Culture, Department of Archaeology and National Museums</li> <li>• Ministry of Agriculture, Livestock and Irrigation: Department of Irrigation and Water Resource Utilisation, Department of Fisheries and Department of Agriculture</li> <li>• Ministry of Industries, Directorate of Heavy Industries Planning (DHIP)</li> <li>• Ministry of Health</li> <li>• Ministry of Hotels and Tourism</li> </ul>
Provincial District/local government	<ul style="list-style-type: none"> <li>• Thimphu Thromde (Thimphu City Corporation)</li> </ul>		<ul style="list-style-type: none"> <li>• Provincial Natural Resource and Environment Office (PoNRE)</li> <li>• Provincial Agriculture &amp; Forestry Office (PAFO)</li> <li>• Provincial Land Planning and Development Office (PLPDO)</li> </ul>	<ul style="list-style-type: none"> <li>• Mandalay City Development Committee</li> </ul>

			<ul style="list-style-type: none"> <li>• Provincial Planning and Investment Office (PPIO)</li> <li>• Provincial well-water supply office</li> <li>• District Natural Resource and Environment Office (DoNRE)</li> <li>• District Agriculture &amp; Forestry Office (DAFO)</li> <li>• District Planning and Investment Office (DPIO)</li> <li>• Khumbans (Village Custer)</li> </ul>	
Local	<ul style="list-style-type: none"> <li>• Members from informal settlements</li> </ul>		<ul style="list-style-type: none"> <li>• Local villagers</li> <li>• Ethnic groups</li> </ul>	<ul style="list-style-type: none"> <li>• Local communities in Amarapura Township, Mandalay City</li> </ul>
Private sector				<ul style="list-style-type: none"> <li>• Sein Yaung So</li> <li>• Amara Garuna</li> <li>• Bramaso</li> <li>• Textile industry of Mandalay</li> <li>• Taughthaman Chit Thu</li> </ul>
NGOs & CSOs	<ul style="list-style-type: none"> <li>• UNDP, Bhutan Country Office</li> <li>• Urban agriculturist</li> <li>• Tarayana Foundation</li> </ul>	<ul style="list-style-type: none"> <li>• Cambodia Climate Change Alliance</li> <li>• Clinton Foundation</li> <li>• Wildlife Conservation Society</li> <li>• International Union for Conservation of Nature</li> <li>• Fauna and Flora International</li> <li>• Wildlife Alliance</li> <li>• Cambodia Non-Timber Forest Working Group;</li> <li>• Cambodia Rural Development Team</li> <li>• Centre for People and Forests</li> <li>• UN-Habitat</li> <li>• Asian Development Bank</li> <li>• UNDP</li> <li>• FAO</li> </ul>	<ul style="list-style-type: none"> <li>• UN-Habitat</li> <li>• ADB</li> <li>• IUCN</li> <li>• WWF</li> <li>• International Water Management Institute</li> <li>• UNDP</li> <li>• GIZ/CliPAD</li> <li>• VFI</li> <li>• WB</li> </ul>	<ul style="list-style-type: none"> <li>• Forest Resource Environment Development and Conservation Association (FREDA)</li> <li>• Biodiversity and Nature Conservation Association (BANCA)</li> <li>• Ecosystem Conservation and Community Development Initiative (ECCDI)</li> </ul>

		• Mekong River Commission		
Research institutes	• Royal Society for the Protection of Nature		• University of Laos	• Mandalay University • Mandalay Technical University

The implementation phase of the LDCF project will rely on the participation of a wide range of stakeholders. Consequently, the project will create active partnerships at the regional, national and local level with NGOs, CSOs, private sector partners and relevant ongoing initiatives and projects in the pilot cities. In addition, national and international research institutions will be involved in the implementation and maintenance of scientific research projects to inform the design and implementation of the urban EbA interventions. In particular, these research institutions will contribute to assessing and monitoring the long-term social, economic and environmental benefits of these interventions. At the local level, representatives of urban communities will participate in the decision-making process to design, implement and monitor the on-the-ground interventions. Data collection and consultation processes at community level as well as communication both to and from the local communities are therefore integral to meeting the objectives of the LDCF project. Consequently, CSOs will play an important role in ensuring this communication, as well as the local authority. Thus, local authorities will be required to engage with the local communities providing information to them about local development and long-term planning. Community participation will be further supported by communicating with the public in a consistent, supportive and effective manner. This process will promote an understanding and ownership of the project's interventions by local communities.

The process for stakeholder consultations during the implementation phase will include: i) initial meetings with national and sub-national government authorities – the NEC-CD, MoE, MoNRE and MNREC – and communal authorities during the inception workshop (see Section 2.5); ii) consultations with national planning institutions; iii) consultations with the coordinators of the baseline and partner projects (see Section 2.6); iv) consultations with the aligned projects (see Section 2.7); v) consultations with NGOs, local associations and cooperatives; and vi) consultations with other members of local communities that will benefit from the project. The results of these consultations will be used to update the project implementation plan, identify any additional risks to project implementation and develop risk mitigations strategies. The role of relevant stakeholders and their partners during the implementation phase of the project are presented in Table 9 below. MoUs will be signed between the implementing ministry and the relevant government institutions participating in the implementation of the project.

**Table 2: The main stakeholders that will be involved in project implementation**

Activity	Lead coordination	Main responsibility	Important stakeholders
<i>Outcome 1: Technical and institutional capacity of city management authorities to integrate urban EbA into development planning strengthened.</i>			
<b>Output 1.1: Policy briefs developed on cost-effective adaptation to climate change in an urban context</b>			
1.1.1	ROAP	Coordinate stock-takes on adaptation techniques in urban environments.	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar), UN-Habitat, UNDP, UNISDR, ACCCRN, ICLEI, MCCA
1.1.2	ROAP	Coordinate cost-benefit analyses.	
1.1.3	ROAP	Coordinate development of decision-making tools.	
<b>Output 1.2: Training on climate change impacts and appropriate urban EbA interventions provided to city management authorities in Bhutan, Cambodia, Lao PDR and Myanmar (including from pilot cities).</b>			
1.2.1	ROAP & UN Habitat	Coordinate development of training materials for each country.	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar), Training NGO, MCCA, city management authorities and CSOs in Bhutan, Cambodia, Lao PDR and Myanmar.
1.2.2	ROAP & UN Habitat	Coordinate training for city management authorities and leaders of CSOs.	
<b>Output 1.3 Decision-making tools to integrate urban EbA into development planning and the NAP process, designed and presented to city authorities in Bhutan, Cambodia, Lao PDR and Myanmar.</b>			
1.3.1	ROAP & UN Habitat	Coordinate assessment of decision-making processes in each city.	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar),

Activity	Lead coordination	Main responsibility	Important stakeholders
1.3.2	ROAP & UN Habitat	Coordinate the design of decision-making tools.	Academics from local universities, urban planners and developers, UN-Habitat, MCCA.
1.3.3	ROAP & UN Habitat	Coordinate training of city management authorities.	
<i>Outcome 2: EbA demonstrated in pilot cities to reduce the vulnerability of poor, urban communities</i>			
<b>Output 2.1: Vulnerability maps and adaptation reports developed for pilot cities.</b>			
2.1.1	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate development of climate models.	MEK-WATSAN, PEI, National experts, local communities. MCCA.
2.1.2	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate socio-economic research in selected cities.	
2.1.3	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate ecosystem assessments in selected cities.	
2.1.4	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate development of short- to medium-term vulnerability maps for selected cities.	
2.1.5	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate development of a report on adaptation needs and potential contributions from urban ecosystem services.	
<b>Output 2.2: City-specific urban EbA interventions appropriate to the social, cultural and environmental contexts – including urban reforestation, urban agriculture and wetland restoration – implemented in pilot cities.</b>			
2.2.1	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate validation of EbA interventions and targeted communities.	MEK-WATSAN, PEI, UN-Habitat, Tarayana Foundation (Bhutan), Cambodia Climate Change Alliance, Commune Committees for Women and Children (Cambodia), Climate Adaptation of Poor Farmers in the Northern Laos (CARE, Lao PDR), Brahmaso CSO, EC, MCDC MCCA (Myanmar) and local communities
2.2.2	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate development of technical guidelines on EbA interventions.	
2.2.3	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate training for local communities and supporting government staff.	
2.2.4	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate implementation of urban EbA interventions.	
<b>Output 2.3: Livelihood improvement plans based on urban ecosystems developed and implemented with poor urban communities.</b>			
2.3.1	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate development of reports on livelihoods from urban ecosystems in targeted urban communities.	MEK-WATSAN, PEI, UN-Habitat, Tarayana Foundation (Bhutan), Cambodia Climate Change Alliance, Commune Committees for Women and Children (Cambodia), Climate Adaptation of Poor Farmers in the Northern Laos (CARE, Lao PDR), Brahmaso CSO, ECD, MCDC, MCCA (Myanmar), and local communities
2.3.2	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate development of plans to improve livelihoods of vulnerable, urban communities.	
2.3.3	NEC-CD (Bhutan), MoE (Cambodia),	Coordinate implementation of livelihood improvement plans.	

Activity	Lead coordination	Main responsibility	Important stakeholders
	MoNRE (Lao PDR), MNREC (Myanmar)		
2.3.4	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate workshop with potential private sector partners and urban communities.	
<b>Output 2.4 Long-term research frameworks established in local scientific institutions to assess the societal, economic and ecological benefits of urban EbA in pilot cities.</b>			
2.4.1	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate development of a research programme with research institutions and/or universities.	MEK-WATSAN, PEI, Royal Society for Protection of Nature (Bhutan), Bhutan's National Environment Commission, College of Science and Technology of Bhutan, Royal University of Bhutan, Institute of Technology of Cambodia, University of Cambodia, Science, Technology and Environment Agency of Lao PDR, University of Lao PDR, University of Mandalay and Mandalay Technical University
2.4.2	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate selection and funding of studies.	
2.4.3	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate sharing of research findings.	
2.4.4	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar)	Coordinate development of Memoranda of Understanding.	
<b>Outcome 3: Knowledge base for supporting the design of urban EbA interventions strengthened, and public awareness of the positive potential of urban EbA interventions to reduce vulnerability to climate change impacts increased.</b>			
<b>Output 3.1: Performance of urban EbA interventions in pilot cities monitored and assessed.</b>			
3.1.1	ROAP	Coordinate development of a monitoring framework.	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar), UN-Habitat, UNISDR
3.1.2	ROAP	Coordinate implementation of a monitoring framework.	
3.1.3	ROAP	Coordinate development of reports on performance of urban EbA interventions.	
<b>Output 3.2 National public awareness programmes implemented on climate change effects in urban areas and appropriate EbA interventions to manage these effects, including lessons learned from interventions implemented in pilot cities.</b>			
3.2.1	ROAP	Coordinate collation of information.	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MoECAFF (Myanmar), UN-Habitat, UNISDR, NGOs and CSOs
3.2.2	ROAP	Coordinate awareness-raising programmes with local partners.	
<b>Output 3.3 Relevant local, national and regional platforms updated to share knowledge on integrating urban EbA into city planning and management processes to facilitate the upscaling of urban EbA approaches throughout the region.</b>			
3.3.1	ROAP	Coordinate regional workshop for regional and local partners.	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar), urban planners and developers, APAN, ACCCRN and CTCN, local platforms
3.3.2	ROAP	Coordinate update of platforms with regional and local partners.	
3.3.3	ROAP	Coordinate effective and ongoing communication with local partners.	
3.3.4	ROAP	Coordinate effective and ongoing communication with regional and local partners.	
<b>Output 3.4 National upscaling strategies for urban EbA developed and presented to policy- and decision-makers.</b>			
3.4.1	ROAP	Coordinate development of upscaling strategies with national partners.	NEC-CD (Bhutan), MoE (Cambodia), MoNRE (Lao PDR), MNREC (Myanmar), urban planners and developers
3.4.2	ROAP	Coordinate presentation of upscaling strategies with national partners.	

A.4. *Gender Considerations*. Elaborate on how gender considerations were mainstreamed into the project preparation, taking into account the differences, needs, roles and priorities of men and women.

In least developed countries, women tend to have smaller incomes and fewer opportunities compared to men, and their capacity to adapt to the effects of climate change is therefore constrained. Currently gender inequality exists in the Asia-Pacific, particularly in the labour market. For example, only ~56% of women participate in the labour force in Asia, and on average earn ~75% less than men. This has resulted in: i) food insecurity; ii) difficulty in financing children’s education; iii) restricted access to transport and healthcare; and iv) no savings in the event of being laid off . As a result, women have limited access to relevant information and skills to manage the negative effects of climate change. Despite their capability to innovate and lead, women in the Asia-Pacific have historically been excluded from high ranking paid employment and parliament. To promote gender equality in this region, the LDCF project will include women in activities to increase their capacity to adapt to climate change. Consequently, women – as well as other vulnerable demographics – are among the target beneficiaries for this project.

The LDCF project will target poor urban communities in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay, particularly women whose vulnerability will be increased by the predicted effects of climate change. The promotion of women’s participation under the project is in line with GEF guidance and standards<sup>20</sup>. The proposed urban EbA interventions will be gender sensitive and include the development of gender disaggregated targets and indicators to monitor progress throughout the project. Female representation will also be encouraged in all aspects of the project including *inter alia*: i) the technical committee; ii) training sessions and workshops; and iii) activities for urban EbA and livelihood improvement. Accordingly, the Project Management Unit (PMU) and Project Steering Committee (PSC) will also include representatives of both genders. Targets for involving women are included in the Results Framework of the project. In addition, trainers will be required to have the skills and experience necessary to plan and facilitate gender-sensitive training. Gender sensitivity will be incorporated into training topics so that: i) female participants are empowered to participate meaningfully in the trainings; and ii) all participants are made aware of their responsibility to respect the views of all of their colleagues during training workshops. Training and awareness-raising activities will take place with an appropriate proportion of women and men and will be determined during consultations with local government and the selected urban communities in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay. The project managers will be responsible for monitoring and reviewing gender sensitivity in the training activities and the application of gender-disaggregated indicators. Additionally, a gender analysis carried out under the socio-economic assessments will include an element of analysing gender elements in existing climate change related policies in the pilot countries. Following these assessments the project will identify entry points to further integrate gender considerations into climate change adaptation policies. Furthermore, the project will include measures to promote the needs of other disadvantaged and vulnerable groups including children, the elderly and disabled people, wherever possible.

A.5 *Risk*. Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

Risks to the project will be reviewed during the project inception phase, and additional city-specific risks will be identified. In addition, a risk mitigation strategy for each pilot city will be developed at project inception.

#	Description	Potential consequence	Countermeasures	Risk category	Probability & impact (1–5)
Regional-level risks					
1	Project managers and stakeholders at PSC have a limited overview of the overarching project	The effectiveness of project implementation is reduced.	<ul style="list-style-type: none"> <li>A detailed plan and clear description of roles and responsibilities will be developed to ensure that all stakeholders are well</li> </ul>	Organisational	P=2 I=3

<sup>20</sup> GEF. 2008. Mainstreaming gender at the GEF. Washington, USA.

	objectives because of the project's multi-faceted, multi-country nature.		appraised of the project across all four countries.		
2	Poor coordination among project stakeholders because of language and geographical barriers.	Information on urban EbA is not shared effectively between the four countries.	<ul style="list-style-type: none"> <li>The National Coordinator within each NCU will be responsible for ensuring appropriate coordination among project partners – in particular the regional coordinator – and that GEF standards are met.</li> <li>Formal and informal communication and reporting functions between national and regional committees will be undertaken in English.</li> </ul>	Organisational	P=2 I=3
3	Natural disasters undermine the implementation of the EbA interventions.	Economic loss and/or damage to the interventions.	<ul style="list-style-type: none"> <li>Meteorological predictions and conditions will be considered when planning the implementation phase of the project.</li> <li>Existing Early Warning systems will be used during project implementation.</li> </ul>	Ecological	P=4 I=3
National level risks					
4	Limited inter-sectoral data sharing.	The timely delivery and effectiveness of the project is reduced.	<ul style="list-style-type: none"> <li>The LDCF project will promote communication between sectors through all outcomes.</li> <li>Commitments and roles/responsibilities of key and private actors from respective institutions/ departments will be clearly defined.</li> <li>Knowledge-sharing tools will be selected based on the local context (those that do not restrict the transfer and communication of information will be prioritised).</li> </ul>	Political/ Organisational	P=2 I=3
5	High turnover of staff in implementing agencies.	Reduced institutional memory results in disruptions or delays in project implementation and coordination.	<ul style="list-style-type: none"> <li>Dialogue between stakeholders will be promoted during the implementation phase through meetings including PSC, TWG.</li> <li>The process of project decision-making and implementation will be well documented.</li> <li>All documentation that will be developed to guide the project implementation process – such as workplans, technical guidelines etc. –</li> </ul>	Political/ Organisational	P=3 I=3

			will be developed in both English and the local language to guide new staff who become involved in the project.		
6	Government will not provide sufficient funds to sustain the local structures <sup>21</sup> , once the project ends.	Upscaling of the urban EbA interventions will be limited.	<ul style="list-style-type: none"> <li>• A strategy will be developed to upscale, urban EbA interventions within Component 3.</li> <li>• Decision-makers will be trained on the benefits and cost-effectiveness of urban EbA when compared with other adaptation interventions, and will be presented with decision-making tools to integrate urban EbA into planning.</li> <li>• Local communities will be engaged to the point that they fully appreciate the benefits of urban EbA, and will therefore likely encourage the Government to provide the necessary resources.</li> </ul>	Organisational	P=2 I=3
Local-level risks					
7	The implementation of the EbA interventions is undermined by social unrest within the target communities.	Project activities are delayed.	<ul style="list-style-type: none"> <li>• The selection of the intervention sites has taken into account the social situation in the target communities.</li> <li>• During implementation, socio-economic assessments will be undertaken to guide/refine project activities.</li> <li>• The National Coordinator and Regional Coordinators will keep abreast of socio-economic developments in the pilot cities and develop contingency plans for the target communities if necessary.</li> </ul>	Socio-economical	P=2 I=3
8	The communities at the selected intervention sites do not support the proposed urban EbA interventions.	Limited support from the target communities may prevent the achievement of the immediate as well as long-term benefits of the project.	<ul style="list-style-type: none"> <li>• Local communities have been involved in site selection during the PPG.</li> <li>• Communication with urban communities will continue to be undertaken throughout implementation.</li> <li>• The project will include raising awareness on the benefits of EbA.</li> </ul>	Socio-ecological	P=1 I=3

<sup>21</sup> Local structure include for example the research programmes and EbA projects to be implemented under the existing climate change units/committees.

9	Unsustainable land and natural resource use.	Unsustainable use of natural resources continues, leading to further degradation of ecosystems.	<ul style="list-style-type: none"> <li>• Awareness-raising campaigns will be held on the value of intact and functional ecosystems for surrounding communities.</li> <li>• Local communities will be actively engaged during implementation and monitoring of the EbA interventions.</li> </ul>	Social	P=3 I=4
10	Local zoning and land use plans compete with EbA interventions.	The efficacy of the EbA interventions is undermined.	<ul style="list-style-type: none"> <li>• The project will include representatives from the land use and urban planning departments to inform them from the inception phase on the location of the EbA interventions. In addition, formal agreements will be established to ensure that the EbA interventions will not be undermined by future urban development plans.</li> </ul>	Institutional	P=3 I=5
11	Large-scale infrastructure development in the cities during implementation.	Project activities are disrupted or delayed.	<ul style="list-style-type: none"> <li>• The coordinators will collaborate with relevant government agencies to ensure appropriate coordination between all ongoing projects in the intervention sites as well as to take into account urban development plans before embarking on any activities.</li> <li>• EbA will be promoted as a cost-effective and sustainable approach to adaptation, which should be integrated into development.</li> </ul>	Economic/ Institutional	P=2 I=3

*A.6. Institutional Arrangement and Coordination.* Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

ROAP in partnership with UNHABITAT and with technical support from Thimphu Thromde (Bhutan), NCSD (Cambodia), DDMCC (Lao PDR) and MNREC (Myanmar) will be the Executing Agencies (EA) for this project. The EAs will retain overall responsibility for project outcomes and strategic guidance. As a result of the regional character of the LDCF-financed project and the large distances between project sites, the management structure will include a Project Steering Committee at a regional level and four National Project Management Units (PMUs).

The management structure of the project is presented in Figure 1 and its constituents are described below:

- The **Project Steering Committee** (PSC) will provide project oversight and advisory support, particularly regarding the Monitoring and Evaluation (M&E) plan. This committee will be comprised of: i) the focal points from the Gross National Happiness Commission in Bhutan, MoE in Cambodia, MONRE in Lao PDR and MNREC in Myanmar; ii) the UNEP Task Manager (TM); and iii) the Regional Technical Expert (RTE).
- **Project Management Units** (PMUs) will execute the project at a national and local level. This structure will include a National Technical Expert (NTE) and the project finance consultant.

- **Technical Committees (TCs)** will provide technical input for the implementation of the project activities. This group will be comprised of the NTEs, academics, representatives from local and international NGOs, CBOs, representatives from local and national government authorities, national experts, managers of the baseline projects and representatives of other aligned projects.
- The **Regional Support Unit (RSU)** will facilitate the project coordination and execution by providing guidance during the execution of activities. The Regional Support Unit will comprise the Regional Technical Expert (RTE), a part-time M&E expert and Administration and Finance Officer.

The roles of each of these positions and units are detailed further in Appendix 11 of the Project Document.

The PSC will be responsible for taking management-related and technical decisions for the project. The mandate of the PSC will include: i) providing guidance and direction for project implementation; and ii) reviewing and approving reports and Annual Work Plans (AWPs), including any changes to the Results-Based Framework (RBF) or timeline of project activities. All decision to be taken by the PSC will be communicated to the concerned parties by the Member Secretary. The PSC will meet twice a year to discuss performance indicators and provide strategic guidance. In addition, the PSC will ensure that the necessary resources are committed, and will arbitrate on any conflicts within the project or negotiate a solution to any problems between the project and external bodies. Furthermore, the PSC will approve the responsibilities of the Regional Technical Expert (RTE).

A full time National Technical Expert (NTE) – Principal Technical Advisor or Assistant Technical Advisor where the Principal Technical Advisor is funded by the country – will be recruited for the PMU in each of the four countries to lead implementation of local project activities and deliverables. These NTEs will: i) report to the RTE; ii) manage the project in each country in line with the budget, work plans and in accordance with GEF and UNEP guidelines; iii) be responsible for in-country financial management and disbursements with accountability to the government and UNEP; and iv) work closely with national and local authorities, as well as NGOs, to manage the project effectively at a local level. To achieve this, the NTEs will *inter alia*: i) provide on-the-ground information for UNEP progress reports; ii) engage with project stakeholders; iii) arrange the PSC, PMU and other meetings; iv) provide technical support to the project, including measures to address challenges to project execution; and v) participate in training activities, report writing and facilitation of expert activities that are relevant to the NTEs area of expertise. Moreover, the NTE will serve as a liaison among the other PMUs, the technical experts and government staff involved in the project activities. Within the four PMUs, the NTEs will be supported by financed consultants who will be located within the executive ministry.

Technical Committees (TCs) will be established in each country which will be responsible for providing the members of the PSC with the information needed to make informed decisions on implementation at the local level. In addition, the TCs will improve the coordination and dialogue between ongoing initiatives – including the LDCF-funded project. The TCs will be comprised of NTEs, academics, representatives from local and international NGOs, CBOs, representatives from local and national government authorities, national experts, managers of the baseline projects and representatives of other aligned projects (see Section 2.7 of the Project Document). Meetings for the TCs will be held once/twice a year to: i) promote synergy between projects; ii) avoid the duplication of activities; iii) optimize the effects of the project interventions and iv) share lessons learned.

A Regional Support Unit (RSU) will be established in UNEP ROAP to: i) promote dialogue between the PMUs; ii) facilitate coordination of the project throughout the Asia-Pacific region; and iii) strengthen collaboration with existing projects and initiatives in each country and the region. The PMUs will have monthly coordination e-meetings with the RSU and a joint e-meeting every three months. Physical meetings will take place at least once a year. During those meetings, the RSU and the PMUs will receive updates, share experiences on urban EbA and provide recommendations, if necessary, to improve interventions, The RSU will be led by the RTE.

The RTE will provide overall operational management for the successful execution and implementation of the project. This will include the part-time responsibility to manage, coordinate and supervise the PMUS on the implementation of the project and the delivery of results in accordance with the project document and agreed work plans. Furthermore, the RTE will supervise the NTEs and report to the PSC.

The Administration and Finance Officer (AFO) within the RSU will ensure that all financial administrative issues are carried out according to UNEP standard procedures. He/she will make all the necessary administrative steps and financial transactions for project outputs and activities to be delivered according to the established work plan. The AFO will assist the RTE and the UNEP TM in all project reporting requirements and will report to the RTE.

A part-time regional M&E Specialist will be recruited whose duties will include: i) establishing a performance monitoring framework for the four countries to define bi-annual targets for the project to meet the targets defined in the project document by the end of the implementation phase; ii) measuring the indicators to evaluate the progress of the projects in meeting the targets; iii) reporting to the PMUs of each country and PSC on the performance of the project according to project and AMAT indicators; and iv) supporting the NTEs in meeting the project objective. As part of his/her responsibilities, the M&E specialist will oversee and monitor the application of gender disaggregated indicators.

To provide technical support, national and international experts will be hired for specific tasks that cannot be undertaken by government staff. International technical assistance will be sourced for specialists' tasks only where existing national capacity is insufficient. Appropriate international expertise will be sourced with the assistance of UNEP's systems for procurement of consulting services in participation with the NTE. Descriptions of consulting services required are included in the budget notes of Appendix 2 of the Project Document. Terms of reference for project staff are presented in Appendix 11 of the Project Document. Further details of the roles of the units and working group will be determined during the project inception phase.

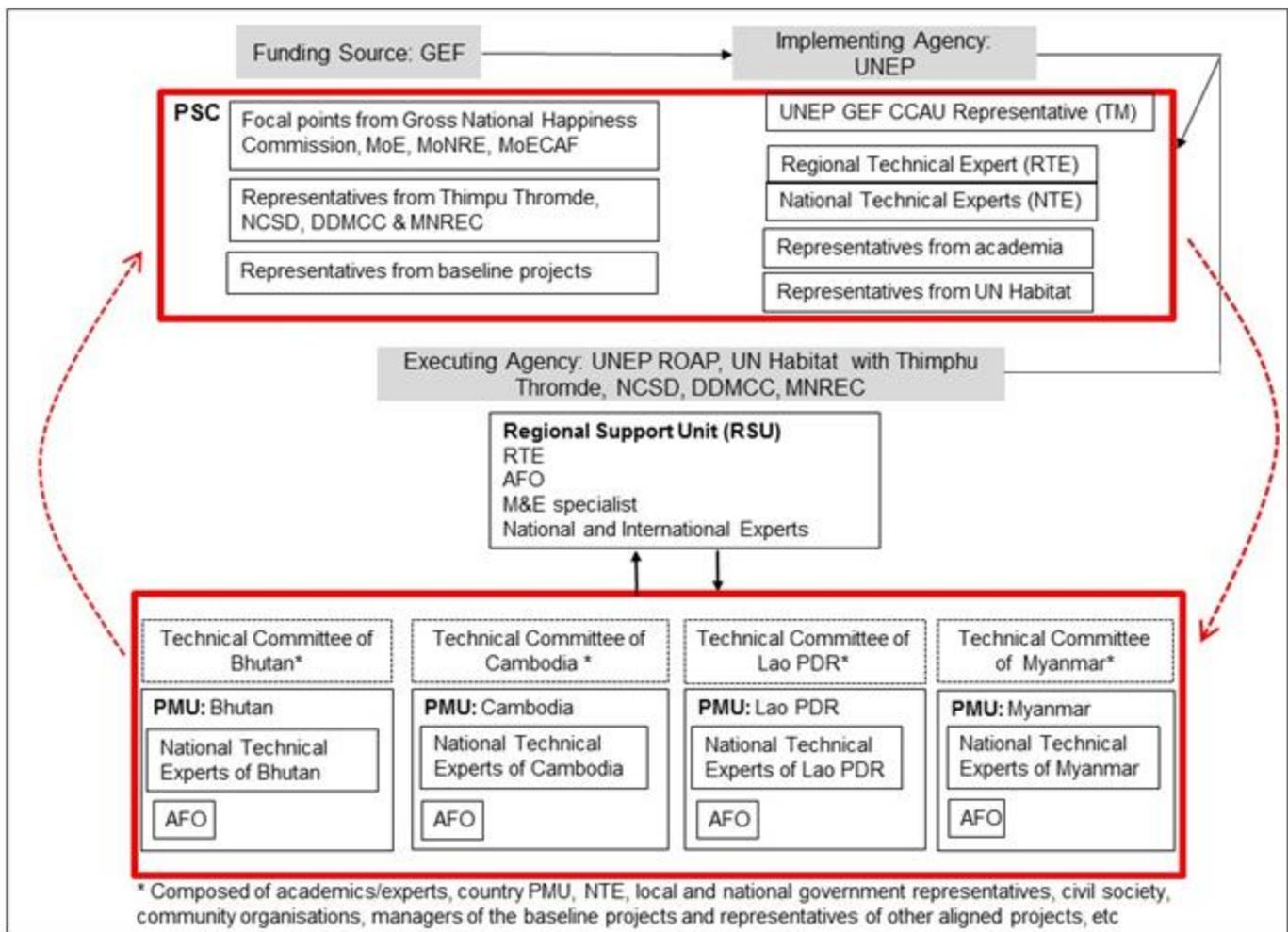


Figure 1. Organogram of the Project Management Structure

Please refer to Section 2.7 of the project document for linkages and planned coordination between GEF and non GEF initiatives.

Additional Information not well elaborated at PIF Stage:

*A.7 Benefits.* Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

Through urban EbA interventions implemented at project sites, it is expected that a number of socio-economic benefits will accrue at a local level. These benefits are described below for each city.

- In Thimphu, interventions will include: i) the planting of climate-resilient tree species along 1.5 km of riparian zone/riverbank to mitigate the damage caused to infrastructure by flooding; ii) the establishment of 10 acres of climate-resilient agriculture gardens at Dechencholing, Taba and Samteling to provide products for consumption and sale; and iii) the installation of rainwater harvesting technologies to improve sanitation and urban agriculture. The strengthening of urban agriculture groups and subsequent training on business/financial management will enhance the livelihoods of urban farmers in Thimphu. In addition, urban agriculture groups will receive equipment and agriculture inputs, which will increase farming productivity, thereby strengthening local livelihoods.
- In Kep, the adoption of rainwater harvesting techniques and the installation of improved water storage facilities will increase water availability for local communities in Kep City. This increased water availability will benefit local communities undertaking both household and agricultural activities. Watershed management interventions – such as reforestation and the restoration of wetlands and mangroves – will reduce soil erosion, support increased agricultural productivity and limit infrastructure damage from flooding. In addition, urban agriculture activities – such as the establishment of demonstration facilities and the provision of agricultural inputs<sup>22</sup> – will support the development of alternative livelihoods, with a strong focus on women’s groups. Through these alternative livelihoods, local communities will be able to diversify their income streams, thereby increasing their adaptive capacity.
- In Phongsaly, the LDCF project will implement EbA interventions to increase the availability of water. The proposed interventions will include watershed restoration using climate-resilient species of trees. Flood-resilient species will be used in the restoration of riparian areas. The restoration of watershed areas will increase the infiltration of rainwater and groundwater recharge, as well as increase the available supply of water. In addition, medium- and long-term planning will take into account both climate change and urban development considerations and culminate in the development of management plans for the protection of watershed areas. The management plans will adopt an EbA approach ensuring the long-term conservation of watershed areas under changing climatic conditions. The management plans will be informed by the vulnerability mapping and livelihood reports.
- In Oudomxay, EbA interventions will be implemented to improve ecosystem services and livelihoods of local communities within the proposed Phu Hee Phi National Biodiversity Conservation Area and surrounding area. The adoption of an EbA approach and the implementation of watershed restoration measures will support the development of alternative livelihoods. Additional income streams will be developed through the establishment of nurseries for the supply of climate-resilient and multi-beneficial tree species and the promotion of ecotourism initiatives. The potential benefits of ecosystem restoration will be identified through vulnerability mapping, which will include socio-economic research focusing on vulnerable groups, as well as climate modelling. Furthermore, the results of these assessments and mapping will inform the development of management plans taking into account climate change considerations as well as socio-economic development considerations
- In Mandalay, the project’s proposed interventions will include the: i) restoration of wetlands; ii) promotion of climate-resilient and organic farming; and iii) the implementation of urban forestry using tree species that are drought- and flood-tolerant and provide multiple benefits. These interventions will result in enhanced ecosystem processes in Taun Tha Man Lake, such as improved air purification, increased infiltration of rainwater and increased groundwater recharge. Through improved ecosystem services, the livelihoods of local communities in Taun Tha Man Lake will be

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<sup>22</sup> For example, drought-tolerant seeds and hybrid species.

strengthened, particularly through increased agricultural productivity. Furthermore, the preparation and adoption of management plans for Taun Tha Man Lake will ensure that climate change considerations are integrated into development activities, thereby ensuring that the livelihoods of local communities will be strengthened in the long term.

The project's on-the-ground interventions will be undertaken at specific sites within each selected city. Despite the relatively localized nature of these urban EbA interventions, each site has strong links with neighbouring ecosystems and communities. Therefore, the socioeconomic benefits of some of the project's on-the-ground interventions will accrue at a national level. For example, the localized reforestation activities in Mandalay will reduce air pollution and enhance groundwater recharge. At a national level in Myanmar, the benefits from localized reforestation in Mandalay will be *inter alia*: i) reduced susceptibility of the population to respiratory illnesses; and ii) increased water availability for agriculture and household use.

In addition to on-the-ground interventions, project activities will: i) increase awareness of urban EbA; and ii) enhance technical and institutional capacity to design and implement urban EbA interventions at a national level. For example, these activities will include *inter alia*: i) developing and disseminating policy briefs on best-practice adaptation in an urban context; ii) designing decision-making tools to integrate EbA into urban planning; and iii) sharing project outputs and lessons through public awareness programmes and local, national and regional platforms. As a result of increased awareness of urban EbA and enhanced technical and institutional capacity to design and implement urban EbA activities at a national level, project activities can be upscaled and included in future, nationally implemented initiatives. Therefore, it is expected that the socio-economic benefits accruing at a local level during the implementation (see above), will accrue at a national level in the medium to long term.

**A.8 Knowledge Management.** Elaborate on the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user-friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

The project design includes several activities to promote knowledge management within a number of stakeholder groups:

- To assist national policymakers to incorporate urban EbA into development plans and strategies, project activities will include the development and dissemination of policy briefs<sup>23</sup>. These policy briefs will provide practical guidance on how best-practice adaptation in an urban context can be promoted through an enabling policy framework.
- To assist technical staff and planners in national ministries to incorporate climate change adaptation considerations into development plans, project activities will include the production of decision-making tools that combine climate science with urban adaptation. To support implementation, these decision-making tools will be tailored to local contexts and technical staff and planners in national ministries will be trained on their use.
- At a regional level, government stakeholders and practitioners will engage in a knowledge-sharing event, in which lessons learned from the project and the results of cost-benefit analyses on adaptation techniques undertaken in the Asia-Pacific region. Furthermore, project results will be shared through regional knowledge-sharing platforms such as APAN and ACCCRN.
- To ensure that knowledge on the benefits of urban EbA is communicated to local communities within selected cities, project activities will include the sharing tailored information through a number of media, including *inter alia*: i) radio; ii) television; iii) pamphlets; iv) sign-boards; and v) public events.
- Through collaborations between researchers, scientists and academic staff, long-term research programmes will be designed and implemented in national research institutions. Within each research programme, hypotheses will be proposed and baseline data collected. Over time – and beyond the implementation period – data will be collected and

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<sup>23</sup> The policy briefs will be focused on the effectiveness of urban EbA interventions, based on the results of cost-benefit analyses on adaptation interventions in the Asia-Pacific region.

compared with baseline values to determine the effectiveness of urban EbA interventions. Knowledge produced through this research will be shared through peer-reviewed publications and other academic platforms.

## **B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

**B.1 Consistency with National Priorities.** Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.:

- In Bhutan, the project is consistent with the RGoB's policies, priorities and plans that focuses on adaptation to climate change, which includes the NAPA, National Communication documents, National Environment Act, National Forest Act and Nature Conservation Act. In addition, the project is in alignment with the RGoB's 11th five year plan, which focuses on enhancing the resilience of communities towards the impacts of climate change and will contribute towards its natural resources conservation and poverty alleviation goals. The project is also in alignment with the priorities of NAPA II because it aims to improve: i) food security (Priority 1); ii) landslide and flood prevention (Priority 4); iii) flood protection (Priority 5); iv) rain water harvesting (Priority 6); and v) community-based management (Priority 9).
- In Cambodia, the implementation of the LDCF project and EbA in particular is in alignment with several national plans and priorities. These plans and policies exhibit Cambodia's international commitment to sustainable development, which will be enhanced through the implementation of EbA. In addition to the multi-lateral environmental agreements to which Cambodia is a signatory, the project is in alignment with certain priorities of the Rectangular Strategy (2014-2018), including: i) enhancement of agricultural sector; ii) capacity building and human resource development; and iii) further rehabilitation and construction of physical infrastructure. In particular, the project will contribute towards the sustainable management of natural resources, intensifying efforts to reduce the impacts of climate change by strengthening adaptation capacity and resilience to climate change. Furthermore, the project is in alignment with the: i) National Strategic Development Plan (2014-2018) which seeks to mainstream climate change into national, sub-national and sectoral policies and build capacity of government bodies in addressing climate change impacts; ii) National Policy on Green Development and the National Strategic Plan on Green Development (2013-2030) which focus primarily on low carbon development strategies for sustainable economic development; and iii) Cambodia's Climate Change Strategic Plan (2014-2023) which is a comprehensive climate change action plan. The project is also in alignment with several of the priorities of the NAPA, specifically: i) community and household water supply in Coastal Provinces; ii) development and rehabilitation of flood protection dikes; iii) vegetation planting for flood and windstorm protection; iv) development and improvement of small-scale aquaculture ponds; v) promotion of household integrated farming; vi) rehabilitation of coastal protection infrastructure; and vii) community mangrove restoration and sustainable use of natural resources.
- In Lao PDR, the project is consistent with the GoL's policies, plans and priorities which focus on addressing climate change. These policies and plans include the National Adaptation Programme of Action, United Nations Development Assistance Framework, Initial and Second National Communications, National Strategy on Climate Change and the supporting Action Plan, National Environmental Strategy to the year 2020 and the National Environmental Action Plan. In addition to the above, the LDCF project is also in alignment with several development policies, including the National Growth and Poverty Eradication Strategy and the 7<sup>th</sup> National Socio-Economic Development Plan – the overall objective of which is to prioritise both economic development and poverty reduction in the national response to the impacts of climate change. Regarding the NAPA priorities, the project is in alignment with the following: i) promoting secondary professions in order to improve the livelihoods of farmers affected by natural disasters induced by climate change; ii) strengthening the capacity of village forestry volunteers in forest planting, caring and management techniques as well as the use of village forests; iii) awareness raising on water and water resource management; and v) improve systems for the sustainable use of drinking water and sanitation with community participation in flood and drought prone areas.
- In Myanmar, the LDCF project interventions will promote sustainable development and will assist the country to achieve its national priorities and plans. Myanmar has signed and ratified several Multilateral Environmental Agreements, including: i) UNFCCC; ii) HFA; iii) CBD; iv) UNCCD; v) MDGs and; vi) the Ramsar Convention. The LDCF project will engage with and use various global and regional strategies and guiding documents for least developed countries (including NAPs). This will ensure alignment of the LDCF activities with future long-term global

and regional frameworks and related national policies. At a national level, in particular, the LDCF project will promote sustainable development and will contribute to the achievement of national priorities. Furthermore, the LDCF project is designed to strengthen environmental management frameworks by capacitating government technical staff, policy-makers, restoration practitioners and scientists to address environmental issues arising in conjunction with the changing climate. The LDCF project is aligned with the following national policy documents, such as: i) NAPA; ii) Initial National Communications; iii) Poverty Reduction Strategy; iv) NBSAP; v) national reports under the UNCCD; and vi) disaster reduction strategies. In addition, the LDCF project interventions will contribute to the achievement of high and moderate priority climate change objectives set out in the draft National Climate Change Strategy under the MCCA.

### C. DESCRIBE THE BUDGETED M & E PLAN:

The budgeted M&E plan is presented in the table below.

Type of M&E activity	Responsible Parties	Budget US\$ (Excluding project team staff time)	Time frame
<b>Inception workshop and report</b>	<ul style="list-style-type: none"> <li>National Technical Experts (NTEs) including the main Technical Expert and his/her assistant</li> <li>Regional Technical Expert (RTE)</li> <li>M&amp;E expert</li> <li>UNEP TM</li> </ul>	Indicative cost: US\$12,000	Within the first two months of project start up. A regional inception workshop and launch will be held followed by a national workshop.
<b>Baseline Study</b>	<ul style="list-style-type: none"> <li>NTEs</li> <li>RTE</li> <li>M&amp;E expert</li> <li>UNEP TM</li> </ul>	Indicative cost: US\$20,000	Within the first six months of project start up.
<b>Measurement of means of verification of project results</b>	<ul style="list-style-type: none"> <li>NTEs</li> <li>RTE</li> <li>M&amp;E expert</li> <li>UNEP TM</li> </ul>	To be finalised at Inception Workshop. This includes hiring of specific studies and institutions, and delegate responsibilities to relevant team members.	Start, mid and end of project (during evaluation cycle) and annually when required.
<b>Measurement of means of verification for project progress on output and implementation</b>	<ul style="list-style-type: none"> <li>NTEs</li> <li>RTE</li> <li>M&amp;E expert</li> <li>UNEP TM</li> </ul>	To be determined as part of the AWP's preparation.	Annually prior to PIR and to the definition of annual work plans.
<b>Project Steering Committee meetings</b>	<ul style="list-style-type: none"> <li>NTEs</li> <li>RTE</li> <li>M&amp;E expert</li> <li>UNEP TM</li> <li>PSC</li> </ul>	Annual Project Steering Committee meetings: US\$7,500 per meeting.	Annually

Type of M&E activity	Responsible Parties	Budget US\$ (Excluding project team staff time)	Time frame
<b>PIR</b>	<ul style="list-style-type: none"> <li>• NTEs</li> <li>• RTE</li> <li>• M&amp;E expert</li> <li>• UNEP TM</li> <li>• UNEP FMO (Fund Management Officer)</li> </ul>	Financial audit records to be provided for PSC review. Indicative cost: US\$5,000 per audit.	Annually
<b>Periodic status/ progress reports</b>	<ul style="list-style-type: none"> <li>• NTEs</li> <li>• RTE</li> <li>• M&amp;E Expert</li> <li>• UNEP TM</li> </ul>	None	Quarterly
<b>Independent mid-term evaluation/review (MTE/MTR)</b>	<ul style="list-style-type: none"> <li>• UNEP TM</li> <li>• UNEP Evaluation Office of UNEP</li> <li>• RTE</li> <li>• NTEs</li> <li>• M&amp;E expert</li> </ul>	Indicative cost: US\$ 40,000	At the mid-point of project implementation.
<b>Terminal Evaluation (TE)</b>	<ul style="list-style-type: none"> <li>• Evaluation Office of UNEP</li> </ul>	Indicative cost: US\$ 60,000	At least three months before the end of project implementation.
<b>Project terminal report</b>	<ul style="list-style-type: none"> <li>• NTEs</li> <li>• RTE</li> <li>• M&amp;E expert</li> <li>• UNEP TM</li> <li>• UNEP FMO</li> </ul>	None	On completion of the terminal evaluation.
<b>Visits to pilot intervention sites</b>	<ul style="list-style-type: none"> <li>• UNEP TM</li> <li>•</li> </ul>	For GEF supported projects, paid from IA fees and operational budget	Annually
<b>Consultants</b>	<ul style="list-style-type: none"> <li>• M&amp;E expert</li> </ul>	Indicative cost: US\$ 36,000	Over the lifetime of the project
<b>TOTAL indicative cost</b> Excluding project team staff time and UNEP staff and travel expenses			Estimated to cost US\$218,000

**PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)**

**A. GEF Agency(ies) certification**

**This request has been prepared in accordance with GEF policies<sup>24</sup> and procedures and meets the GEF criteria for CEO endorsement under GEF-6.**

<b>Agency Coordinator, Agency Name</b>	<b>Signature</b>	<b>Date (MM/dd/yyyy)</b>	<b>Project Contact Person</b>	<b>Telephone</b>	<b>Email Address</b>
Brennan Van Dyke Director, GEF Coordination Office, UNEP		November 23, 2016	Atifa Kassam  Task Manager  GEF Climate Change Adaptation Unit	(+254) 20-762-3507	Atifa.Kassam@unep.org

<sup>24</sup> GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF  
GEF6 CEO Endorsement /Approval Template-Sept2015

## ANNEXES

### ANNEX A: PROJECT RESULTS FRAMEWORK

Objective/outcome	Indicators	Baseline	Target	Means of Verification	Assumptions/risks
To reduce the vulnerability of poor urban communities in Asia-Pacific LDCs to climate change impacts using Ecosystem-based Adaptation (EbA)					
<u>Outcome 1</u> Technical and institutional capacity of city management authorities to integrate urban EbA into development planning strengthened.	Institutional capacity score of city authorities in Thimphu, Kep, Pongsaly and Mandalay to effectively identify, prioritize, implement, monitor and evaluate EbA in urban areas <sup>25</sup> .	Baseline values will be determined during the baseline assessment.	By project completion, city authorities (in 4 institutions) have achieved an increase in capacity score by at least 2 steps.	Surveys with city authorities during the Baseline Assessment and Terminal Evaluation. An assessment of capacity will be done using the criteria (aligned with the GEF AMAT indicators) <sup>26</sup>	(A) There is political will and availability to initiate such actions.
<u>Outcome 2</u> EbA demonstrated in pilot cities to reduce the vulnerability of poor, urban communities.	Investments in EbA made in specific areas per city to reduce vulnerability of poor urban communities	0	By project completion: 8 areas (2 areas per city)	GPS mapping during project implementation, site visit, and site implementation reports produced by the relevant implementing organisation at each project intervention site.	(A) The urban ecosystems are in a state that can be recuperated and will function appropriately after rehabilitation under appropriate management. (A) Benefits from EbA – including cost-effectiveness – are clearly demonstrated during the project lifespan.

<sup>25</sup> Using indicator 10 of the tracking tool provided in the Global Environment Facility (GEF)/LDCF Updated Results-based Management (RBM) Framework for Adaptation to Climate Change.

<sup>26</sup> Criteria to be used in the assessment include: (a) Does the institution have access to and does it make use of climate information in decision-making?

(b) Are climate change risks as well as appropriate adaptation strategies and measures integrated into relevant institutional policies, processes and procedures?

(c) Does the institution have adequate resources to implement such policies, processes and procedures?

(d) Are there clear roles and responsibilities within the institution, and effective partnerships outside the institution to address adaptation?

(e) Is the institution equipped to monitor, evaluate and learn from its adaptation actions?

The following scoring scale will be used:

1 = Very limited or no evidence of capacity

2 = Partially developed capacity

3 = Fully developed, demonstrated capacity

An overall score is calculated, with a maximum score of 12 given for the four criteria.

These criteria will be further validated at inception phase.

GEF6 CEO Endorsement /Approval Template-Sept2015

Objective/outcome	Indicators	Baseline	Target	Means of Verification	Assumptions/risks
					(A) Urban development does not undermine project activities.
	Number of beneficiaries from urban EbA interventions in Bhutan, Cambodia, Lao PDR and Myanmar (and percentage of which are women)	0	1920 households benefitting from diversified livelihoods in the project (of which at least 50% are women). The number of people that will benefit from the project will be validated during year one of project implementation.	Workshop/training reports, registers of community beneficiaries kept by the organisations implementing urban EbA interventions at each project site, and household surveys.	(A) The interventions will be sufficient to reduce sensitivity and increase adaptive capacity. (A) Political instability in the pilot countries will not result in delays in project implementation.
<u>Outcome 3</u> Knowledge base for supporting the design of urban EbA interventions strengthened, and public awareness of the positive potential of urban EbA interventions to reduce vulnerability to climate change impacts increased.	Percentage of community members at project intervention sites that are aware of climate change and urban EbA interventions (of which are women).	To be determined during inception through a baseline assessment	By project completion, at least 50% (per sample) of the community members at each project intervention sites – approx. 960 people are aware of climate change and urban EbA interventions (with at least 50% being female.)	Reports on awareness-raising campaigns. Household surveys.	(A) City authorities will apply methods learned during training sessions.
	Number of city authorities in Bhutan, Cambodia, Lao PDR and Myanmar using local, national and regional platforms to access information on EbA that is collated, generated and disseminated through the LDCF project.	0	By project completion, at least 40 (10 in each country).	Interviews/communication with city authorities that have been targeted by the LDCF project during TE.	(A) City authorities will apply methods learned during training sessions.

**ANNEX B: RESPONSES TO PROJECT REVIEWS** (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

GEF Secretariat Review Question	GEF Secretariat Recommended Action by CEO Endorsement	Response
7. Are the components, outcomes and outputs in the project framework (Table B) clear, sound and appropriately detailed?	<p>Yes. The project will integrate ecosystems-based climate change adaptation measures within the baseline project activities. The LDCF project will synthesize knowledge on urban EbA to guide interventions, train city authorities on EbA, and apply decision-making tools to help guide EbA design. It will also support city-specific EbA pilot actions, support alternative livelihoods for the urban poor, set up a long-term research program on urban EbA, and share lessons emerging from the project nationally and regionally.</p> <p>By CEO Endorsement: Please consider, during project preparation, upcoming major initiatives planned for each pilot city that could have a bearing on LDCF project design and activity selection (e.g., major investments/plans in transport, industry, wastewater treatment, etc.). If it is possible to plan/design EbA measures within their context, the actions could be particularly relevant/beneficial.</p>	<p>The Risk Analysis table in Section 3.5 of the Project Document and Section A.5 of the CEO Endorsement outlines the potential risks during project implementation and countermeasures to be implemented. To respond to the risk of large-scale development of infrastructure, national coordinators of the LDCF project will collaborate with relevant agencies to ensure appropriate coordination between all ongoing projects in the intervention sites (already identified as partner and baseline projects) as well as to take into account urban development plans before embarking on any activities. In addition, EbA will be promoted as a cost-effective and sustainable approach to adaptation to be integrated into city planning and development.</p>
10. Is the role of public participation, including CSOs, and indigenous peoples where relevant, identified and explicit means for their engagement explained?	<p>Yes for PIF stage. The project will employ a consultative and participatory approach, and will validate all key processes with stakeholders. Stakeholder discussions will be held, active partnerships with NGOs forged at local and national levels, and private sector partnerships sought. Research institutions will also be engaged.</p> <p>By CEO Endorsement: Gender equality is an increasingly important aspect of GEF's portfolio. If women are particularly vulnerable to climate change in the pilot urban communities, please discuss at CEO Endorsement how the project will address their particular adaptation needs.</p>	<p>The proposed urban EbA interventions will be gender sensitive and include gender disaggregated indicators and targets to monitor gender equity throughout the project. Moreover, the LDCF project activities will be informed by socio-economic assessments under Output 2.1 that will include gender analysis to assess the different adaptation needs of women based on their socio-economic roles in the community (please see Section 3.1 of the Project Document, and Section A.4 and Annex A of the CEO Endorsement).</p>
12. Is the <b>project consistent and properly coordinated</b> with other related initiatives in the country or in the region?	<p>Yes for PIF stage. Coordination with partners and activities of ongoing initiatives in the countries and region has been proposed. These include a wide range of programs and projects on climate change adaptation and ecosystems-based adaptation funded/implemented by SEA START, ACCCRN, UN-HABITAT CCCL, BMU,</p>	<p>Section 2.7 of the Project Document outlines relevant global, regional and country initiatives and details how the LDCF project will build on and coordinate with these initiatives. Synergies between these projects and the LDCF project are also described in this section.</p>

GEF Secretariat Review Question	GEF Secretariat Recommended Action by CEO Endorsement	Response
	<p>AF, LDCF, SCCF, APAN, ICLEI, and others.</p> <p>By CEO Endorsement: Please provide further information on the nature of the coordination of the proposed LDCF project with some of the salient country and regional initiatives identified.</p>	

US Council member comments/ questions		
<p>In the full proposal, provide more information on how the program plans to promote coordination between national and local governments throughout the region. While we appreciate the strategy of targeting pilot cities, we also believe that it is necessary to have proper coordination between the national -level governments of the project countries as well. This level of coordination will ensure that both the challenges associated with implementation of urban EbA as well as the benefits will be communicated throughout the region.</p>	<p>The project steering committee meetings will be organised yearly at the regional scale (one different country every year). The country representatives will include both national (representative of EAs and academia) and local government representatives (NTEs and baseline projects). This will ensure communication and knowledge sharing between countries. Additionally, the technical committee that will meet once or twice a year in each country respectively will group government and non-government representatives at both national and local levels (i.e. NTEs, academics, representatives from local and international NGOs, CBOs, representatives from local and national government authorities, national experts, managers of the baseline projects and representatives of other aligned projects). This will promote coordination between and within the targeted countries.</p>	
<p>In the full proposal, provide more information on the process of upscaling the use of urban EbA interventions from pilot cities to other cities within the Asia-Pacific region.</p>	<p>Under Component 3 of the LDCF project, national upscaling strategies, including sustainable financing mechanisms, will be developed to catalyse financial resources to sustain, replicate and upscale the EbA interventions across the four countries and elsewhere in the Asia-Pacific region. The upscaling strategy will be supported through: i) the decision-support tools developed under Component 1; ii) the vulnerability maps developed under Component 2; and iii) information sharing on lessons learned as well as benefits accrued on urban EbA under Component 3 (see Sections 3.3 and 3.8 of the Project Document, and Sections A.1.3 and A.1.6 of the CEO Endorsement). The lessons learned and information shared through various regional networks such as APAN and ACCCRN will catalyse the upscaling of urban EbA in other cities within Asia-Pacific.</p>	
<p>In the full proposal, provide more information on how beneficiaries , including women, have been involved in the development of the project proposal and will benefit from this project</p>	<p>Local communities, including women have been consulted during the PPG phase of the project please refer to Section A.3 in the CEO endorsement for more information. The LDCF project aims to target poor urban communities, particularly women whose vulnerability will be increased by the predicted effects of climate change. The project will give preference to female-headed households and tailor interventions that meet the needs of women to increase their well-being. Gender disaggregated targets and indicators to monitor progress throughout the project are included in the Results Framework of the project (see Appendix 4).</p> <p>In Bhutan, “Self-Help Groups” such as “women’s vegetable groups” will be involved in the implementation and maintenance of the activities. In Myanmar, at the commune level Commune Committees for Women and Children will be actively involved in the implementation and maintenance of EbA interventions. Similarly at the commune/Sankgat level in Cambodia, beneficiaries – particularly women – will participate in urban agriculture initiatives which will contribute towards social cohesion (please see Section 3.8 in the Project Document and Section A.1.6 of the CEO Endorsement).</p>	

<p>In the full proposal, provide more information on how the project will engage local stakeholders, including community-based organization and environmental NGOs in both the development and implementation of the program</p>	<p>During the PPG phase, inception workshops were held in each pilot city that included participation of all relevant stakeholders including community based organisations and NGOs to provide input in the design and development of the project (please refer to Section A.3 of CEO endorsement). This inception workshop was complemented with individual consultations. At project inception, these stakeholders will continue to be involved in project implementation to: i) promote ownership of the project by the government and local communities; and ii) coordinate and align the LDCF project with relevant projects of other NGOs (please see Section 2.5 of the Project Document).</p>
<p>Ensure both vertical and horizontal coordination between ministries at the national level and local level</p>	<p>Please see response to Comment A.</p> <p>Horizontal coordination at the regional level will be further promoted by updating the following knowledge sharing platforms – including Asian Cities Climate Change Resilient Network and Asian Pacific Adaptation Network – to communicate on the project activities and results. This will be done under Output 3.3 (please see Section 3.3 of the Project Document and Section A.1.4 of the CEO Endorsement).</p>

STAP Comments	
<p>1. While the PIF does identify the main problem (page 5), the key point is that in many rapidly urbanizing developing country cities, conventional approaches for climate resilience that rely on civil infrastructure and purely structural responses may not be feasible given costs and the rapidly changing pattern of urbanization. The value proposition of urban EbA needs to be established keeping in view these contextual factors. Consequently, STAP recommends providing a more nuanced evaluation of the costs and benefits of EbA in the countries included. While EbA can be an effective approach to adaptation, it is not a panacea.</p>	<p>Section 7.3 of the Project Document outlines the cost-effectiveness of adopting an urban EbA approach in comparison to adopting other adaptation mechanisms, making it more accessible to poor, urban communities throughout the Asia-Pacific region. Additionally, where required by the countries, hard infrastructure will be built together with EbA interventions to reduce the vulnerability of local communities to the effects of climate change (i.e. rainwater harvesting equipment, permeable pavement, dykes). This combination of hard and soft interventions is effective because: i) soft interventions are more flexible in the long-term; and ii) hard infrastructure has benefits that are more direct in the short to medium term. Enhancing ecosystem functioning can be regarded as a long-term investment that provides a wide range of sustainable environmental, social and financial benefits. EbA will also be complemented by additional support measures for strengthening the adaptive capacity of local communities. This complementary approach therefore contributes to the cost-effectiveness of the project.</p>
<p>2. STAP also recommends the PIF provide information on how outputs will be accomplished, including (but not limited to): how and who will decide that a specific EbA is appropriate, how will the costs and benefits of EbA be determined, how the performance of EbA interventions be assessed, and how sustainability will be determined. The criteria for selecting pilot cities are listed, but it would be helpful, for example, to understand how vulnerability would be assessed. Further, the relevance of some of the urban "EbA" options listed for climate resilience may be better established. For example, the relevance of "urban agriculture" as an EbA option for climate resilience is not very clear.</p>	<p>The interventions integrated in the Project Document were identified by a national expert through consultation with relevant national authorities. The costs of the interventions were also determined based on the experience of the national stakeholders in other projects. Additionally, the targeted cities were selected by the countries during multi-stakeholders workshops based on a set of criteria that were validated by local stakeholders, namely: i) climate change vulnerability; ii) socio-economic vulnerability, taking into account population, density, land area, livelihoods and basic services; iii) availability of baseline projects; iv) potential for EbA interventions; v) commitment of city authorities to implement EbA interventions; and vi) barriers to and opportunities presented by implementing EbA interventions (please see Section 2.5 of the Project Document and Section A.3 of the CEO Endorsement).</p> <p>A research framework will be established under Output 2.4 to assess the societal, economic and ecological benefits of urban EbA in pilot cities (please Section 3.3 of the Project Document and Section A.1.4 of the CEO Endorsement). This research framework will be maintained beyond the project lifespan by embedding it into national research institutions through the development of MoUs defining the role of each institution in the</p>

	<p>implementation of the research activities. As a result, the benefits of the EbA interventions of the LDCF project will be monitored in the long term.</p> <p>The EbA interventions to be implemented have been further defined (please Section 3.3 of the Project Document). As a result of the rapid urbanisation rate, the majority of the communities living in new and informal settlements – which are the most vulnerable – still practice subsistence agriculture on the edge of the city. As a result, the countries have identified promoting climate-resilient agriculture and diversifying livelihood options as priority interventions for the project.</p>
<p>3. While the PIF (rightly) emphasizes barriers, it is also possible that there could be on-going inadvertent EbA "experiments" that could be validated by the current project.</p>	<p>The set of assessments to be undertaken under Output 2.1 (i.e. socio-economic, ecosystem, adaptation needs) in each intervention site prior to the implementation of on-the-ground interventions will investigate the effects of every type of intervention relevant for the project activities (e.g. ad-hoc tree planting activities, improved agriculture, water management systems) that have been previously implemented or are currently under implementation. This will enable the integration of the successes, failures and lessons learned from previous initiatives into the design and implementation of the project interventions.</p>
<p>4. The footnote on page 8 states the limited budget means that only cities with populations of less than 2.5 million could be included, but not the reasoning behind this.</p>	<p>Initially, big cities like Bangkok and Hanoi were considered as potential pilot cities for the project. During the PIF development process, consultations were undertaken with multiple stakeholders including UN-Habitat. They pointed out that regarding our limited budget it would be wise to focus the project on small cities with less than 5 million inhabitants. Their argument was that in bigger cities, it would be difficult to have a tangible impact to demonstrate EbA with the budget available. As a result of this comment and further consultations, it was decided to focus on peri-urban areas in small cities of less than 2.5 million inhabitants.</p>
<p>5. It would be helpful to understand how stakeholders will be selected and how they will be engaged through the project. Further, it would be helpful to have a list of the major stakeholders who would be included.</p>	<p>Inception and validation workshops were held during the PPG Phase in each of the pilot cities at which all relevant stakeholders participated and provided their input into the design and development of the project. These workshops were complemented with individual consultations. The list of stakeholders to be consulted throughout the implementation phase of the project is provided in the Project Document (please see Section 2.5 and Section A.3 of the CEO Endorsement). At project inception, these stakeholders will continue to be involved in project implementation to: i) promote ownership of the project by the government and local communities; and ii) coordinate and align the LDCF project with relevant projects of other NGOs (please see Section 2.5 of the Project Document and Section A.3 of the CEO Endorsement).</p>
<p>6. The PIF needs to be clarified as to how information on EbA design and implementation will be disseminated throughout the region. Given the long list of possible activities, it is possible that each city will chose a different set of activities, with minimal overlap across the countries. It is unclear what this would mean for determining lessons learned and best practices.</p>	<p>Section 3 of the Project Document outlines how information on adaptation techniques that have been implemented in urban areas in the Asia-Pacific region will be collated and analysed (under Component 1). The purpose being to identify the most cost-effective interventions for implementation in the pilot countries. Policy briefs on the best adaptation practices will be developed and disseminated to the government stakeholders and practitioners. The specific interventions to be adopted in each country will be validated based upon the results of the vulnerability mapping and adaptation reports. Technical guidelines will be prepared for planning, implementing, monitoring and maintaining the urban EbA interventions, and distributed to government authorities, urban communities and private sector. In addition, the activities, methods and results of the long-term research programmes (Component 2) on the societal, economic and ecological benefits of the interventions will be shared through publications and other academic platforms beyond the project lifespan. Last, a monitoring framework will be developed and implemented (under Component 3) with targeted urban communities. The objective of this monitoring framework will be to measure the performance of interventions during the project's lifespan. The results from these monitoring activities will be collated into city-specific reports and</p>

	<p>shared through the public awareness programmes as well as local, national and regional platforms.</p> <p>The targeted countries selected activities that have major overlap (e.g. soil fixation with climate-resilient tree species, rainwater harvesting, wetland rehabilitation, climate-resilient agriculture, agroforestry). This will enable the comparison of the success of the interventions in different contexts. This information will be shared at the regional scale. The scale to which each intervention will be shared will be determined based on their site-specificity.</p>
<p>7. The PIF is inconsistent on the extent of experience with EbA in urban areas, with some statements indicating it is effective in urban and rural settings and other statements saying that effectiveness has primarily been demonstrated in rural regions. If the later is the case, then it would be helpful for the PIF to make the case of why it would be reasonable to expect the activities to be effective in the chosen cities. In particular, this also makes it attractive for the project to include aspects related to experimental design “ if evidence for effectiveness and performance can be generated, the benefits would go beyond this particular project.</p>	<p>As previously discussed, Section 7.3 of the Project Document outlines the cost-effectiveness of adopting an urban EbA approach. A growing body of scientific research indicates that increasing numbers of EbA projects will deliver favourable cost-benefit ratios. Additionally, the socio-economic, global environmental and adaptation benefits of the project in the short and long term are discussed in Section A.7 of the CEO Endorsement.</p>
<p>8. STAP suggests the PIF include consideration of the effectiveness of the likely EbA interventions to additional climate change in the four countries, as well as to include consideration of how different development pathways (including trends in poverty, education, human health, energy needs, etc.) could alter vulnerabilities and effectiveness as they relate to the outputs. STAP suggests considering using the Shared Socioeconomic Pathways being developed as part of the new climate change scenario process as they describe a range of possible development pathways, including qualitative descriptions and quantitative variables such as demographic growth, education, and GDP <a href="http://www2.cgd.ucar.edu/research/iconics">http://www2.cgd.ucar.edu/research/iconics</a></p>	<p>An integrated approach will be used to update the climate models under Output 2.1 Activity 2.1.1 of the project. We take note of your suggestion and the approach used in the project will also include the consideration of Shared Socio Economic Pathway as suggested (please see Section 3.3 of the Project Document and Section A.1.3 of the CEO Endorsement).</p>
<p>9. Component 2 states interventions will be cost-effective and sustainable. STAP recommends providing the criteria that will be used and the process by which those determinations will be made. Similarly, Component 3 states investments will be sustainable; the criteria and process also would be helpful to understand.</p>	<p>Please see Response to Comment 1 on cost-effectiveness.</p> <p>The sustainability of the project outputs will be supported by: i) active participation of all relevant stakeholders in the decision-making and implementation of the project activities; ii) strengthened institutional and technical capacity of national and local government to monitor the EbA interventions and maintain the benefits of the interventions; iii) increased public awareness of the benefits of urban EbA to support and maintain the activities beyond the project lifespan; and iv) collection, analysis and dissemination of the results generated through the long-term research programme on urban EbA interventions (please see Section 3.8 of the Project Document and Section A.1.6 of the CEO Endorsement.</p>
<p>10. Page 12 says that climate-resilient plants and trees will be planted, but without indicating how that will be assessed for each pilot region, for today and over coming decades with climate change.</p>	<p>The predicted effects of climate-change based on the climate scenario available will be used for the selection of the species to be used under the planting interventions of the project. In the intervention sites, droughts and floods are expected to be more frequent and intense in the future. For example, the species to be planted will be able to cope with being submerged</p>

	for a couple of days in areas expected to be increasingly flood prone and/or to have a deep and/or ramified root system to resist water flows during intense rains. In areas expected to be increasingly affected by droughts, the selected species will be able to withstand extended periods of droughts. The expected effects of climate change specific to each site will be determined under Output 2.1 of the project.
11. STAP appreciates the information on the wide range of activities in the Asia Pacific region, but it would be helpful to understand how the proposed project will ensure coordination and collaboration with these.	The list of baseline and partner projects was refined and the synergies between the LDCF project and these projects was further explained (please see Sections 2.6 and 2.7 of the Project Document).
12. STAP appreciates the statement that the project will ensure representation of women and other vulnerable groups. STAP hopes the gender aspects will be further developed and specified in the full proposal.	Section 3 of the Project Document outlines the LDCF project's approach to Gender equality. The project will target poor urban communities, particularly women whose vulnerability will be increased by the predicted effects of climate change. Preference will therefore be given to female-headed households and interventions will be tailored to meet the needs of these women to increase their well-being. Gender research undertaken through socio-economic assessments will inform the project activities, awareness campaigns and training materials. In addition, female representation will be encouraged in all aspects of the project, including the technical committees, training sessions and workshops, as well as the implementation of urban EbA activities and livelihood improvement activities. In addition, gender disaggregated indicators and targets for involving women are included in the Project Results Framework (Appendix 4 of the Project Document).
13. STAP recommends that project indicators be developed for the full proposal.	The Project Results Framework (Appendix 4 of the Project Document) provides detailed project targets and indicators.

**ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS<sup>27</sup>**

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

PPG Grant Approved at PIF: <b>150,000</b>			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
International Consultants	50,000	40,000	10,000
Regional Consultants	10,000	5,000	5,000
Travel	10,000	10,000	0
Meetings and Workshops	24,000	11,320	12,680
Agreements with countries for national consultations	55,000	52,000	3,000
Communications	1,000	1,000	
<b>Total</b>	<b>150,000</b>	<b>119,320</b>	<b>30,680</b>

<sup>27</sup> If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities. Agencies should also report closing of PPG to Trustee in its Quarterly Report.

**ANNEX D: CALENDAR OF EXPECTED REFLOWS (IF NON-GRANT INSTRUMENT IS USED)**

N/A

**ANNEX E: PROCUREMENT PLAN**

<b>National consultants</b>	<b>US\$/pers on month</b>	<b>Estimated person months</b>	<b>Tasks to be performed</b>	<b>Budget note</b>
National Technical Expert (NTE)	3,000	48	The NTE for Cambodia and Myanmar (similar experts will be appointed through in-kind co-financing in Bhutan and Laos) will: i) validate the EbA interventions and targeted communities selected during PPG phase using the vulnerability maps and reports developed in Output 2.1; ii) assist the RTE with developing technical guidelines on planning, implementing, monitoring and maintaining the validated EbA interventions; iii) train local communities and support government staff on applying the technical guidelines to implement the urban EbA interventions; iv) assist the RTE in implementing urban EbA interventions using technical guidelines; v) assist the Regional Technical Expert with implementing livelihood improvement plans by providing training and equipment; and vi) assist the RTE with collating and assessing information on: i) the effects of climate change on cities in Bhutan, Cambodia, Lao PDR and Myanmar; ii) best-practice EbA for the Asia-Pacific Region; and ii) lessons learned through implementing the LDCF project including the findings from Output 3.1.1.	4
Assistant National Technical Expert (ANTE)	1,200	48	The two ANTEs – one in Bhutan and one in Laos – will: i) assist the National Technical Expert and coordinate the project activities under Outcome 2, particularly the training activities; and ii) assist the National Technical Expert in overseeing the implementation of the livelihood plans as developed by the International Natural Resource Economist.	5
National Policy Expert (NPE)	3,000	10	Four NPEs – one in each country – will:	14

			<ul style="list-style-type: none"> <li>i) assist the RTE with developing policy briefs on the effectiveness of adaptation interventions in urban areas based on the cost-benefit analyses and information from relevant stakeholders;</li> <li>ii) assess the decision-making processes in each targeted country with regards to urban planning;</li> <li>iii) assist the RTE with designing tools for integrating EbA into urban development planning based on the particular decision-making process in each country; and</li> <li>iv) assist the RTE with developing national upscaling strategies (one strategy for each pilot country) for Urban EbA.</li> </ul>	
National Climate Modelling Expert (NCME)	3,000	3	The NCME will assist the International Climate Modelling Expert in developing short- to medium-term vulnerability maps for selected cities using the updated climate models and socio-economic research.	7
National Climate Expert (NCE)	3,000	10	The NCE will assist the RTE to: <ul style="list-style-type: none"> <li>i) develop training material to plan and monitor urban EbA; and</li> <li>ii) hold a Training-of-Trainers workshop for city authorities in the selected cities in Bhutan, Cambodia, Laos and Myanmar.</li> </ul>	8
National Socio-Economic and Gender Expert (NSE&GE)	2,500	3	The NSE&GE will undertake assessments to identify the risks and adaptation needs of urban communities to the effects of climate change.	18
National Biodiversity Expert (NBE)	2,500	3	The NBE will collect and update data and information on biodiversity and ecology for the urban EbA intervention areas in the pilot cities.	20
<b>International consultants</b>	<b>US US\$/ person month</b>	<b>Estimated person weeks</b>	<b>Tasks to be performed</b>	
Regional Technical Expert (RTE)	13,275	48	The RTE will work closely with the national consultants, national stakeholders and NGOs to: <ul style="list-style-type: none"> <li>i) undertake a stocktake of EbA techniques;</li> <li>ii) develop policy briefs and training material on planning and implementing EbA (Activities 1.1.2 and 1.2.1);</li> <li>iii) develop technical guidelines with the NTEs to plan and implement urban EbA interventions (Activity 2.2.2);</li> <li>iv) assist the NTEs with the implementation of urban EbA interventions and climate-resilient livelihood plans (Activity 2.2.4 and 2.3.3);</li> <li>v) develop a long-term research framework and MoUs in collaboration with national research institutions (Activity 2.4.1 and 2.4.2);</li> </ul>	1

			vi) assist the NTEs and the NCE with the development and implementation of a national public awareness-raising campaign (Activity 3.2.2); vii) responsible for updating relevant national and regional platforms on integrating urban EbA into city planning; and viii) develop national upscaling strategies in collaboration with the NPEs.	
International M&E Expert	4,000	12	The consultant will undertake the following M&E tasks: i) develop and implement a monitoring framework for EbA interventions; ii) assist in the baseline assessment; iii) support in the mid-term evaluation; and iv) support in the final evaluation.	40
International Natural Resource Economist (INRE)	6,000	11,5	The INRE will: i) undertake a stocktake on adaptation techniques that have been implemented in the Asia-Pacific region in urban areas (including cost-benefit analysis); ii) develop climate-resilient livelihood reports and plans to improve livelihoods of vulnerable, urban communities based on the reports on livelihoods; and iii) hold meetings with potential private sector partners and urban communities that are implementing livelihood improvement plans.	2
International Climate Modelling Expert (ICME)	6,000	6	The ICME will: i) develop updated climate models to inform vulnerability mapping of selected cities; ii) oversee the NCEs in developing vulnerability maps for the 4 cities; and iii) develop a report on adaptation needs for each city and the potential for services from urban ecosystems to contribute to meeting these needs.	6
International Communications Expert (ICE)	6,000	8	The ICE will: i) develop and implement awareness-raising programmes and tools (using information collected in Activity 3.1.2); and ii) assist the RTE and NTEs in updating relevant local, national and regional platforms to share knowledge on integrating urban EbA into city planning and management processes.	3
<b>Equipment and materials</b>	<b>Total</b>		<b>Notes</b>	<b>Budget note</b>
<b>Expendable equipment</b>				
Printing of training material, policy	50,000		Manuals, exercise books and maps to support the training-of-trainers sessions.	8, 9

briefs, reports and plans		Booklets for all relevant stakeholders on the proposed revisions to policy documents, livelihood reports and livelihood plans.	
Produce digital maps	80,000	High-resolution GIS maps	18
Research equipment for the four countries	76,000	GPS devices, cameras, species identification books, sampling material and apparatus to measure vegetation indices and water quality, field-work computers, digital cameras (US\$19,500 per country)	140
Office equipment	12,080	Stationery, office furniture, etc.	48
<b>Non-expendable equipment</b>			
Bhutan-Equipment and EbA interventions	505,000	Seedlings, containers, shading equipment, fencing material, construction material for nurseries, planting tools	26
Cambodia-Equipment and EbA interventions	500,000	Seedlings, containers, shading equipment, fencing material, construction material for nurseries, planting tools	27
Laos-Equipment and EbA interventions	468,000	Seedlings, containers, shading equipment, fencing material, construction material for nurseries, planting tools	28
Myanmar-Equipment and EbA interventions	330,000	Seedlings, containers, shading equipment, fencing material, construction material for nurseries, planting tools	29
Bhutan-climate-resilient livelihoods	199,096	Climate-resilient agricultural inputs, irrigation equipment, digging equipment and other tools for improved agricultural practices, equipment to collect, process and conserve NTFPs	33
Cambodia- climate-resilient livelihoods	191,000	Climate-resilient agricultural inputs, irrigation equipment, digging equipment and other tools for improved agricultural practices, equipment to collect, process and conserve NTFPs	34
Laos- climate-resilient livelihoods	295,000	Climate-resilient agricultural inputs, irrigation equipment, digging equipment and other tools for improved agricultural practices, equipment to collect, process and conserve NTFPs	35
Myanmar- climate-resilient livelihoods	406,000	Climate-resilient agricultural inputs, irrigation equipment, digging equipment and other tools for improved agricultural practices, equipment to collect, process and conserve NTFPs	36
Awareness raising activities Bhutan	35,000	Pamphlets, design materials, presentation materials, tv and radio time	44
Awareness raising activities Cambodia	35,000	Pamphlets, design materials, presentation materials, tv and radio time	44

Awareness raising activities Laos	35,000	Pamphlets, design materials, presentation materials, tv and radio time	44
Awareness raising activities Myanmar	35,000	Pamphlets, design materials, presentation materials, tv and radio time	44

## ANNEX F: DETAILED GEF BUDGET

### ANNEX F-1 - RECONCILIATION BETWEEN GEF ACTIVITY BASED BUDGET AND UNEP BUDGET LINE (GEF FUNDS ONLY US\$)

Project title:		ANNEX F-1 - RECONCILIATION BETWEEN GEF ACTIVITY BASED BUDGET AND UNEP BUDGET LINE (GEF FUNDS ONLY US\$)											Notes
Project number:													
Project executing partner:													
Project implementation period:		Expenditure by project component/activity						Expenditure by calendar year					
From:	2017	Outcome 1	Outcome 2	Outcome 3	PM	M&E	Total	Year 1	Year 2	Year 3	Year 4	Total	
To:	2021												
UNEP Budget Line													
<b>010</b>	<b>PERSONNEL COMPONENT</b>												
	<b>Project personnel</b>												
	1	172,575	165,938	245,588	53,100		637,200	159,300	159,300	159,300	159,300	637,200	1
	2		48,600	9,000			57,600	14,400	14,400	14,400	14,400	57,600	5
	3		127,500	16,500			144,000	36,000	36,000	36,000	36,000	144,000	4
	4		48,600	9,000			57,600	14,400	14,400	14,400	14,400	57,600	5
	5		127,500	16,500			144,000	36,000	36,000	36,000	36,000	144,000	4
	<b>Sub-total</b>	<b>172,575</b>	<b>518,138</b>	<b>296,588</b>	<b>53,100</b>	<b>-</b>	<b>1,040,400</b>	<b>260,100</b>	<b>260,100</b>	<b>260,100</b>	<b>260,100</b>	<b>1,040,400</b>	
<b>010</b>	<b>Consultants</b>												
	6	18,000	51,000				69,000	18,000	42,000		9,000	69,000	2
	7		36,000				36,000	36,000				36,000	6
	8			48,000			48,000		24,000	6,000	18,000	48,000	3
	9		9,000				9,000	9,000				9,000	7
	10		9,000				9,000	9,000				9,000	7

11	National Climate Modelling Expert Laos		9,000				9,000	9,000				9,000	7
12	National Climate Modelling Expert Myanmar		9,000				9,000	9,000				9,000	7
13	National Climate Expert Bhutan	30,000					30,000	18,000	12,000			30,000	8
14	National Climate Expert Cambodia	30,000					30,000	18,000	12,000			30,000	8
15	National Climate Expert Laos	30,000					30,000	18,000	12,000			30,000	8
16	National Climate Expert Myanmar	30,000					30,000	18,000	12,000			30,000	8
17	National Policy Expert Bhutan	18,000		12,000			30,000	9,000	9,000		12,000	30,000	14
18	National Policy Expert Cambodia	18,000		12,000			30,000	9,000	9,000		12,000	30,000	14
19	National Policy Expert Laos	18,000		12,000			30,000	9,000	9,000		12,000	30,000	14
20	National Policy Expert Myanmar	18,000		12,000			30,000	9,000	9,000		12,000	30,000	14
21	National Socio-Economic & Gender Expert Bhutan		7,500				7,500	7,500				7,500	18
22	National Socio-Economic & Gender Expert Cambodia		7,500				7,500	7,500				7,500	18
23	National Socio-Economic & Gender Expert Laos		7,500				7,500	7,500				7,500	18
24	National Socio-Economic & Gender Expert Myanmar		7,500				7,500	7,500				7,500	18
25	National Biodiversity Expert Bhutan		7,500				7,500	7,500				7,500	20
26	National Biodiversity Expert Cambodia		7,500				7,500	7,500				7,500	20
27	National Biodiversity Expert Laos		7,500				7,500	7,500				7,500	20
28	National Biodiversity Expert Myanmar		7,500				7,500	7,500				7,500	20
29	M&E expert			12,000		36,000	48,000	12,000	12,000.00	12,000	12,000	48,000	40
	<b>Sub-total</b>	<b>210,000</b>	<b>183,000</b>	<b>108,000</b>	<b>-</b>	<b>36,000</b>	<b>537,000</b>	<b>270,000</b>	<b>162,000</b>	<b>18,000</b>	<b>87,000</b>	<b>537,000</b>	

010		<b>Administrative Support</b>												
	30	Regional Administration and Finance Officer (50%)				32,160		32,160	8,040	8,040	8,040	8,040	32,160	54
	31	Admin and Finance officer Bhutan				24,000		24,000	6,000	6,000	6,000	6,000	24,000	55
	32	Admin and Finance officer Cambodia				24,000		24,000	6,000	6,000	6,000	6,000	24,000	55
	33	Admin and Finance officer Laos				24,000		24,000	6,000	6,000	6,000	6,000	24,000	55
	34	Admin and Finance officer Myanmar				24,000		24,000	6,000	6,000	6,000	6,000	24,000	55
		<b>Sub-total</b>				<b>128,160</b>		<b>128,160</b>	<b>32,040</b>	<b>32,040</b>	<b>32,040</b>	<b>32,040</b>	<b>128,160</b>	
160		<b>Travel on official business</b>												
	1	Travel ITE and INRE to other countries in region	8,500					8,500	8,500				8,500	12
	2	Travel costs for training of trainer workshop	26,400					26,400	8,800	8,800		8,800	26,400	13
	3	Travel costs for training on EbA tool	16,400					16,400		8,200	8,200		16,400	16
	4	Undertaking study tours	29,864					29,864				29,864	29,864	17
	5	Travel for National Socio-Economic and Gender Expert		13,000				13,000	13,000				13,000	19
	6	Travel for Biodiversity Experts		13,000				13,000	13,000				13,000	21
	7	Travel costs training technical guidelines		15,200				15,200		15,200			15,200	25
	8	Travel and DSA TWG meeting		10,000				10,000	2,500	2,500	2,500	2,500	10,000	57
	9	Transport costs implementing EbA interventions		40,000				40,000	10,000	10,000	10,000	10,000	40,000	30
	10	Travel costs training for livelihoods		20,000				20,000	5,000	5,000	5,000	5,000	20,000	38
	11	Travelling International M&E expert			9,000			9,000		3,000	3,000	3,000	9,000	53
	12	Travel for PRC meeting				39,000		39,000	13,000	13,000	13,000		39,000	51

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	13	Travel for regional workshop			11,900			11,900				11,900	11,900	46
		<b>Sub-total</b>	<b>81,164</b>	<b>111,200</b>	<b>20,900</b>	<b>39,000</b>	<b>-</b>	<b>252,264</b>	<b>73,800</b>	<b>65,700</b>	<b>41,700</b>	<b>71,064</b>	<b>252,264</b>	
	<b>Component total</b>		<b>463,739</b>	<b>812,338</b>	<b>425,488</b>	<b>220,260</b>	<b>36,000</b>	<b>1,957,824</b>	<b>635,940</b>	<b>519,840</b>	<b>351,840</b>	<b>450,204</b>	<b>1,957,824</b>	
	<b>SUB-CONTRACT COMPONENT</b>													
140		<b>Sub-contracts (MOUs/LOAs for supporting organizations)</b>												
	1	Subcontract for supervision of research by national research institutions		36,000				36,000	9,000	9,000	9,000	9,000	36,000	
		<b>Sub-total</b>	<b>-</b>	<b>36,000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>36,000</b>	<b>9,000</b>	<b>9,000</b>	<b>9,000</b>	<b>9,000</b>	<b>36,000</b>	
140		<b>Sub-contracts (for commercial purposes)</b>												
	2	Environmental Impact Assessments		20,000				20,000	20,000				20,000	59
	3	EbA interventions Bhutan	-	505,000				505,000	40,000	180,000	215,000	70,000	505,000	26
	4	EbA interventions Cambodia		500,000				500,000	25,000	202,000	203,000	70,000	500,000	27
	5	EbA interventions Laos		468,000				468,000	70,000	175,000	150,000	73,000	468,000	28
	6	EbA interventions Myanmar		330,000				330,000	55,000	100,000	100,000	75,000	330,000	29
	7	Climate-resilient livelihoods Bhutan		199,096				199,096	10,000	79,096	75,000	35,000	199,096	33
	8	Climate-resilient livelihoods Cambodia		191,000				191,000	-	57,000	72,000	62,000	191,000	34
	9	Climate-resilient livelihoods Laos		295,000				295,000	20,000	45,000	130,000	100,000	295,000	35
	10	Climate-resilient livelihoods Myanmar		406,000				406,000	60,000	110,000	169,000	67,000	406,000	36
	11	PhD and MSc research	-	289,600		-	-	289,600		110,400	110,400	68,800	289,600	
		<b>Sub-total</b>	<b>-</b>	<b>3,203,696</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3,203,696</b>	<b>300,000</b>	<b>1,058,496</b>	<b>1,224,400</b>	<b>620,800</b>	<b>3,203,696</b>	
	<b>Component total</b>		<b>-</b>	<b>3,239,696</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3,239,696</b>	<b>309,000</b>	<b>1,067,496</b>	<b>1,233,400</b>	<b>629,800</b>	<b>3,239,696</b>	

	TRAINING COMPONENT													
		Group training												
1		Training of Trainers workshop	41,600				41,600	10,400	10,400	10,400	10,400	41,600		
2		Training on using EbA tool Bhutan	9,000				9,000		6,000	3,000		9,000		
3		Training on using EbA tool Cambodia	9,000				9,000		6,000	3,000		9,000		
4		Training on using EbA tool Laos	9,000				9,000		6,000	3,000		9,000		
5		Training on using EbA tool Myanmar	9,000				9,000		6,000	3,000		9,000		
6		Training technical guidelines Bhutan		6,000			6,000		6,000			6,000		
7		Training technical guidelines Cambodia		6,000			6,000		6,000			6,000		
8		Training technical guidelines Laos		6,000			6,000		6,000			6,000		
9		Training technical guidelines Myanmar		6,000			6,000		6,000			6,000		
10		Training on waste management Bhutan		8,000			8,000	2,000	2,000	2,000	2,000	8,000	58	
11		Training on waste management Cambodia		8,000			8,000	2,000	2,000	2,000	2,000	8,000	58	
12		Training on waste management Laos		8,000			8,000	2,000	2,000	2,000	2,000	8,000	58	
13		Training on waste management Myanmar		8,000			8,000	2,000	2,000	2,000	2,000	8,000	58	
14		Training costs on value chains and accounting		48,000			48,000	12,000	12,000	12,000	12,000	48,000	37	
15		Awareness campaign Bhutan			35,000		35,000		20,000	5,000	10,000	35,000	44	
16		Awareness campaign Cambodia			35,000		35,000		20,000	5,000	10,000	35,000	44	
17		Awareness campaign Laos			35,000		35,000		20,000	5,000	10,000	35,000	44	
18		Awareness campaign Myanmar			35,000		35,000		20,000	5,000	10,000	35,000	44	
19		Regional workshop			4,000		4,000				4,000	4,000	45	
20		Workshop upscaling strategy Bhutan			2,000		2,000				2,000	2,000	47	

	21	Workshop upscaling strategy Cambodia			2,000			2,000			2,000	2,000	47
	22	Workshop upscaling strategy Laos			2,000			2,000			2,000	2,000	47
	23	Workshop upscaling strategy Myanmar			2,000			2,000			2,000	2,000	47
		<b>Sub-total</b>	<b>77,600</b>	<b>104,000</b>	<b>152,000</b>	<b>-</b>	<b>-</b>	<b>333,600</b>	<b>30,400</b>	<b>158,400</b>	<b>62,400</b>	<b>82,400</b>	<b>333,600</b>
	<b>3300</b>	<b>Meetings/Conferences</b>											
	24	Meetings with private sector		2,000				2,000			2,000	2,000	39
	25	Meetings technical working group	-	-	-	32,000		32,000	8,000	8,000	8,000	8,000	56
	26	Project Steering Committee Meetings					30,000	30,000	7,500	7,500	7,500	7,500	51
	27	Inception and closure workshop	-	-	-		12,000	12,000	6,000		6,000	12,000	52
		<b>Sub-total</b>	<b>-</b>	<b>2,000</b>	<b>-</b>	<b>32,000</b>	<b>42,000</b>	<b>76,000</b>	<b>21,500</b>	<b>15,500</b>	<b>15,500</b>	<b>23,500</b>	<b>76,000</b>
	<b>Component total</b>		<b>77,600</b>	<b>106,000</b>	<b>152,000</b>	<b>32,000</b>	<b>42,000</b>	<b>409,600</b>	<b>51,900</b>	<b>173,900</b>	<b>77,900</b>	<b>105,900</b>	<b>409,600</b>
		<b>EQUIPMENT AND PREMISES COMPONENT</b>											
135		Expendable equipment											
	1	Printing of policy briefs	8,000					8,000		8,000		8,000	9
	2	Printing training material	28,000					28,000	16,000	12,000		28,000	10
	3	Producing vulnerability maps		80,000				80,000	80,000			80,000	22
	4	Printing technical guidelines		8,000				8,000		8,000		8,000	23
	5	Printing livelihood reports		2,000				2,000		2,000		2,000	31
	6	Printing of livelihood plans		4,000				4,000		4,000		4,000	32
	7	Research equipment Bhutan			19,500			19,500		10,000	5,000	4,500	43
	8	Research equipment Cambodia			19,500			19,500		10,000	5,000	4,500	43
	9	Research equipment Laos			19,500			19,500		10,000	5,000	4,500	43

	10	Research equipment Myanmar			19,500			19,500		10,000	5,000	4,500	19,500	43
		<b>Sub-total</b>	<b>36,000</b>	<b>94,000</b>	<b>78,000</b>	-	-	<b>208,000</b>	<b>96,000</b>	<b>74,000</b>	<b>20,000</b>	<b>18,000</b>	<b>208,000</b>	
135		Non-expendable equipment												
	11	Office equipment	-	-	-	12,080		12,080	6,000	4,000	1,040	1,040	12,080	48
		<b>Sub-total</b>	-	-	-	<b>12,080</b>	-	<b>12,080</b>	<b>6,000</b>	<b>4,000</b>	<b>1,040</b>	<b>1,040</b>	<b>12,080</b>	
	<b>Component total</b>		<b>36,000</b>	<b>94,000</b>	<b>78,000</b>	<b>12,080</b>		<b>220,080</b>	<b>102,000</b>	<b>78,000</b>	<b>21,040</b>	<b>19,040</b>	<b>220,080</b>	
		<b>MISCELLANEOUS COMPONENT</b>												
125		Reporting costs												
	1	Scientific publications		12,000				12,000			6,000	6,000	12,000	60
		<b>Sub-total</b>		<b>12,000</b>	-	-	-	<b>12,000</b>	-	-	<b>6,000</b>	<b>6,000</b>	<b>12,000</b>	
125		Sundry												
	2	Miscellaneous				16,000		16,000	4,000	4,000	4,000	4,000	16,000	
	3	Telecommunication costs				4,800		4,800	1,200	1,200.00	1,200.00	1,200.00	4,800	
		<b>Sub-total</b>				<b>20,800</b>	-	<b>20,800</b>	<b>5,200</b>	<b>5,200</b>	<b>5,200</b>	<b>5,200</b>	<b>20,800</b>	
125		Evaluation												
	4	Baseline evaluation including all 4 countries	-	-	-	-	20,000	20,000	20,000	-	-	-	20,000	
	5	Mid-term evaluation including all 4 countries	-	-	-	-	40,000	40,000	-	40,000	-	-	40,000	
	6	Final evaluation including all 4 countries	-	-	-	-	60,000	60,000	-	-	-	60,000	60,000	
	7	Audit					20,000	20,000	5,000	5,000	5,000	5,000	20,000	
		<b>Sub-total</b>	-	-	-	-	<b>140,000</b>	<b>140,000</b>	<b>25,000</b>	<b>45,000</b>	<b>5,000</b>	<b>65,000</b>	<b>140,000</b>	
	<b>Component total</b>		-	<b>12,000</b>	-	<b>20,800</b>	<b>140,000</b>	<b>172,800</b>	<b>30,200</b>	<b>50,200</b>	<b>16,200</b>	<b>76,200</b>	<b>172,800</b>	

	<b>GRAND TOTAL</b>	<b>577,339</b>	<b>4,264,034</b>	<b>655,488</b>	<b>285,140</b>	<b>218,000</b>	<b>6,000,000</b>	<b>1,129,040</b>	<b>1,889,436</b>	<b>1,700,380</b>	<b>1,281,144</b>	<b>6,000,000</b>
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Budget notes:

Number	Description	Activities and Notes
<b>Component 1: Technical and institutional capacity of city management authorities to integrate urban EbA into development planning strengthened.</b>		
1	Consultancy contract for full time International Technical Expert (ITE) (48 months @\$13,275/month)	This budget will be used mainly to <i>inter alia</i> :
		<b>Output 1.1.</b> Coordinate with the policy experts in each country that policy briefs are developed on the recommended revisions to policies, strategies and plans, including budget allocations to integrate EbA into urban planning and management of natural resources. More specifically, in Activity 1.1.1 to assist the NNREs in undertaking a stock-take on adaptation techniques that have been implemented in the Asia-Pacific region in urban areas (including cost-benefit analysis) , review existing policies and plans related to natural resource management, urban planning and infrastructure development to identify entry points for EbA, and in Activity 1.1.2 to develop a policy brief on the effectiveness of adaptation interventions in urban areas based on the cost-benefit analyses and information from relevant stakeholders.
		<b>Output 1.2</b> Lead the development of training material on planning, implementing the EbA interventions with assistance from the National Climate Experts.
		<b>Output 1.3</b> Lead the design of decision-making tools to integrate urban EbA into development planning and the NAP process, designed and presented to city authorities in Bhutan, Cambodia, Lao PDR and Myanmar.
		<b>Output 2.2</b> Assist the National experts with the implementation of the city-specific EbA interventions, using the technical guidelines developed under Activity 2.2.2.
		<b>Output 2.3</b> Assist the National experts with the development and implementation of livelihood plans as well as providing training to the selected local communities.
		<b>2.4</b> Develop a long-term research framework in collaboration with national research institutions, including the development of an MoU and sharing of findings of research conducted by the selected MSc and PhD students.
		<b>Output 3.1</b> Lead the development and implementation of a monitoring framework to measure the performance of EbA interventions.
		<b>Output 3.2</b> Assist the National Technical Experts and the Communication Expert with the development and implementation of a national public awareness raising campaign on the effects of climate change and the use of EbA.
		<b>Output 3.3</b> Responsible for updating relevant national and regional platforms on integrating urban EbA into city planning.
<b>Output 3.4</b> Lead the development of an upscaling strategy for urban EbA in collaboration with the National Policy experts.		
2	International Natural Resource Economist (11,5 months@US\$6,000/month)	This budget will be used to hire an international economist on natural resources who is familiar with the Asia-Pacific region.
		<b>Activity 1.1.1</b> 3 months in year 1 to undertake a stock-take on adaptation techniques that have been implemented in the Asia-Pacific region in urban areas (including cost-benefit analysis).
		<b>Activity 2.3.1</b> 3 months in year 2 to develop climate-resilient livelihood reports indicating barriers and ways to overcome barriers to develop EBA based livelihoods.
		<b>Activity 2.3.2</b> 4 months in year 2 to develop plans to improve livelihoods of vulnerable, urban communities based on the reports on livelihoods.
		<b>Activity 2.3.4</b> 1.5 month in year 4 to link potential private sector partners with urban communities that are implementing livelihood improvement plans in each pilot city through ongoing communication and meetings.

3	Consultancy contract for International Communications Expert (ICE) (8 months@ US\$6,000/month).	The International Communication Expert will:
		<b>Activity 3.2.2</b> Develop and implement awareness-raising programmes and tools (using information collected in Activity 3.1.2.1) to share information on the effects of climate change in urban areas and best-practice options for EbA with the general public. This will be 3 months in year 2 and 2 months in year 4.
		<b>Activity 3.3.2</b> Assist the ITE and NTEs in updating relevant local, national and regional platforms to share knowledge on integrating urban EbA into city planning and management processes. 1 months in year 2-4, totalling 3 months.
4	National Technical Experts (@US\$3,000/month full time, 48 months)	This budget will be used to hire 2 national technical experts full time for Cambodia and Myanmar to supervise and coordinate the project activities under Outcome 2, particularly training on technical guidelines and training to selected urban communities on using these guidelines under Output 2.2. Under Output 2.3, the national technical experts will be responsible for overseeing the implementation of the livelihood plans as developed by the International Natural Resource Economist.
5	Assistant Technical Expert (@US\$1,200/month full time, 48 months)	This budget will be used to hire 2 assistant technical experts full time for Bhutan and Laos to assist the National Technical Expert and coordinate the project activities under Outcome 2, particularly training on technical guidelines and training to selected urban communities on using these guidelines under Output 2.2. Under Output 2.3, the assistant experts will assist the national technical experts in overseeing the implementation of the livelihood plans as developed by the International Natural Resource Economist.
6	International Climate Modelling Expert (ICME) (6 months @US\$6,000/month)	This budget will be used to hire an International Climate Modelling Expert. Responsibilities include:
		<b>Activity 2.1.1</b> 3 months in year 1 developing updated climate models to inform vulnerability mapping of selected cities.
		<b>Activity 2.1.4</b> A total of 1 month in year 1 in assisting and overseeing the NCEs in developing vulnerability maps for the 4 cities.
		<b>Activity 2.1.5</b> 2 months in year 1 for developing a report on adaptation needs for each city and the potential for services from urban ecosystems to contribute to meeting these needs.
7	National Climate Modelling Expert (NCME) (3 months@US\$3,000/month)	<b>Activity 2.1.4</b> 3 months in year 1 for developing short- to medium-term vulnerability maps for selected cities using the updated climate models and socio-economic research.
8	National Climate Expert (NCE) (10 months @US\$3,000/month)	This budget will be used to hire a National Climate Expert to assist the ITE.
		<b>Activity 1.2.1</b> Assist the ITE in developing training material to plan and monitor urban EbA based on the results of Output 1.1. This will be 3 months in year 1 and 2 months in year 2.
		<b>Activity 1.2.2</b> Hold a Training of Trainers workshop for city authorities in the selected cities in Bhutan, Cambodia, Laos and Myanmar. Including preparation for the workshops: 3 months in year 1 and 2 months in year 2.
9	Developing and printing policy briefs	<b>Activity 1.1.2</b> This budget will be used for the development and printing of the policy briefs. A total of US\$8,000 to be divided over the four countries.
10	Designing and printing training material	<b>Activity 1.2.1</b> This budget will be used for the designing and printing training material. US\$4,000 per country, totalling US\$16,000.
11	Training of trainers workshop on urban EbA	This budget of US\$10,400 per year, US\$2,600 per country per year, for year 1-4 is allocated for Activity 1.2.2 for a 2 day Training of Trainers workshop for representatives of the national and sub-national government of all four countries on urban EbA. The allocated budget includes all training material @US\$50 per participant for a maximum of 20 per country, totalling US\$1,000 per country. Cost of venue (US\$500/day) and catering (US\$15x 20 =US\$300/day) are ~US\$800 per day per country, with a total of US\$1,600 per country.
12	Travel costs for stocktake on EbA best practices	<b>Activity 1.1.1.</b> This budget of US\$8,500 will be used for the ITE and the INRE to travel to countries in the region to undertake a stocktake on EbA best practices, for example in the form of a study tour. This includes 2 flight @US\$1,000 x 2, totalling US\$4,000. DSA US\$150/day for 15 days per person = US\$2,100 x2 = US\$4,200.

13	Travel costs for training of trainers workshop	<b>Activity 1.2.2</b> This budget @US\$26,400 will be used for the national climate expert to provide a 3 day training in year 1 to local and national authorities in each of the countries on urban EbA. This training will be repeated in year 2 and 4 to ensure all participants have a good understanding with the potential to train more people. Specific costs include: US\$500 travel for adaptation expert to 4 countries, totalling US\$2,000; US\$50 reimbursements to 25 participants, for travel and terminal expenses in each of the 4 countries=US\$1,250 x 4 =US\$5,000; and DSA for national climate expert @US\$150/day x 3 days for 4 countries =US\$1,800.
14	Consultancy contract for National Policy Expert (NPE) (10 months @US\$3,000/month)	This budget of US\$16,500 will be used to contract 4 national policy experts.
		<b>Activity 1.1.2</b> Assist the International Technical Expert 1 month in year 1 with developing policy briefs on the effectiveness of adaptation interventions in urban areas based on the cost-benefit analyses and information from relevant stakeholders.
		<b>Activity 1.3.1.</b> Assess the decision-making processes in each targeted country with regards to urban planning. This will take 2 months in year 2.
		<b>Activity 1.3.2.</b> Assist the ITE with designing tools for integrating EbA into urban development planning based on the particular decision-making process in each country. This will be 2 months in year 1 and 1 month in year 2.
		<b>Activity 3.4.1</b> Assist the ITE 3 months in year 4 with developing national upscaling strategies (one strategy for each pilot country) for Urban EbA.
		<b>Activity 3.4.2</b> Assist the regional technical expert 1 month with preparing and presenting the upscaling strategy to relevant policy- and decision-makers.
15	Training on using the EbA tool	<b>Activity 1.3.3</b> 2 days training on using the EbA tool in year 2 with a 1 day follow up training in year 3. 25 people per country with in total 100 representatives of government. Cost of venue and catering are ~US\$1,500 per day, totalling US\$3,000 per country for year 2.
16	Travel costs for training on EbA tool	<b>Activity 1.3.3</b> This budget of US\$8,200 will be used for the national policy expert to travel to the selected cities to provide training to city authorities on using the EbA tool. Specific costs include: US\$500 travel for national policy expert in 4 countries, totalling US\$2,000; US\$50 reimbursements to 22 participants, for travel and terminal expenses in each of the 4 countries=US\$1,100 x 4 =US\$4,400; and DSA for national policy expert @US\$150/day x 3 days for 4 countries =US\$1,800
17	Transport for study tour to exchange knowledge on implementing EbA	<b>Activity 1.3.3</b> This budget of a total of US\$29,840 will be used to undertake a study tour in year 4 for each pilot country. US\$20,000 (US\$5,000 per country) will be used for the travel of 10 people @US\$500 per person. DSA for 40 people @US\$123.3/day for 2 days, totalling US\$9,864.
18	National Socio-Economic and Gender Expert (NSE&GE) (3 months @US\$2,500/month)	This budget will be used to contract a Regional Expert in Socio-Economics. This expert will undertake assessments to identify the risks and adaptation needs of urban communities to the effects of climate change.
		<b>Activity 2.1.2.</b> 3 months in year 1 to undertake assessment in to identify climate vulnerabilities and collect socio-economic data on urban communities.
19	Travel for National Socio-Economic and Gender Expert	This budget of US\$13,000 will be used for the 4 NSEGEs to travel to the respective pilot cities. Travel costs are estimated@US\$250 per country, totalling US\$1,000. DSA @US\$150/day x 20 days for 4 countries =US\$12,000
20	National Biodiversity Expert (NBE) (3 months @US\$2,500/month)	This budget will be used to contract a regional expert in biodiversity and ecology who will collect and update data and information on biodiversity and ecology for the urban EbA intervention areas in Thimphu, Kep, Phongsaly, Oudomxay and Mandalay.
		<b>Activity 2.1.3.</b> 3 months in year 1 to undertake biodiversity and ecosystem assessments in each of the project intervention sites and write a report with recommendations for each intervention site.
21	Travel for Biodiversity Experts	This budget of US\$13,000 will be used for the 4 NSEGEs to travel to the respective pilot cities. Travel costs are estimated@US\$250 per country, totalling US\$1,000. DSA @US\$150/day x 20 days for 4 countries =US\$12,000

22	Producing vulnerability maps	This budget will be used to produce maps based on the information collected under Activity 2.1.2 and 2.1.3, US\$20,000 is allocated for each country.
23	Printing technical guidelines	<b>Activity 2.2.2</b> This budget of US\$8,000 – US\$2,000 per country – will be used to print the technical guidelines developed.
24	Training on technical guidelines	This budget US\$24,000 will be used for National Technical Experts to train city authorities and local communities in each city on applying the technical guidelines developed in Activity 2.2.2. Training will be 2 days at the start of year 2 and a refreshing workshop, 1 day for communities and 1 day for city authorities separately later in year 2. Costs for venue hire and catering will be US\$1,500 per day, totalling US\$6,000 per country.
25	Travel costs for workshop on technical guidelines	<b>Activity 2.2.3</b> This budget of US\$15,200 will be used for the national technical experts to travel to the cities and provide training to the urban communities and city authorities on how to use the technical guidelines. This training will be provided twice in year 2, the second one as a refreshment to ensure participants are able to implement the guidelines. Travel costs for NTE is estimated at US\$200 per country, totalling US\$800. US\$50 reimbursements to 25 participants, for travel and terminal expenses in each of the 4 countries=US\$1,250 x 4 =US\$5,000. DSA for the NTE is US\$150 for 3 days x 4 countries = US\$1,800.
26	EbA interventions Bhutan	<b>Activity 2.2.4</b> This budget of US\$505,000 will be used to implement to following EbA interventions: i) Rehabilitate degraded riparian zones and riverbeds using climate resilient species over 1,5 km at Changjiji, Dechencholing, Hejo and Babesa; ii) Implement rain water harvesting at resettlement areas; and iii) Establish a fence with climate-resilient trees at urban agricultural sites.
27	EbA interventions Cambodia	<b>Activity 2.2.4</b> This budget of US\$500,000 will be used to implement to following EbA interventions: i) Restoration of natural lakes and ponds through tree planting in Oukrasa; ii) Rehabilitate waste water and sewage systems through planting trees surrounding flooding area; iii) Coastal protection through construction of a sea dyke and tree planting; and iv) Construct water harvesting system to increase water availability in the dry season.
28	EbA interventions Laos	<b>Activity 2.2.4</b> This budget of US\$468,000 will be used to implement to following EbA interventions: i) Terrace climate resilient tree species; ii) Develop a nursery in a greenhouse with climate-resilient and medicinal plant species (Oudomxay); iii) Rehabilitate the watershed around Kep; iv) Rehabilitate waste water and sewage systems through planting trees surrounding flooding area; and v) provide water harvesting systems in the Kep communities.
29	EbA interventions Myanmar	<b>Activity 2.2.4</b> This budget of US\$330,000 will be used to implement to following EbA interventions: i) Rehabilitation of watershed plantation (12 ha); ii) Restoration of wetland (500ha); iii) Plant 2000 trees along the Taung Taman Inn boundary area greening.
30	Transport costs implementing EbA interventions	<b>Activity 2.2.4</b> This budget of US\$ 40,000 (US\$2,500 per country per year for four years) will be used for transportation of staff to and from the project site.
31	Printing reports on livelihoods from urban ecosystems in targeted urban communities.	<b>Activity 2.3.1</b> This budget of US\$2,000, US\$500 per country will be used to print the livelihood reports. The reports will describe: i) barriers to developing and growing livelihoods from urban ecosystems; ii) methods to overcome these barriers; iii) value chain and market analyses of livelihoods from urban ecosystems.
32	Printing of plans to improve livelihoods of vulnerable, urban communities based on the reports on livelihoods.	<b>Activity 2.3.2</b> This budget of US\$4,000, US\$1,000 per country will be used to print the livelihood plans for the selected urban community in each pilot country. These plans build on the livelihood reports developed in Activity 2.3.1 and include a description of business and technical training needs, and equipment required to improve livelihoods.
33	Climate-resilient livelihoods Bhutan	<b>Activity 2.3.3</b> This budget of US\$199,096 will be used to implement to following climate-resilient livelihoods: i) Planting climate-resilient crops and trees for urban agriculture (10 acres);ii) Construct a shed to store and market agricultural products; iii) Develop alternative climate-resilient livelihoods; iv) Provide top quality climate resistant agricultural seeds; and v) Establish

		plantations of fruit and no fruit trees in resettlement areas (10 acres ) and public spaces (5 acres), and in agriculture fields (agro-forestry, 10 acres).
34	Climate-resilient livelihoods Cambodia	<b>Activity 2.3.3</b> This budget of US\$191,000 will be used to implement to following climate-resilient livelihoods: i) Provide agricultural toolkits for women self-help groups; ii) Establish home gardens for local urban community; and iii) Develop climate-resilient livelihoods in Kep including handicrafts, and processing fisheries and agricultural products.
35	Equipment livelihoods Laos	<b>Activity 2.3.3</b> This budget of US\$295,000 will be used to implement to following climate-resilient livelihoods: i) Provide agricultural toolkits for women; ii) Establish vegetable gardens at schools and public places; iii) Plant climate-resilient crops and trees for urban agriculture; and iv) Develop climate-resilient livelihoods in Phongsaly and Oudomxay
36	Equipment livelihoods Myanmar	<b>Activity 2.3.3</b> This budget of US\$406,000 will be used to implement to following climate-resilient livelihoods: i) Organic agriculture (40 ha); ii) School vegetable garden (12ha) at 13 schools; iii) Provide agricultural start-up kits to 260 families in 13 villages; iv) Provide equipment and seedlings for nursery (1ha); and v) Development of climate-resilient livelihoods in Mandalay.
37	Training on using equipment	This training budget of US\$48,000 (US\$3,000 per country per year, totalling US\$12,000 per country) including material, will be provided by the national technical expert and will focus on: i) business roles; ii) value chains and marketing; iii) record-keeping and accounting; iv) cash flow analysis; and v) forward planning.
38	Travel costs for the NTEs	This budget of US\$20,000 will be used for the 4 NTEs to travel to the respective pilot cities. Travel costs are estimated @US\$500 per country per year, totalling US\$2,000, for 4 countries US\$8,000. DSA @US\$100/day x 30 days = US\$3,000 per country per year. For 4 countries =US\$12,000
39	Meetings with private sector to link them with urban communities that are implementing livelihood improvement plans in each pilot city	<b>Activity 2.3.4</b> This budget of US\$2,000, US\$500 per country, is allocated for transport and other expenses required to meet with the private sector in year 4.
40	International Monitoring & Evaluation Expert (IM&EE) (12 months @US\$4,000/month)	This budget of US\$48,000 will be used to hire a Monitoring and Evaluation expert to assess the progress and quality of the implementation of the EbA interventions.
		<b>Activity 3.1.1</b> Develop a monitoring framework for 3 months in year 1 to measure the performance of EbA interventions in collaboration with the ITE.
		<b>Activity 3.1.2</b> Execute the monitoring framework to assess the performance of EbA interventions for 2 months per year in year 2-4, totalling 6 months.
		<b>Activity 3.1.3</b> Develop detailed reports on the performance of urban EbA interventions in pilot cities, 1 month per year for year 2-4, totalling 3 months.
41	Research stipend for MScs and PhD students (@US\$74,400).	This budget of US\$74,400 per country for 4 years will be used to support research by PhD and MSc students in Activity 3.3.3. Per country, this will include: 1 PhD student @US\$1,100/month for year 2-4; research funds for the PhD student of US\$250/month, totalling US\$3,000 per year for year 2-4; 2 Master students @ US\$350/month, totalling US\$8,400 per year for year 2-4. In addition, there will be a subcontract for supervision of the research of US\$2,000 in year 1 and US\$3,000 per year for year 2-4. Ideas for topics could include: role of protected areas surrounding the urban area in adapting to climate change; assess waste management condition and improvement through EbA interventions implemented.
42	Subcontract for supervision of research by national research institutions	<b>Activity 2.4.3</b> This budget of US\$48,000, US\$3,000 per country per year for year 1-4 will be used to subcontract people to supervise the research undertaken.

43	Equipment for monitoring	<b>Activity 3.1.2</b> This budget of US\$19,500 for each country for year 2-4 will be used to purchase equipment necessary to undertake the research. Equipment will include <i>inter alia</i> : GPS devices, cameras, species identification books, sampling material and apparatus to measure vegetation indices and water quality, field-work computers, digital cameras.
44	Implementing awareness raising campaign	This total budget of US\$150,708 will be used to implement the awareness-raising campaign using the material developed in Activity 3.2.2. The budget is US\$25,000 per country for year 2 and US\$12,677 per country in year 4.
45	Regional workshop	This regional workshop will be held over 2 days in year 4 back to back with the PSC meeting. During this regional workshop the project will be presented to other stakeholders working in the pilot city and involved with urban planning, adaptation to climate change or other. Stakeholders will include: the private sector, NGOs, representatives from other government departments in addition to the executive government department.
46	Travel for regional workshop	This budget @US\$11,900 will be used for the ITE and other stakeholders from the four countries to attend the regional workshop in year 4. It is advised to hold the workshop in one of the three countries to minimise travel costs. In addition, it is advised to combine this meeting back to back with a PSC meeting to further minimise travel costs. Travel costs for regional workshop: 1 ITE, 3 NTEs, 3 academia, 3 representatives of EA, 3 representatives from other ministries = 13 participants. Travel costs 13 x @US1,000 totalling US\$13,000. DSA: 13 x US\$150 =US\$1,950. US\$50 reimbursements to 1 NTE and 3 local representatives, for travel and terminal expenses=US\$200.
47	Workshop upscaling strategy	<b>Activity 3.4.2</b> Budget for travel of this workshop is included in budget line 40 regarding the annual regional workshop.
48	Office equipment	Office equipment, including, computers and office supplies. US\$10,000 over the duration of the project for all four countries.
49	Telecommunications cost	Telecommunications cost including telephone and internet. US\$4,000 for the four countries for 4 years.
50	Miscellaneous	Miscellaneous costs. US\$16,000 for 4 years.
51	Project Steering Committee Meetings	This budget is reserved for annual meetings for the PSC @US\$17,250 per year for year 1-3 and US\$7,500 for year 4 (see budget line 46) including travel and DSA. These meetings will always be held back-to-back with the technical working group meetings in year 1-3 and the regional workshop in year 4. The PSC is each year hosted by another country. It is advised to have the meeting at a time that the ITE will be in one of the countries already. Travel costs for participants will include: 4 representatives from baseline projects, 3 NTEs, 3 academia, 3 representatives of EA, 1 UNEP and 1 GEF representative. Travel costs year 1-3: 13 x US\$1,000 = US\$13,000 per year. Travel costs for 1 GEF representative and 1 UNEP representative @US\$1,500 x2 = US\$3,000 per year x 4 = total US\$12,000. DSA@150/day x 2 days x 15 people = US\$4,500 per year.
52	Inception and closure workshop	This budget is for a regional inception and closure workshop for the project representatives.
53	Travel for International M&E expert	This budget of US\$9,000 will be used for travel of the international M&E expert in year 2,3 and 4 to the 4 countries. For years 2, 3 and 4: 2x US\$500 per year for travel from Thailand to Cambodia and Myanmar totalling US\$3,000; and 2x US\$1,000 per year for year 2-4 for travel to Laos and Bhutan totalling US\$6,000.
54	Regional Admin and Finance officer	This budget will be used to hire a part-time Regional Administration and Finance Officer (AFO). the AFO will take responsibility to handle the procurement and all admin under Component 1 and 3. In particular, the AFO will also be involved with all admin regarding the release of funding for Component 2.
55	National Admin and Finance officer	This budget will be used to hire a 4 part-time National Administration and Finance Officers (AFO). The National AFO will take responsibility to handle the procurement and all admin under Component 2. In the case of Bhutan this post may be co-financed in which case funds will be redirected to other initiatives in component 2. This will be validated and agreed upon at inception.
56	Meetings National Technical working group	This budget of US\$32,000, US\$2,000 per country per year, will be used for the Technical Working Group to convene once per year. Participants will include the ITE, the NTE and assistant, representatives from baseline projects, other relevant stakeholders such as NGOs and the private sector.

57	Travel and DSA TWG meetings	Travel costs include US\$50 for 10 representatives/country = US\$500. DSA for Laos and Cambodia: US\$100/day x 10 x 2 countries = US\$2,000. It is assumed that for Bhutan and Myanmar there will be no DSA as the representatives come from the pilot city.
58	Training on waste management	<b>Activity 2.2.4</b> This budget of US\$8,000 per country –US\$2,000 per country per year – is used for training local communities on solid waste management.
59	Environmental Impact Assessments	<b>Activity 2.2.4</b> This budget of US\$20,000 is allocated to undertake Environmental Impact Assessments if required in any of the four countries.
60	Scientific publications	<b>Activity 2.4.4</b> This budget of US\$12,000 is allocated for scientific publication in year 3 and 4 of the project.

## Co-financing by source and UNEP budget lines

<b>Project title:</b>		Building the resilience of urban communities in the Asia Pacific region through ecosystem based adaptation (EbA)							
<b>Project number:</b>									
<b>Project executing partner:</b>		UNEP-ROLAC, MARN, MWLECC and SEMARNAT							
<b>Project implementation period:</b>									
<b>From:</b>	2017	<b>GEF</b>	<b>Bhutan</b>	<b>Cambodia</b>		<b>Laos</b>	<b>Myanmar</b>	<b>Regional</b>	
<b>To:</b>	2021		Thimphu Thromde	Department of Public Work and Transport (Kep Provincial Hall)	National Council for Sustainable Development	Phomxaly and Oudomxay province governments	Mandalay City Development Committee	UNHabitat	<b>Total</b>
<b>UNEP Budget Line</b>		Cash	Grant	Grant	In-kind	Grant	Grant	In-kind	
<b>010</b>	<b>PERSONNEL COMPONENT</b>								
		<b>Project personnel</b>							
	1	Regional Technical Expert	637,200						637,200
	2	Assistant Technical Expert Bhutan	57,600						57,600
	3	National Technical Expert Cambodia	144,000						144,000
	4	Assistant Technical Expert Laos	57,600						57,600
	5	National Technical Expert Myanmar	144,000						144,000
		<b>Sub-total</b>	<b>1,040,400</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,040,400</b>
<b>010</b>		<b>Consultants</b>							
	6	International Natural Resource Economist	69,000						69,000
	7	International Climate Modelling Expert	36,000						36,000
	8	International Communications Expert	48,000						48,000
	9	National Climate Modelling Expert Bhutan	9,000						9,000

10	National Climate Modelling Expert Cambodia	9,000								9,000
11	National Climate Modelling Expert Laos	9,000								9,000
12	National Climate Modelling Expert Myanmar	9,000								9,000
13	National Climate Expert Bhutan	30,000								30,000
14	National Climate Expert Cambodia	30,000								30,000
15	National Climate Expert Laos	30,000								30,000
16	National Climate Expert Myanmar	30,000								30,000
17	National Policy Expert Bhutan	30,000								30,000
18	National Policy Expert Cambodia	30,000								30,000
19	National Policy Expert Laos	30,000								30,000
20	National Policy Expert Myanmar	30,000								30,000
21	National Socio-Economic & Gender Expert Bhutan	7,500								7,500
22	National Socio-Economic & Gender Expert Cambodia	7,500								7,500
23	National Socio-Economic & Gender Expert Laos	7,500								7,500
24	National Socio-Economic & Gender Expert Myanmar	7,500								7,500
25	National Biodiversity Expert Bhutan	7,500								7,500

	26	National Biodiversity Expert Cambodia	7,500							7,500
	27	National Biodiversity Expert Laos	7,500							7,500
	28	National Biodiversity Expert Myanmar	7,500							7,500
	29	M&E expert	48,000							48,000
		<b>Sub-total</b>	<b>537,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>537,000</b>
010		<b>Administrative Support</b>								
	30	Regional Administration and Finance Officer (50%)	32160							32,160
	31	Admin and Finance officer Bhutan	24000							24,000
	32	Admin and Finance officer Cambodia	24000							24,000
	33	Admin and Finance officer Laos	24000							24,000
	34	Admin and Finance officer Myanmar	24000							24,000
		<b>Sub-total</b>	<b>128160</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>128160</b>
160		<b>Travel on official business</b>								
	1	Travel ITE and INRE to other countries in region	8500							8500
	2	Travel costs for training of trainer workshop	26400							26400
	3	Travel costs for training on EbA tool	16400							16400
	4	Undertaking study tours	29864							29864
	5	Travel for National Socio-Economic and Gender Expert	13000							13000
	6	Travel for Biodiversity Experts	13000							13000
	7	Travel costs training technical guidelines	15200							15200

	8	Travel and DSA TWG meeting	10000							10000
	9	Transport costs implementing EbA interventions	40000							40000
	10	Travel costs training for livelihoods	20000							20000
	11	Travelling International M&E expert	9000							9000
	12	Travel for PRC meeting	39000							39000
	13	Travel for regional workshop	11900							11900
		<b>Sub-total</b>	<b>252264</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>252264</b>
		<b>Component total</b>	<b>1,957,824</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,957,824</b>
		<b>SUB-CONTRACT COMPONENT</b>								
140		<b>Sub-contracts (MOUs/LOAs for cooperating agencies)</b>								
		<b>Sub-total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
140		<b>Sub-contracts (MOUs/LOAs for supporting organizations)</b>								
	1	National academics	36,000							36000
		<b>Sub-total</b>	<b>36,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>36,000</b>
140		<b>Sub-contracts (for commercial purposes)</b>								
	2	Environmental Impact Assessments	20,000							20000
	3	EbA interventions Bhutan	505,000	1,000,000						1505000
	4	EbA interventions Cambodia	500,000		16,911,750	25,000				17436750
	5	EbA interventions Laos	468,000				2,000,000		59,686	2527686
	6	EbA interventions Myanmar	330,000					18,970,000	982,545	20282545

7	Climate-resilient livelihoods Bhutan	199,096	500,000							699096
8	Climate-resilient livelihoods Cambodia	191,000			25,000	274,000				490000
9	Climate-resilient livelihoods Laos	295,000						253,686		548686
10	Climate-resilient livelihoods Myanmar	406,000					20,000,000	200,000		20606000
11	PhD and MSc research	289,600								289600
	<b>Sub-total</b>	<b>3,203,696</b>	<b>1,500,000</b>	<b>16,911,750</b>	<b>50,000</b>	<b>2,274,000</b>	<b>38,970,000</b>	<b>1,495,917</b>		<b>64,405,363</b>
	<b>Component total</b>	<b>3,239,696</b>	<b>1,500,000</b>	<b>16,911,750</b>	<b>50,000</b>	<b>2,274,000</b>	<b>38,970,000</b>	<b>1,495,917</b>		<b>64,441,363</b>
	<b>TRAINING COMPONENT</b>									
	Group training									
1	Training of Trainers workshop	41,600								41,600
2	Training on using EbA tool Bhutan	9,000								9,000
3	Training on using EbA tool Cambodia	9,000						50,000		59,000
4	Training on using EbA tool Laos	9,000						50,000		59,000
5	Training on using EbA tool Myanmar	9,000								9,000
6	Training technical guidelines Bhutan	6,000								6,000
7	Training technical guidelines Cambodia	6,000						50,000		56,000
8	Training technical guidelines Laos	6,000						50,000		56,000
9	Training technical guidelines Myanmar	6,000								6,000
10	Training on waste management Bhutan	8,000								8,000
11	Training on waste management Cambodia	8,000						50,000		58,000

12	Training on waste management Laos	8,000						100,000	108,000
13	Training on waste management Myanmar	8,000					30,000,000		30,008,000
14	Training costs on value chains and accounting	48,000							48,000
15	Awareness campaign Bhutan	35,000							35,000
16	Awareness campaign Cambodia	35,000							35,000
17	Awareness campaign Laos	35,000							35,000
18	Awareness campaign Myanmar	35,000					10,000,000		10,035,000
19	Regional workshop	4,000							4,000
20	Workshop upscaling strategy Bhutan	2,000							2,000
21	Workshop upscaling strategy Cambodia	2,000						50,500	52,500
22	Workshop upscaling strategy Laos	2,000							2,000
23	Workshop upscaling strategy Myanmar	2,000							2,000
	<b>Sub-total</b>	333,600	0	0	0	0	40,000,000	400,500	40,734,100
<b>3300</b>	<b>Meetings/Conferences</b>								
24	Meetings with private sector	2,000							2,000
25	Meetings technical working group	32,000							32,000
26	Project Steering Committee Meetings	30,000							30,000
27	Inception and closure workshop	12,000							12,000
	<b>Sub-total</b>	76,000	0	0	0	0	0	0	76,000
	<b>Component total</b>	409,600	0	0	0	0	40,000,000	400,500	40,810,100



125		Evaluation								
	4	Baseline evaluation including all 4 countries	20,000							20,000
	5	Mid-term evaluation including all 4 countries	40,000							40,000
	6	Final evaluation including all 4 countries	60,000							60,000
	7	Audit	20,000							20,000
		<b>Sub-total</b>	<b>140,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>140,000</b>
	<b>Component total</b>		172,800	0	0	0	0	0	0	172,800
	<b>GRAND TOTAL</b>		<b>6,000,000</b>	<b>1,500,000</b>	<b>16,911,750</b>	<b>50,000</b>	<b>2,274,000</b>	<b>78,970,000</b>	<b>1,896,417</b>	<b>107,602,167</b>

## ANNEX G: WORKPLAN

Workplan key: Lead consultants for activities

Workplan key: lead consultant for each activity	Regional Technical Expert	
	International Natural Resource Economist	
	National Policy Expert	
	National Climate Expert	
	International Climate Modelling Expert	
	National Climate Modelling Expert	
	National Socio-Economic & Gender Expert Bhutan, Cambodia, Laos and Myanmar	
	National Biodiversity Expert Bhutan, Cambodia, Laos and Myanmar	
	National/Assistant Technical Expert	
	National Academics	
	International M&E Expert	
	International Communication Expert	

Activity	Annual breakdown				Quarterly breakdown															
					Year 1				Year 2				Year 3				Year 4			
	Y 1	Y2	Y 3	Y 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q3	Q 4
1.1.1																				
1.1.2																				
1.2.1																				
1.2.2																				
1.3.1																				
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2.3.4																				
2.4.1																				
2.4.2																				
2.4.3																				
2.4.4																				
3.1.1																				

Activity	Annual breakdown				Quarterly breakdown																
	Y 1		Y 2		Year 1				Year 2				Year 3				Year 4				
	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	
3.1.2																					
3.1.3																					
3.2.1																					
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3.3.1																					
3.3.2																					
3.3.3																					
3.3.4																					
3.4.1																					
3.4.2																					

**ANNEX H: TRACKING TOOL**

Attached separately

**ANNEX I: OFP ENDORSEMENT LETTER**

Attached separately

## ANNEX J: CO-FINANCE LETTERS



United Nations Human Settlements Programme  
Myanmar

No. 6, Natogyi Road, Yangon, Myanmar  
Tel: (95 - 1) 542 910 - 919 Ext: 168-170  
Fax: (95- 1) 430 628, 544 531, 545 634  
Email: [desk@unhabitat-mya.org](mailto:desk@unhabitat-mya.org)

Letter No: UN-HABITAT/MYA/2016/129

Date: 17<sup>th</sup> May 2016

Dear Dr Naoko Ishii,

**Subject: UN-Habitat co-financing commitment to the GEF LDCF-financed project entitled "Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region."**

UN-Habitat is implementing initiatives with a variety of stakeholders across the Asia-Pacific region, including Myanmar.

In Myanmar, UN-Habitat is implementing two initiatives to improve planning in urban areas:

- **100 Resilient Cities** is a project funded by the Rockefeller Philanthropy Advisors, Inc which supports the development of an overall resilience strategy for the City of Mandalay. The total budget for the 100 Resilient Cities project (US\$ 200,000) is available as parallel co-financing for the LDCF project and has been under implementation since 28 July 2015 until December 2016.
- **Capacity Development Technical Assistance (TA 7456- MYA): Transformation of Urban Management** is a project funded by the Asian Development Bank (ADB) and implemented by UN-HABITAT with the Government of Myanmar as the Executing Agency. This project promotes sustainable urban development in Myanmar. The project budget is of a total of US\$ 982,545 and is available as parallel co-financing, and has been under implementation since 19 August 2014 until 20 August 2016.

UN-Habitat acknowledges that the LDCF project *Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region*, will complement the work of the mentioned initiatives to: i) incorporate climate change adaptation – in particular EbA strategies – into urban sustainable development; ii) share knowledge of climate change and EbA through Habitat's existing network of national and regional stakeholders; and iii) build the technical and institutional capacity of government authorities to implement adaptation activities that are resilient to climate change.

This letter serves to confirm the LDCF-financed project will build on the ongoing above mentioned UN-Habitat initiatives in Asia-Pacific, and that UN-Habitat Myanmar will provide a total amount of grant co-financing worth US\$1,182,545. This collaboration will provide mutual benefits for UN-Habitat's initiatives and the GEF LDCF project.

We look forward to your continuing cooperation.

Yours sincerely,

Bijay Karmacharya  
Country Programme Manager  
UN-Habitat, Myanmar

18<sup>th</sup> May 2016

Dear Dr Naoko Ishii

**Subject: UN-Habitat co-financing commitment to the GEF LDCF-financed project entitled  
“Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA)  
in the Asia-Pacific region.”**

UN-Habitat is implementing initiatives with a variety of stakeholders across the Asia-Pacific region, including in Cambodia and Laos.

In Cambodia, UN-Habitat is implementing **Enhancing capacity for pro-poor WASH governance at provincial, district and commune levels in Cambodia**. A total of \$200,500 of activities from this project will be used as co-finance. This includes outcomes of the project that relate to i) assessing the gaps and needs for institutional strengthening of sub-national levels in WASH sector, ii) producing national WASH Guide for provincial, district and commune levels, iii) piloting the WASH guide at provincial, district and commune levels

In Laos, UN-Habitat is implementing two projects that can be considered co-finance:

- **Community-based small-scale climate resilient rural water infrastructure project in Attapeu, Sekong and Saravanve in Lao PDR** is being implemented by UN-HABITAT with financing from the International Fund for Agricultural Development (IFAD) and co-financing from the Government of the Lao PDR. A total of US\$253,686 from this project will be used as co-finance. This includes budgets allocated to outputs of the UN-Habitat/IFAD project to provide technical assistance and guidance towards build-back better principles related to Small-scale water infrastructure in selected villages
- **Enhancing water governance through improved decision-making and performance management** is funded through the Governance, Advocacy and Leadership for Water, Sanitation and Hygiene (GoAL WaSH). The objective of GoAL WaSH – which is a joint UN-Habitat and UNDP programme – is to improve decision-making and performance management in the water sector through building capacity and management systems at national, provincial and district levels in Lao PDR and the Mekong Region. A total of US\$ 259,686 will be used as co-financing. This includes budgets allocated to outputs of the UN-Habitat/UNDP project to improve water governance.

UN-Habitat acknowledges that the LDCF project *Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region*. will complement the work of the mentioned initiatives to: i) incorporate climate change adaptation – in particular EbA strategies – into urban sustainable development; ii) share knowledge of climate change and EbA through Habitat’s existing network of national and regional stakeholders; and iii) build the technical and institutional capacity of government authorities to implement adaptation activities that are resilient to climate change.

This letter serves to confirm the LDCF-financed project will build on the ongoing above mentioned UN-Habitat initiatives in Asia-Pacific, and that UN-Habitat in Cambodia and Laos

will provide a total amount of grant co-financing worth US\$713,872. This collaboration will provide mutual benefits for UN-Habitat's initiatives and the GEF LDCF project.

We look forward to your continuing cooperation.

Yours sincerely,

Yours sincerely,

A handwritten signature in black ink, appearing to read "Avi Sarkar", with a long horizontal flourish extending to the right.

Avi Sarkar  
Regional Advisor-South-East Asia  
Urban Basic Service Branch  
UN-HABITAT



Bangkok, 30 March 2016

Dear Naoko Ishii

**Subject: The UNDP-UNEP Poverty-Environment Initiative (PEI) co-financing commitment to the GEF LDCF-financed project entitled “Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region.”**

The Poverty-Environment Initiative (PEI) is a joint UNDP-UNEP global programme working in over 20 countries across Africa, Asia, ECIS and Latin America. PEI supports countries to achieve sustainable development by integrating pro-poor environmental sustainability and climate change issues into development planning, budgeting and investment management processes. The programme supports Ministries of Finance, Planning and Local Government to direct public and private investments to achieve greener, more inclusive economies. PEI Asia –Pacific currently has programmes in eight countries - Bangladesh, Bhutan, Indonesia, Lao PDR, Nepal, Mongolia, Myanmar and Philippines. The teams in these countries are supported by the Regional Asia Pacific Team based at the UNEP and UNDP Regional Offices in Bangkok. While each country programme has been initiated to meet country-level demand and is tailored to specific national policy processes, the regional PEI Asia-Pacific Strategy for 2013-2017 reflects the global PEI Scale-up outputs to promote: i) poverty-environment approaches and tools for integrated development policies, plans and coordination mechanisms are applied; ii) cross-sectoral budget, expenditure frameworks, coordination mechanisms, and environment-economic accounting systems are institutionalised; and iii) poverty-environment approaches and experiences are documented and shared to inform country, regional and global development programming by the UN and Member States.

The UNDP-UNEP PEI acknowledges that the LDCF project *Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region*. will complement the work of the PEI Asia-Pacific programme to: i) incorporate climate change adaptation – in particular EbA strategies – into urban sustainable development; ii) share knowledge of climate change and EbA through the PEI’s existing network of national and regional stakeholders; and iii) build the technical and institutional capacity of government authorities to implement adaptation activities that are resilient to climate change.

This letter serves to confirm the LDCF-financed project will build on the ongoing PEI Asia-Pacific programme, and that PEI Asia-Pacific will provide a total amount of grant co-financing worth US\$2.5 million (over 2016-2017). This collaboration will provide mutual benefits for the UNDP-UNEP PEI and the GEF LDCF project.

We look forward to your continuing cooperation.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'S/Sm'.

Seonmi Choi  
PEI Asia Pacific Regional Advisor  
UNEP Regional Office for Asia and the Pacific



ཐིམ་ཕུག་ཐོག་མེ  
 ཡིག་ཐོ་མཚན་མང-274  
 ཐིམ་ཕུག་ - 77007 འབྲུག་



Thimphu Thromde  
 Post Box No - 215  
 Thimphu-11001: Bhutan



Date: 18<sup>th</sup> Feb.2016

Thimphu Thromde  
 Thimphu, Bhutan.

**Sub: Co-financing of the project “Building climate resilience of urban system through Ecosystem-based Adaptation (EbA) in the Asia-Pacific Region”.**

GEF project for building climate resilience to urban poor and marginalized communities in Asia-Pacific region has confirmed for supporting the ongoing and planned project for Thimphu city. A Project Identification Form (PIF) has been designed and cleared by GEF CEO for a full sized projects of a total amount of US\$ 6 million to reduce the vulnerability of poor urban communities in Asia-Pacific Least Developed Countries to climate change impacts in four medium-sized Asia Pacific cities in the region of four countries – Cambodia, Bhutan, Laos PDR and Myanmar through application of Ecosystem-based adaptation (EbA).

In consultation with city officials chaired by Dasho Thrompon, three ongoing and planned projects 1) Urban Agriculture 2) Resettlement and 3) Riparian/river bank protection was selected in accordance with the three components of LDCF-GEF project. These projects are well aligned with the LDCF-GEF project and seek to achieve complementary objectives on which LDCF project will build. They will provide a total amount of US\$ 1.5 million in co-financing the proposed project granted through the LDCF-GEF project fund.

We are confident that the LDCF-GEF grant of US\$ 1.5 million over the duration of the project will serve to demonstrate the benefits of Ecosystem-Based Adaptation, and the economic relevance of healthy urban ecosystems. We look forward to working with GEF, UNEP and all other stakeholders in this proposed project towards its successful implementation.

*[Handwritten signature]*  
 18/2/16  
 Thrompon  
 Thimphu Thromde

Dasho Thrompon : +975-2-323665 Executive Secretary: +975-2-340355  
 Phone : +975-2-336310/322757/322265 Fax: +975-2-323662/340415/338951/334203  
 www.thimphucity.bt

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**KINGDOM OF CAMBODIA**  
**Nation Religion King**

Ministry of Environment  
N<sup>o</sup> : 568 MoE

Phnom Penh, 25 May 2016

Dr. Naoko Ishii  
Chief Executive Officer and Chairman,  
Global Environment Facility,  
1818 H Street, NW, MSN G6-602, USD,  
Washington DC, 20433.

Dear Dr. Naoko Ishii,

**Subject: Confirmation of co-financing commitment for the Project "Building climate resilience of urban system through Ecosystem-based Adaptation (EbA) in the Asia-Pacific Region"**

I am writing to express our appreciation for assistance of GEF/UNEP framework in developing the above project which aims to promote Ecosystem based Adaptation (EbA) in urban community in Cambodia. Clearly, this proposed project is well aligned with the Cambodia Climate Change Strategic Plan (2014–2023) which is designed to ensure strategic cohesion to address a wide range of climate change issues concerning adaptation. The project will contribute not only climate change adaptation, but also provide co-benefit in addressing local environmental issues in Cambodia.

Recognizing the importance of this project, the National Council for Sustainable Development (NCSD)/Ministry of Environment would like confirm the amount of USD 50,000 as in-kind co-financing to cover office space, water, electricity utilization and the senior government official to be Project Director in the implementation of the proposed GEF project.

We look forward to continuing cooperation in the EbA project implementation.

Please accept, Dr. Naoko Ishii, the assurances of our high consideration.



*[Signature]*  
SAY Samal  
Minister of the Environment and  
Chairman of NCSD

Kingdom of Cambodia  
Nation Religion King

Kep Provincial Hall.

Date... 12. May. 2016

**Dr Naoko Ishii**  
Chief Executive Officer and  
Chairperson, Global Environment  
Facility, 1818 H Street, NW, MSN  
G6-602, USD, Washington  
DC, 20433

Dear Dr. Naoko Ishii

**Subject: Confirmation of co-financing commitment for the Project " Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific Region**

Here with, the Provincial Hall of Kep expresses its commitment of resources allocation towards implement of adaptation activities in the framework of GEF/UNEP project entitled *Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific Region*, which intends to build the climate resilience of cities and associated urban community livelihoods through an ecosystem-based approach.

Kep Province is implementing a variety of development projects to address underlying development issues, including water availability, lack of infrastructure (solid waste collection, waste water management practices, construction of a sea dyke and integrated development planning), and improvement of urban agriculture and livelihood options.

Recognizing the importance of EbA project, Province Kep would like to confirm the amount of US \$1,000,000 as in-kind and cash co-financing covering the period 2016-201X to the proposed GEF/UNEP project as planned activities listed in the annex. This collaboration will build capacity in the country and result in mutual benefits for both programmes by enhancing their outputs.

We look forward to continue cooperation in the EbA project. ✓

Yours sincerely, ✓



**Ken Satha**  
Governor of Kep Province



Lao People's Democratic Republic  
Peace Independence Democracy Unity Prosperity

Provincial of Natural Resource and Environment Department  
Tel/Fax: +856-21-265017  
P.O Box: 7864, Lao PDR

No: 62.7/PoNRE  
Phongsaly, 13 May 2016

To: **Dr Naoko Ishii**  
Chief Executive Officer and Chairperson  
Global Environment Facility  
1818 H Street, NW  
Washington DC, 20433

**Subject: Government co-financing to GEF for supporting the project "Building Climate Resilience of Urban Systems through Ecosystem–Base Adaptation in Lao PDR".**

On behalf of the Provincial of Natural Resource and Environment Department, I am pleased to confirm the operational support for urban facility development project, office facility, equipments maintaining and staffing in Laos as co-financing for GEF to support the "Building Climate Resilience of Urban Systems through Ecosystem–Based Adaptation Project in Lao PDR".

The proposed project is building on the baseline of ongoing and planned programming in the sectors of Well water supply development and Manage watershed protected zoning. Our co-financing for this project is approved by Phongsaly province government to operational budget is currently budgeted at USD 2,200,000 for the GEF project period 2017-2021.

We look forward to collaborating with GEF and UNEP towards an integrated approach to Building Climate Resilience of Urban Systems through Ecosystem–Based Adaptation Project in Lao PDR.

Yours sincerely,

**Mr. Khamchanh SITHILATH**

Director General  
Provincial of Natural Resource and Environment Department  
Tel: 088 210 570  
Fax: 088 210 134  
Mobile: 020 55688 101



Lao People's Democratic Republic  
Peace Independence Democracy Unity Prosperity

Provincial of Natural Resource and Environment  
Tel/Fax: +856-21-265017  
P.O Box: 7864, Lao PDR

No: 1037/PoNRE  
Oudomxay, 12 May 2016

To: **Dr Naoko Ishii**  
Chief Executive Officer and Chairperson  
Global Environment Facility  
1818 H Street, NW  
Washington DC, 20433

**Subject: Government co-financing to GEF for supporting the project “Building Climate Resilience of Urban Systems through Ecosystem–Base Adaptation in Lao PDR”.**

On behalf of the Provincial of Natural Resource and Environment Office, I am pleased to confirm the operational support for urban facility development project, office facility, equipments maintaining and staffing in Laos as co-financing for GEF to support the **“Building Climate Resilience of Urban Systems through Ecosystem–Based Adaptation Project in Lao PDR”**.

The proposed project is building on the baseline of ongoing and planned programming in the sectors of **PhuHePhi Protection Forest Management Project**. Our co-financing for this project is approved by Oudomxay province government to operational budget is currently budgeted at USD **74,000** for the GEF project period 2017-2021.

We look forward to collaborating with GEF and UNEP towards an integrated approach to Building Climate Resilience of Urban Systems through Ecosystem–Based Adaptation Project in Lao PDR.

Yours sincerely,



*[Handwritten Signature]*  
**ບຸນທັນ ຈຳປາສິມະນີ**  
**Bounthan JAMPASIMANY**

Director General  
Provincial of Natural Resource and Environment Office  
Phone/Fax: +856-81-312433  
Mobile: 020 22379990-02028806789  
Email: [bounthan.champasimany@gmail.com](mailto:bounthan.champasimany@gmail.com)  
[khpsteo@hotmail.com](mailto:khpsteo@hotmail.com)



The Government of Mandalay Region  
Mandalay City Development Committee  
Mandalay

No: 1001 / 1 / NKY (0909)

Date: May 13, 2016

Ms. Naoko Ishii  
Chief Executive Officer and Chairperson  
Global Environment Facility

**Subject: Mandalay City Development Committee(MCDC)co-financing commitment to the GEF/ LDCF project entitled " Building climate resilience of urban systems through Ecosystem-based Adaptation(EbA) in the Asia-Pacific Region"**

MCDC is making endeavour the environmental conservation works to reduce, minimise and eliminate the pollution. The following works are now being carried out,

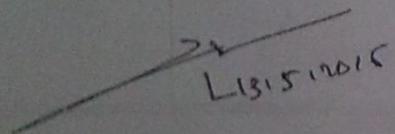
- (a) The waste water from, 93 Factories from Industrial zones are now discharging to Dothawadi river without treatment. Now MCDC signed the BOT contract agreement between MCDC and Hydrotek Supreme Co.Ltd for the implementation of central wastewater pipe lines and treatment system in southern part of Mandalay City. The investment amount of the project is US\$ 18.97 million and the project period will be 2 years commencement from mid 2016.
- (b) By ADB loan Project, the implementation of sewerage system in pilot area, discharging wastewater and storm water separately in the main drains, upgrading of Thingazar Creek, the wastewater treatment system for the treatment of domestic wastewater in the volume of 72727 m<sup>3</sup>,

The initiative to construct the wastewater treatment plant is therefore aligned with the GEF/ LDCF financed project entitled Building Climate resilience of urban system through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region, which intends to build the climate resilience of Cities and associated urban community livelihoods through an ecosystem-based approach.

This letter serves to confirm Mandalay City Development Committee support of US\$ 78.97 M from MCDC Government of Union of Myanmar (ADB loan US\$60 M Hydrotek Co.Ltd US\$ 18.97 M )as co-financing to the GEF/CDEF financed project in Myanmar for the period 2016-2022. This collaboration will build capacity in the Country and result in mutual benefits for both programme by enhancing their outputs.

We look forward to your continued cooperation.

Yours Sincerely,

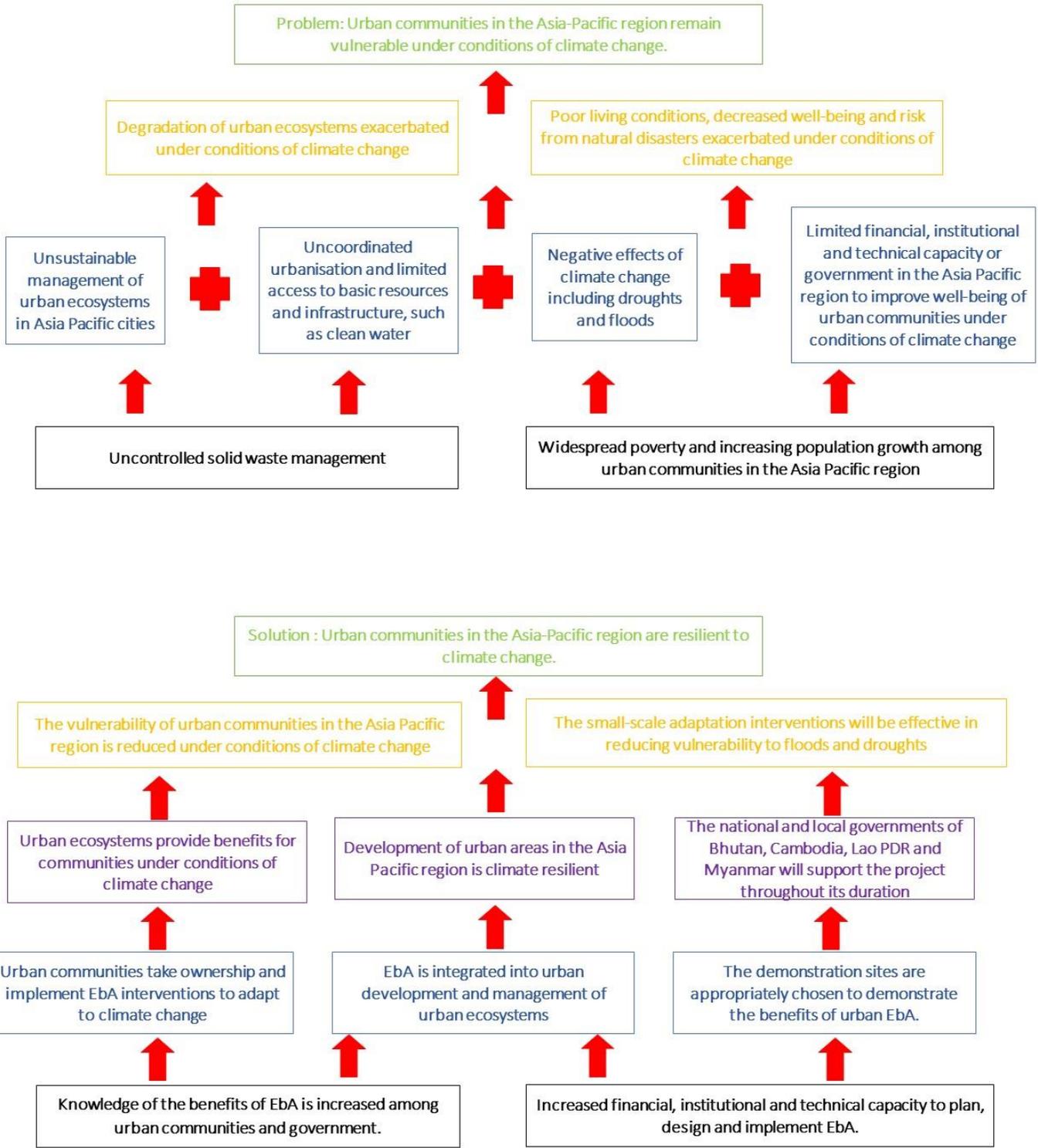


Handwritten signature of U Thet Naing Tun, dated 22/13/15.

U Thet Naing Tun  
Joint Secretary  
Mandalay City Development Committee  
Mandalay, Myanmar



# ANNEX K: PROBLEM AND SOLUTION TREE



## ANNEX L: UNEP SOCIAL AND ENVIRONMENTAL SAFEGUARDS CHECKLIST

### Checklist for Environmental and Social Safeguards

As part of the GEF's evolving Fiduciary Standards Implementing Agencies have to include and address 'Environmental and Social Safeguards'.

To address this requirement UNEP/GEF has developed this checklist with the following guidance:

1. Executing Agency is responsible for completing the checklist with support from UNEP/GEF Task Manager.
2. Checklist shall initially be filled in during concept development to help guide in the identification of possible risks and activities that will need to be assessed and included in the project design.
3. The completed checklist shall accompany the PIF submission.
4. Based on the checklist assessment the UNEP/GEF Task Manager will categorize the project in line with UNEP/GEF guidance.
5. Checklist and planned mitigation measures shall be reviewed annually at PIR stage, to ensure that planned mitigation measures are taking place and that any previously unanticipated issues are identified and addressed.
6. Checklists and implementation of mitigation measures will be reviewed by UNEP/GEF annually during PIR review, at Mid-term and at Terminal Evaluation stage.

<i>Project Title:</i>	<i>Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region.</i>		
<i>GEF project ID and UNEP ID/IMIS Number</i>	<i>5815 01278</i>	<i>Version of checklist</i>	<i>Two</i>
<i>Project status (preparation, implementation, PIRFYXX)</i>	<i>Project Preparation</i>	<i>Date of this version:</i>	<i>30 May 2016</i>
<i>Checklist prepared by (Name, Title, and Institution)</i>			
<i>Project category<sup>28</sup> (to be determined by UNEP/GEF TM/PM)</i>	<i>Atifa Kassam, Task Manager, GEF Climate Change Adaptation Unit, DEPI, UNEP</i>		

***In completing the checklist both temporary, permanent, short- and long-term impact shall be considered.***

#### ***Section A: Project location:***

	<i>Yes/N o/N.A . <sup>29</sup></i>	<i>Description of the issue: Distance, direction, connection to project area and size of applicable category and other relevant criteria.</i>
<i>- Is the project area in or close to -</i>		
<i>- densely populated area</i>	<i>Yes</i>	<i>All project areas (Thimphu (Bhutan), Kep (Cambodia), Phongsaly (Lao PDR), Oudomxay (Lao PDR), and Mandalay (Myanmar)) are within urban areas. Mandalay is densely populated, whereas the other areas have low to moderate population density. People in these areas will experience increased resilience to the effects of climate change, as a result of this project.</i>
<i>- cultural heritage site</i>	<i>Yes</i>	<i>All of the project sites are near to areas with cultural significance. There are no perceived negative implications as a consequence of this project.</i>

<sup>28</sup> Project category refers to categories as outlined in UNEP/GEF Policy Note on Environmental and Social Safeguards.

<sup>29</sup> The N.A. option should be reserved for projects, which do not have a specific location identified, e.g. global or regional projects with a predominantly normative scope.

- protected area	Yes	Thimphu is near to Jigme Dorji National Park. Kep is near to the Kep National Park. Phongsaly town is within Phongsaly province, which has large tracts of protected area. Mandalay is not in close proximity to a protected area.
- wetland	Yes	Thimphu, Kep and Mandalay are in/near wetland areas. Phongsaly and Oudomxay provinces are dominated by wetlands.
- mangrove	Yes	Kep is located in a coastal area with small tracts of degraded mangrove remaining. Phongsaly province has mangroves Mandalay lies next to the Irrawaddy River, which has mangrove forests downstream near the coastal region, but not near Mandalay itself.
- estuarine	Yes	Kep is located within 5 km from an estuarine area.
- buffer zone of protected area	No	
- special area for protection of biodiversity	No	

***In completing the checklist both temporary, permanent, short- and long-term impact shall be considered.***

***Section B: Environmental impacts, i.e.***

	<i>Yes/No/N.A.<sup>30</sup></i>	<i>Description of the issue, e.g. quantification of impact if possible, necessary mitigation measures and further studies required to quantify impact, budget estimates and responsibilities for studies:</i>
- Will project require temporary or permanent support facilities?	Not anticipated	
- Will project cause any loss of precious ecology, ecological, and economic functions due to construction of infrastructure?	Not anticipated	
- Are ecosystems related to project fragile or degraded?	Yes	The wetland systems in and around Thimphu are being converted as a result of economic growth. The LDCF project will restore – and build the resilience of – degraded forest, mangrove and wetland ecosystems using an EbA approach during the implementation phase. Note that the degradation of the wetland and forest ecosystems where the project activities will be implemented is human induced.
- Will project cause impairment of ecological opportunities?	Not anticipated	Ecological opportunities will be increased as a result of the LDCF project.
- Will project cause increase in peak and flood flows? (including from temporary or permanent waste waters)	Not anticipated	The resilience of local communities to floods will be increased.
- Will project cause air, soil or water pollution?	Not anticipated	No pollution will be generated by the project activities.
- Will project cause soil erosion and siltation?	Not anticipated	Soil stability and water infiltration will be enhanced by planting climate-resilient trees as well as through wetland restoration during the implementation phase of this project.

<sup>30</sup> The N.A. option should be reserved for projects, which do not have a specific location identified, e.g. global or regional projects with a predominantly normative scope. Careful consideration of the specific issue should be exercised to determine potential impact, both short- and long-term.

- Will project cause increased waste production?	Not anticipated	No increase in waste production will result from this project.
- Will project cause Hazardous Waste production?	Not anticipated	No hazardous waste will be produced by the activities in this project.
- Will project cause threat to local ecosystems due to invasive species?	Not anticipated	The project will promote planting indigenous and/or non-invasive tree species instead of exotic tree species.
- Will project cause Greenhouse Gas Emissions?	Not anticipated	The project activities will likely decrease atmospheric greenhouse gas concentrations through urban reforestation, urban agriculture and wetland restoration. As a result, carbon will be sequestered in soils and plant biomass.
- Will project cause use of pesticides?	Not anticipated	Multi-use, agroforestry systems will be planted, with inherent resilience to pest invasion. Naturally establishing populations of predators will control pestiferous species.
- Does the project encourage the use of environmentally friendly technologies?	Yes	The implementation of EbA approaches encourages the use of environmentally friendly technologies.
- Other environmental issues, e.g. noise and traffic	Not anticipated	The result of planting multi-use trees in urban areas may lessen noise in urban areas, through sound dampening.

*In completing the checklist both temporary, permanent, short- and long-term impact shall be considered.*

### **Section C: Social impacts**

	<i>Yes/No/N.A.<sup>31</sup></i>	<i>Description of the issue:</i>
- Does the project respect internationally proclaimed human rights including dignity, cultural property and uniqueness and rights of indigenous people?	Yes	All project interventions have been developed in accordance with internationally proclaimed human rights, in conformity with UN guidelines. In addition, all activities were developed together with various stakeholders to ensure that no rights or laws are infringed by the proposed activities.
- Are property rights on resources such as land tenure recognized by the existing laws in affected countries?	Yes	The project facilitates participatory approaches for avoiding any conflicts. In addition, the project will adhere to national and local laws on land rights and land tenure.
- Will the project cause social problems and conflicts related to land tenure and access to resources?	Not anticipated	Project interventions will be informed by socio-economic assessments, through which potential problems related to land tenure and access to resources will be identified and mitigated.
- Does the project incorporate measures to allow affected stakeholders' information and consultation?	Yes	The project has been designed to provide training and information to all targeted indigenous and local communities on adaptation to climate change.
- Will the project affect the state of the targeted country's (-ies') institutional context?	Yes	The project will be beneficial to the institutional context of Bhutan, Cambodia, Lao PDR and Myanmar as it will strengthen the technical and institutional capacity of national and local stakeholders for adaptation to climate change. Local institutions will be provided with EbA training.

<sup>31</sup> The N.A. option should be reserved for projects, which do not have a specific location identified, e.g. global or regional projects with a predominantly normative scope. Careful consideration of the specific issue should be exercised to determine potential impact, both short- and long-term.

- Will the project cause change to beneficial uses of land or resources? (incl. loss of downstream beneficial uses (water supply or fisheries)?	Not anticipated	The project will improve the efficiency of land-use through restoration and introduction of multi-use agro-forestry. Where applicable, water supply downstream will also be improved through increased infiltration and decreased soil erosion/siltation.
- Will the project cause technology or land use modification that may change present social and economic activities?	Not anticipated	
- Will the project cause dislocation or involuntary resettlement of people?	Not anticipated	
- Will the project cause uncontrolled in-migration (short- and long-term) with opening of roads to areas and/or possible overloading of social infrastructure?	Not anticipated	
- Will the project cause increased local or regional unemployment?	Not anticipated	
- Does the project include measures to avoid forced labour and/or child labour?	Yes	The project conforms to all national and international guidelines and laws regarding forced labour. Extensive community engagement will prevent the use of forced labour, and all required labour (short term employment only for establishing specific objectives) will be provided through community engagement and remunerated in accordance with national law.
- Does the project include measures to ensure a safe and healthy working environment for workers employed as part of the project?	Yes	The project will conform to all national and international guidelines and laws regarding health and safety for workers employed as part of the project. Community training will ensure that health and safety regulations are understood.
- Will the project cause impairment of recreational opportunities?	Not anticipated	The project will enhance ecosystem functioning despite the negative impacts of climate change.
- Will the project cause impairment of indigenous people's livelihoods or belief systems?	Not anticipated	All project implementation will be carried out after stakeholder consultation and in accordance with local belief systems. Livelihoods of people in project sites will be improved through the project activities. In addition, the project will enhance understanding of the current and predicted effects of climate change, thereby allowing local communities to adapt to climate change effectively.
- Will the project cause disproportionate impact to women or other disadvantaged or vulnerable groups?	Not anticipated	Women's rights will be promoted in accordance with national legislation, appropriate strategies and UN guidelines for interaction within Bhutan, Cambodia, Lao PDR and Myanmar. Gender has been taken into account throughout the project design. Gender disaggregated indicators have been incorporated. Additionally, the involvement of women in the project is considered in the results based management framework. Importantly, the project will help reduce the exposure of climate vulnerable groups including women.

- Will the project involve and or be complicit in the alteration, damage or removal of any critical cultural heritage?	Not anticipated	
- Does the project include measures to avoid corruption?	Yes	As per UNEP's norms and standards, all project disbursements will be monitored by UNEP administrative structures. Regular reporting by the project management team will promote financial and transparency throughout the project.

**Section D: Other considerations**

	<i>Yes/No/N.A.<sup>32</sup></i>	<i>Description of the issue:</i>
- Does national regulation in affected country (-ies) require Environmental Impact Assessment and/or Social Impact Assessment for this type of activity?	Yes	All activities implemented by the project will be designed to improve environmental conditions in the short to long term. Additionally, EIAs will be conducted to determine the environmental effects generated by the project's interventions. Furthermore, mitigation measures will be undertaken to ameliorate any related negative social or environmental effects.
- Is there national capacity to ensure a sound implementation of EIA and/or SIA requirements present in affected country (-ies)?	Yes	Where appropriate, EIAs will be conducted as required by national legislation for project activities
- Is the project addressing issues, which are already addressed by other alternative approaches and projects?	Yes	The project will implement activities that are additional to baseline activities. This project aims to promote knowledge exchange and facilitate synergies with existing initiatives, but importantly, will avoid duplication of efforts. Areas in which similar interventions are being implemented have been avoided.
- Will the project components generate or contribute to cumulative or long-term environmental or social impacts?	Yes	The project will promote only positive, cumulative environmental and social impacts through EbA and sustainable agriculture.
- Is it possible to isolate the impact from this project to monitor E&S impact?	Yes	The project will be implemented in targeted communities that are particularly vulnerable to climate change. The targets and indicators have been designed to monitor the impact of project outputs and outcomes in isolation.

<sup>32</sup> The N.A. option should be reserved for projects, which do not have a specific location identified, e.g. global or regional projects with a predominantly normative scope. Careful consideration of the specific issue should be exercised to determine potential impact, both short- and long-term.

## ANNEX O: ACRONYM LIST

ACCCRN	Asian Cities Climate Change Resilient Network
ADB	Asian Development Bank
AECOM	AECOM International Development
AFO	Administration and Finance Officer
APAN	Asian Pacific Adaptation Network
AWPs	Annual Work Plans
BAP	Biodiversity Action Program
BBB	Build Back Better
BMU	Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety of Germany
CAWA	Climate Adaptation in Wetlands Areas
CCA	Climate Change Adaptation
CCaR	Coastal Cities at Risk
CCAU	Climate Change Adaptation Unit
CCCA	Cambodia Climate Change Alliance
CCCI	Cities and Climate Change Initiative
CCCSP	Cambodia Climate Change Strategic Plan
CCTT	Climate Change Technical Team
CDAs	City Development Authorities
CDC	Council for the Development of Cambodia
CDM	Clean Development Mechanism
CGCM	Core Group for Climate Change Mainstreaming
CTCN	Climate Technology Centre and Network
DAFO	District Agriculture and Forestry Office
DCC	Department of Climate Change
DEPI	Department of Environmental Policy Implementation
DDMCC	Department of Disaster Management and Climate Change
DMH	Department of Meteorology and Hydrology
DNA	Designated National Authority
DoNRE	District Natural Resource and Environment Office
DPIO	District Planning and Investment Office
DUDES	Department of Urban Development and Engineering Services
EbA	Ecosystem-based Adaptation
ECD	Environment Conservation Department
ECL	Environment Conservation Law
EOU	Evaluation Office of UNEP
EU	European Union
FAO	Food and Agricultural Organisation
FD	Forestry Department
FDI	Foreign Direct Investment
GEF	Global Environmental Facility
GDP	Gross Domestic Product

GHG	Green House Gas
GMS	Greater Mekong Subregion
GoAL WaSH	Governance, Advocacy and Leadership for Water, Sanitation and Hygiene
GoL	Government of Lao
IA	Implementing Agency
ICLEI	International Council for Local Environmental Initiatives
IFAD	International Fund for Agriculture Development
INC	Initial National Communication
INDC	Intended Nationally Determined Contribution
IUCN	International Union for Nature Conservation
LAC	Latin American and Caribbean
LDCs	Least Developed Countries
M&E	Monitoring and evaluation
MAF	Ministry of Agriculture and Forestry (Lao)
MAFF	Ministry of Agriculture, Forestry and Fisheries
MDGs	Millennium Development Goals
MEK-WATSAN	Mekong Region Water and Sanitation Initiative
MIME	Ministry of Industry, Mines and Energy
MLFRD	Ministry of Livestock, Fisheries and Rural Development
MLMUPC	Ministry of Land Management, Urban Planning and Construction
MLSW	Ministry of Labour and Social Welfare
MNREC	Ministry of Natural Resources and Environmental Conservation
MoAF	Ministry of Agriculture and Forests
MoAI	Ministry of Agriculture and Irrigation
MoE	Ministry of Environment
MoEA	Ministry of Economic Affairs
MoECAFF	Ministry of Environmental Conservation and Forestry
MoH	Ministry of Health
MoNRE	Ministry of Natural Resources and Environment
MoT	Ministry of Tourism
MOT	Ministry of Transport
MoWHS	Ministry of Works and Human Settlement
MoWRAM	Ministry of Water Resources Management
MPI	Ministry of Planning and Investment
MPWT	Ministry of Public Works and Transportation
MRD	Ministry of Rural Development
NAP	National Adaptation Plan
NAPA	National Adaptation Programme of Action
NCCC	National Climate Change Committee
NCDM	National Committee for Disaster Management
NCSD	National Council for Sustainable Development
NCU	National Coordination Units
NDMC	National Disaster Management Committee
NDMO	National Disaster Management Office
NEC	National Environment Commission

NEC-CD	National Environment Commission's Climate Division
NGOs	Non-governmental Organisations
NSDP	National Strategic Development Plan
NSDS	National Sustainable Development Strategy
NTEs	National Technical Experts
PACC	Pacific Adaptation to Climate Change Programme
PAFO	Provincial Agriculture and Forestry Office
PC	Programme Coordinator
PEI	Poverty-Environment Initiative
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
PIR	Project Implementation Review
PLPDO	Provincial Land Planning and Development Office
PMU	Project Management Unit
PMWG	Project Manager's Working Group
PoNRE	Provincial Natural Resource and Environment
PPD	Policy and Planning Division
PPIO	Provincial Planning and Investment Office
PSC	Project Steering Committee
RBF	Results-based Framework
RC	Regional Coordinator
RGoB	Royal Government of Bhutan
ROAP	Regional office for Asia and the Pacific
RNR	Renewable Natural Resources
RSU	Regional Support Unit
SAW	Strategy for Agriculture and Water
SCCF	Special Climate Change Fund
SDS-SEA	Sustainable Development Strategy for the Seas of East Asia
SEAKB	Seas of East Asia Knowledge Bank
SEA START	South East Asia Systems for Analysis Research and Training
SEC	Southern Economic Corridor
SNAP	Strategic National Action Plan
SPCZ	South Pacific Convergence Zone
TA	Technical Advisor
TM	Task Manager
TNAs	Technical Needs Assessment
TWG	Technical Working Group
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Conventions to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations Office for Disaster Risk Reduction
WAC	Water for Asian Cities Programme
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation