



GLOBAL ENVIRONMENT FACILITY
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February 03, 2017

Dear LDCF/SCCF Council Member,

I am writing to notify you that we have today posted on the GEF's website at www.TheGEF.org, a Project Identification Form (PIF) for a full-sized project proposal from UNEP entitled ***Nepal: Ecosystem-Based Adaptation for Climate-resilient Development in the Kathmandu Valley, Nepal (GEF ID: 8009)***, for funding under the Least Developed Countries Fund (LDCF). This PIF has been posted for Council approval by mail. Council Members are invited to review the PIF and to submit their comments (in Word file) to the GEF Secretariat's program coordination registry at gcoordination@TheGEF.org by March 03, 2017.

Following the streamlined procedures for processing LDCF proposals, Council members are invited to approve the following decision:

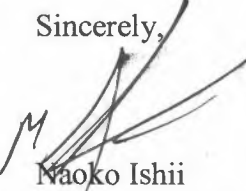
*The LDCF/SCCF Council reviewed the PIF entitled **Nepal: Ecosystem-Based Adaptation for Climate-resilient Development in the Kathmandu Valley, Nepal (GEF ID: 8009)** (LDCF Project Grant \$6,242,700) (Agency Fee \$593,057), posted on February 03, 2017 and approves it on a no objection basis subject to the comments submitted to the Secretariat by March 03, 2017.*

The Council finds that the PIF (i) is, or would be, consistent with the Instrument and GEF policies and procedures, and (ii) maybe endorsed by the CEO for final approval by the GEF Agency, provided that the final project document fully incorporates and addresses the Council's and the STAP reviewer's comments on the PIF, and that the CEO confirms that the project continues to be consistent with the Instrument and GEF/LDCF/SCCF policies and procedures.

The final project document will be posted on the GEF website for information after CEO endorsement. If the GEF CEO determines that there has been a major change to the present scope and approach since PIF approval, the final project document shall be posted on the web for Council review for four weeks prior to CEO endorsement.

In accordance with this decision, if the Secretariat has not heard from you in writing by March 03, 2017 we will assume that you approve the PIF.

Sincerely,



Naoko Ishii
Chief Executive Officer and Chairperson

Copy to: Country Operational Focal Point, Alternates, GEF Agencies, STAP, Trustee

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PROJECT IDENTIFICATION FORM (PIF).

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: LDCF

For more information about GEF, visit TheGEF.org

PART I: PROJECT INFORMATION

| | | | |
|-----------------------------|---|------------------------------|---|
| Project Title: | Ecosystem-Based Adaptation for climate-resilient development in the Kathmandu Valley, Nepal | | |
| Country(ies): | Nepal | GEF Project ID: ¹ | 8009 |
| GEF Agency(ies): | UNEP | GEF Agency Project ID: | 1338 |
| Other Executing Partner(s): | Kathmandu Valley Development Authority (KVDA) | Submission Date: | 30/12/2014 |
| GEF Focal Area(s): | Climate Change | 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 (\$) | 593,057 |

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES²:

| Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs) | Trust Fund | (in \$) | |
|--|------------|-----------------------|--------------|
| | | GEF Project Financing | Co-financing |
| CCA-1, Outcome 1.1 | LDCF | 5,145,025 | 13,554,000 |
| CCA-2, Outcome 2.1 | LDCF | 578,490 | 1,150,000 |
| CCA-3; Outcome 3.2 | LDCF | 519,185 | 480,000 |
| Total Project Cost | | 6,242,700 | 15,184,000 |

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

| Project Objective: <i>To increase capacity of communities living in the Kathmandu Valley to adapt to the negative effects of climate change using EbA</i> | | | | | |
|---|-----------------------------|--|------------|-----------------------|-------------------|
| Project Component | Financing Type ³ | Project Outcomes | Trust Fund | (in \$) | |
| | | | | GEF Project Financing | Co-financing |
| Component 1: Mainstreaming EbA into development planning in the Kathmandu Valley. | TA | Outcome 1: Capacity of national government and local municipalities to integrate EbA into development planning in the Kathmandu Valley ⁴ increased. | LDCF | 415,140 | 456,000 |
| Component 2: Knowledge management and awareness on EbA in the Kathmandu Valley. | TA | Outcome 2: Knowledge and awareness on EbA of local communities living in the Kathmandu Valley enhanced. | LDCF | 474,445 | 1,092,500 |
| Component 3: EbA interventions to establish climate-resilient communities in the Kathmandu Valley. | Inv | Outcome 3: Local communities in the Kathmandu Valley implementing EbA to manage the effects of climate change. | LDCF | 5,040,980 | 12,876,300 |
| Subtotal | | | | 5,930,565 | 14,424,800 |
| Project Management Cost (PMC) ⁵ | | | | 312,135 | 759,200 |
| Total Project Cost | | | | 6,242,700 | 15,184,000 |

¹ Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.

² When completing Table A, refer to the GEF Website, *Focal Area Results Framework* which is an *Excerpt from GEF-6 Programming Directions*.

³ Financing type can be either investment or technical assistance.

⁴ Capacity will be measured using a scorecard before and after proposed LDCF-financed interventions.

⁵ 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.

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

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

| Sources of Co-financing | Name of Co-financier | Type of Co-financing | Amount (\$) |
|---------------------------|--|----------------------|-------------|
| International donor | Asian Development Bank (Bagmati River Basin Project) | Grant | 7,522,500 |
| International donor | World Bank through the Japan Social Development Fund (Pro-Poor Urban Regeneration Project) | Grant | 2,750,000 |
| National Government | Government of Nepal (Kathmandu Valley Road Improvement Project) | Grant | 4,911,500 |
| Total Co-financing | | | 15,184,000 |

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS^{a)}

| GEF Agency | Trust Fund | Country/ Regional/ Global | Focal Area | Programming of Funds | (in \$) | | |
|----------------------------|------------|------------------------------|------------|------------------------|---------------------------|------------------------------|---------------|
| | | | | | GEF Project Financing (a) | Agency Fee (b) ^{b)} | Total (c)=a+b |
| | | | | (select as applicable) | | | |
| Total GEF Resources | | | | | 0 | 0 | |

a) No need to fill this table if it is a single Agency, single Trust Fund, single focal area and single country project.

b) Refer to the [Fee Policy for GEF Partner Agencies](#).

E. PROJECT PREPARATION GRANT (PPG)⁶

Is Project Preparation Grant requested? Yes No If no, skip item E.

PPG AMOUNT REQUESTED BY AGENCY (IES), TRUST FUND, COUNTRY (IES) AND THE PROGRAMMING OF FUNDS

| GEF Agency | Trust Fund | Country/ Regional/Global | Focal Area | Programming of Funds | (in \$) | | |
|-------------------------|------------|-----------------------------|----------------|------------------------|---------|-----------------------------|-----------------|
| | | | | | PPG (a) | Agency Fee ⁷ (b) | Total c = a + b |
| UNEP | LDCF | Nepal | Climate Change | (select as applicable) | 150,000 | 14,250 | 164,250 |
| Total PPG Amount | | | | | 0 | 0 | 164,250 |

⁶ PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to \$50k for PF up to \$1 mil; \$100k for PF up to \$3 mil; \$150k for PF up to \$6 mil; \$200k for PF up to \$10 mil; and \$300k for PF above \$10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

⁷ PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

PART II: PROJECT JUSTIFICATION

A. PROJECT OVERVIEW

A.1. Project Description

*A.1.1. The **project problem**, root causes and barriers that need to be addressed*

Local communities in cities throughout the world⁸ are experiencing negative effects of climate change. These local communities rely strongly on the basic services that are supplied by urban infrastructure. Generally, this infrastructure – including road networks and water pipes – is not climate-resilient and is vulnerable to climate-related hazards such as floods and slope failures. Furthermore, urban communities are particularly vulnerable to the effects of climate change because they have limited access to the goods and services provided by intact and functioning ecosystems. In contrast, rural communities are able to use such goods and services as safety nets during periods of hardship. As growing metropolitan areas result in land transformation and habitat degradation⁹, the integrity of ecosystems that exist within and around cities is threatened.

The Kathmandu Valley is one of the fastest-growing metropolitan areas in South Asia¹⁰. The human population in the valley is growing rapidly with an annual growth rate of 4%. The current population of ~2.5 million is projected to be ~3.8 million by 2020 and ~6.2 million by 2030. As a result of population growth during the period 1990–2012, the built-up area in the valley increased by 211% – from 38 km² to 119 km²¹¹. By 2020, it is projected that this will further increase by ~140% (162 km²) and by 2030, ~180% (214 km²).

This rapid urbanisation in the Kathmandu Valley has occurred within a context of limited urban planning capacity. Consequently, urban authorities are experiencing pressure to increase basic services and infrastructure. Related to this growing demand for resources – particularly food and water – agricultural land and water resources are under threat by accelerated encroachment.

Urban and peri-urban ecosystems – including wetlands, green spaces, agricultural land and forests – provide a wide range of important services for urban communities. These services include the provision of natural resources (e.g. food and water) and regulatory functions (e.g. flood mitigation, water filtration, micro-climate regulation and waste decomposition). Furthermore, urban ecosystems provide protective, recreational and cultural benefits while improving the aesthetics of cities. However, these ecosystems are threatened by the current and projected trends of urban expansion. For example, from 2000–2012, ~13% of agricultural land was displaced in the Kathmandu Valley¹². Although the urban environment accounts for only 16% of the total area of the Kathmandu Valley, urban expansion has already resulted in notable damage to wetlands, natural ponds and rivers in the valley. This has compromised ecosystem goods and services such as the recharge of groundwater resources.

The environmental degradation in the Kathmandu Valley has negative effects on communities living in this area because of the resulting reduction in services provided by degraded ecosystems. The urban poor, who often have limited access to basic services and therefore rely largely on ecosystem services, are particularly vulnerable to

⁸ The World Bank. 2010. Cities and climate change: an urgent agenda. Urban development series knowledge papers. Available at: <http://siteresources.worldbank.org/INTUWM/Resources/340232-1205330656272/CitiesandClimateChange.pdf> . Accessed on 20 August 2014.

⁹ Zipperer, W.C. 2012. Urban Ecology: Patterns of Population Growth and Ecological Effects. Available at: <http://onlinelibrary.wiley.com/doi/10.1002/9780470015902.a0003246.pub2/full>. Accessed on 20 August 2014.

¹⁰ Muzzini, E. and Aparicio, G. 2013. Urban growth and spatial transition in Nepal: an initial assessment. Directions in development. The World Bank, Washington, D.C. Available at <http://issuu.com/world.bank.publications/docs/9780821396599>. Accessed on 7 August 2014.

¹¹ Joshi, A., Basnet, S., Dawadi, G.S., Duwal, S., Pandey, K.R. and Irwin, D. 2013. Urban growth pattern in Kathmandu Valley. Unpublished. Kathmandu: Genesis Consultancy and Welink Consultants.

¹² Joshi, A., Basnet, S., Dawadi, G.S., Duwal, S., Pandey, K.R. and Irwin, D. 2013. Urban growth pattern in Kathmandu Valley. Unpublished. Kathmandu: Genesis Consultancy and Welink Consultants.

environmental degradation¹³. Urban poverty is already a recognised problem in the Kathmandu Valley because of few employment opportunities, increasing land prices and rural migration, as well as limited access to basic urban services¹⁴. This poverty results in squatter settlements that present both socio-economic and environmental problems¹⁵.

The rapid urbanisation associated with poverty and environmental degradation, as well as the consequent vulnerability of urban communities in the Kathmandu Valley, are likely to increase because of the effects of climate variability and change. In general, the region experiences: i) increasing maximum temperatures (an average of 0.6 °C/decade); ii) shifting rainfall patterns (which results in unpredictable timing of the monsoon season); and iii) an increasing frequency of climate-induced extreme events, including droughts and floods¹⁶. In addition, the increased effect of rainfall, in conjunction with climate-related soil degradation, has resulted in an increased frequency of slope failures in some Village Development Committee (VDCs) areas¹⁷. Under the observed and predicted effects of more frequent and severe droughts, water supply will decrease while water demand will increase in urban areas¹⁸. Recently, the rate of groundwater abstraction in the valley has increased. This increase has resulted in a lowering of the groundwater table (up to 6 m in some areas). A reduction in water availability will adversely affect water supply for domestic use and economic sectors, including agriculture. Consequently, food security and income streams for the Kathmandu Valley's growing population will be compromised.

To manage the effects described above, the local government of the Kathmandu Valley need to find cost-effective and concrete solutions for integrating adaptation to climate change into social and economic development. Currently, at a national and municipal level, these stakeholders have limited capacity to: i) select and integrated appropriate interventions for adaptation to climate change into development planning; ii) allocate proportions of the annual budget to support the integration of appropriate interventions; and iii) coordinate and implement these interventions in the valley. In particular, institutions that are responsible for planning, management and development in the Kathmandu Valley are unaware of the benefits of implementing Ecosystem-based Adaptation (EbA) to adapt to climate change. In addition, these stakeholders are unaware of the material that is available to support the process of selecting EbA according to particular climate-related vulnerabilities. Consequently, these stakeholders currently have limited capacity to transfer this technology to the large proportion of poor communities that live in the Kathmandu Valley¹⁹. In particular, these communities have limited knowledge, awareness and technical capacity to implement this approach.

EbA provides an effective way to reduce climate change vulnerability while providing multiple benefits to local communities and the environment, by protecting, maintaining and rehabilitating ecosystems²⁰. Examples of EbA interventions that have been implemented in urban areas include: i) urban reforestation, which limits urban heat-island effects, mitigates flooding and enhances groundwater recharge²¹; ii) restoration of urban wetlands, which filter water and promote infiltration; and iii) urban agriculture, which builds the climate resilience of vulnerable urban communities by diversifying food sources and income streams. Importantly, EbA has been shown to require comparatively small investments relative to the long-term social, economic and environmental benefits²².

¹³Winchester, L. 2008. Harmony and dissonance between human settlements and the environment in Latin America and the Caribbean. Santiago, Chile: Economic Commission for Latin America and the Caribbean (ELAC), German Agency for Technical Cooperation (GTZ) and Germany's Federal Ministry for Economic Cooperation and Development (BMZ).

¹⁴Joshi, A., Basnet, S., Dawadi, G.S., Duwal, S., Pandey, K.R. and Irwin, D. 2013. Urban growth pattern in Kathmandu Valley. Unpublished. Kathmandu: Genesis Consultancy and Welink Consultants.

¹⁵Toffin, G. 2010. Urban fringes: squatter and slum settlements in the Kathmandu Valley (Nepal). *Contributions to Nepalese Studies* 37(2): 151-168.

¹⁶Government of Nepal (GoN), NAPA, 2010.

¹⁷UN-HABITAT. 2012. Decentralization and climate change: Nepal country paper. Presentation available at: <http://www.unhabitat.lk/downloads/Nepal.pdf>. Accessed on 22 August 2014.

¹⁸IPCC. 2007. *Climate Change 2007: Impacts, Adaptation and Vulnerability*. In: M. Parry, O. Canziani, J. Palutikof, L. P. J. V. Der, and C. Hanson (Eds.), *Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, UK: Cambridge University Press.

¹⁹ Dahal, K. 2011. Urban poverty: a study of income patterns and processes of the poor families in Kathmandu. *Banking Journal* (1): 29-45. Available online at: <file:///C:/Users/Gill/Downloads/5142-17991-1-PB.pdf>. Accessed on 4 25 November 2014.

²⁰Jones, H.P., Hole, D.G. & Zavaleta, E.S. 2012. Harnessing nature to help people adapt to climate change. *Nature Climate Change* 2: 504-509.

²¹Some tree species provide additional benefits to human populations through the provision of non-timber forest products (NTFPs) including nuts, seeds, berries, medicinal plants, fuelwood, fodder and construction materials.

²²UNEP/STREP 2012. A comparative analysis of ecosystem-based adaptation and engineering options for Lami Town, Fiji: Synthesis Report.

The problem that the proposed LDCF project (hereafter referred to as the proposed LDCF-financed project) **seeks to address** is that local communities in the Kathmandu Valley are vulnerable to the effects of climate change, in particular floods and drought that exacerbate development and environmental pressures. Moreover, these communities lack the capacity and financial resources to adapt to the negative impacts of climate change. Consequently, there is an urgent need to implement adaptation interventions that: i) are cost-effective; ii) reduce the exposure to the frequent climate-induced disasters; iii) support investments in developing urban infrastructure to increase the climate change resilience of the city; and iv) reduce the vulnerability of urban people in general, and indigenous and local communities that live in the Kathmandu Valley, in particular.

The **proposed response** is to implement Ecosystem-based Adaptation (EbA) in the Kathmandu Valley. This will be achieved by demonstrating EbA interventions in the main urban and peri-urban centres of the Kathmandu Valley. Furthermore, EbA will be integrated into development planning in the valley, thereby promoting medium- to long-term planning for adaptation to climate change. In addition to the on-the-ground interventions, government and communities will be trained on climate change and EbA to manage the effects of climate change in the valley. Similarly, knowledge on the design and implementation of EbA will be disseminated to the public.

Significant barriers to achieving the implementation of EbA exist in the Kathmandu Valley. These barriers include limitations in: i) institutional capacity to coordinate the implementation and upscaling of EbA interventions; ii) resources allocated to EbA in government development plans, policies and strategies; iii) evidence to demonstrate the benefits of EbA to policy- and decision-makers; and iv) understanding of local urban communities of the benefits of EbA because of few on-the-ground examples.

The proposed LDCF-financed project will contribute to **overcoming the above adaptation barriers** by: i) integrating EbA – which is a cost-effective option for adaptation – into local and national government development planning, including in medium- and long-term plans; ii) enhancing awareness of EbA and strengthening technical capacity to implement this approach; and iii) demonstrating EbA interventions to increase local community resilience to climate change in the Kathmandu Valley.

A.1.2. The baseline scenario and associated baseline project

Currently, the Kathmandu Valley is experiencing rapid population growth that has resulted in unregulated urban expansion. Consequently, there has been an increase in pollution, water scarcity and health problems among the valley's local communities. Moreover, the integrity of ecosystems and availability of productive agricultural land has decreased. To address these problems, initiatives have been implemented that focus on social and economic development, infrastructure for urban development, water management and ecosystem restoration. However, most of these initiatives have a limited or non-existent climate change focus. In particular, tailored EbA is not integrated into their activities. Therefore, local communities in the valley that are targeted by these initiatives remain vulnerable to the negative effects of climate change.

The initiatives described below are potential baseline co-financing projects for the proposed project. For a more comprehensive description of the proposed project activities, and how these will build on the baseline projects, see Section A.1.4. The co-financing amounts provided by the baseline projects are based on consultations with relevant stakeholders. These amounts will be validated at PPG phase.

- The **Bagmati River Basin Project** (BRBP) has a budget of US \$36,500,000 for 2014-2020 (of which this project is seeking co-financing of US \$7,522,500). The Asian Development Bank (ADB) funds this project and the Water Financing Partnership Facility (WFPM) is providing technical assistance. The five overarching objectives of this project are to: i) establish systems and build capacity for integrated and participatory management of the river basin; ii) improve riverbanks in urban areas; iii) increase water availability during the dry season through watershed conservation; iv) establish a functioning flood forecasting and early warning system; and v) promote efficient project management through effective stakeholder communication. The proposed project will build on the BRBP by implementing EbA to restore wetlands and promote riverbank conservation along lengths of rivers that run through the Kathmandu Valley. Within Component 1, the proposed LDCF-financed project will integrate training on selecting and implementing EbA to restore wetlands

into the training and capacity building activities that are implanted by the BRBP. In addition, climate-resilient species will be identified within Component 3 of the proposed project to be used in on-the-ground activities that are implemented by BRBP to improve riverbanks in urban areas. Importantly, research will be conducted within Component 2 of the proposed project to measure the effectiveness of EbA interventions that will be implemented. Also within this component, novel research on EbA for the Kathmandu Valley will be generated and shared with the public. This generation and dissemination of knowledge on EbA will promote sustainability of the activities that are implemented by BRBP.

- The **Kathmandu Valley Road Improvement Project (KVRIP)** has a budget of US \$67,500,000 for 2013-2019 (of which this project is seeking co-financing of US \$4,911,500) and is being financed and implemented by the Government of Nepal (GoN). The objective of this project is to improve roads to manage the increasing volume of traffic that is using these transport systems. To this end, this project will widen and upgrade the road network in the Kathmandu Valley. The proposed project will bolt onto and climate proof KVRIP's on-the-ground activities, by implementing EbA along the lengths of roads that are being widened and improved. To this end, the proposed LDCF-financed project will promote vegetation cover and soil stability. Importantly, these interventions will also reduce the risk of slope failures along the sides of these roads.
- The objectives of the **Pro-poor Urban Regeneration Pilot Project (PPURPP)** (2014-2017), which is funded by the World Bank through the Japan Social Development Fund (of which this project is seeking co-financing of US\$2,750,000), are to: i) contribute to improving the living conditions of vulnerable households in selected wards in Lalitpur, Kathmandu. These objectives will be achieved by: i) piloting activities for urban regeneration; and ii) demonstrate the feasibility of an integrated urban regeneration approach to decision-makers in Kathmandu Valley. The objectives of PPURPP will be achieved through activities, including *inter alia* increasing access to income-generating opportunities in cultural industries. The proposed LDCF-financed project will develop climate-resilient livelihoods for local communities in the Kathmandu Valley, thereby contributing to – and climate-proofing – the objectives of the Pro-poor Urban Regeneration Pilot Project. In addition, climate-resilient livelihood development and water conservation to support such livelihoods will be integrated into the capacity building activities of the PPURPP. Moreover, knowledge on EbA to increase the climate resilience of income-generating opportunities in the valley will be developed and disseminated to local communities. Consequently, the PPURPP will be sustainable in the long-term.

Other baseline projects – on which the proposed LDCF-financed project will build – are described below. These initiatives are relevant to the baseline scenario and consultations with relevant stakeholders have been conducted to determine the benefits that the proposed project will have on these initiatives. However, co-financing has not been secured by these projects. During the PPG phase, opportunities to secure co-financing from these initiatives will be explored.

- The **KVDA** coordinates **business-as-usual development in the Kathmandu Valley**. As such, this authority functions as a planning, regulating and development agency for the valley, including for green spaces. The proposed project will build on these initiatives by implementing EbA in these spaces. This EbA will include establishing: i) urban forests by planting trees that have deep root systems, are useful to local communities and improve groundwater recharge, and; ii) climate-resilient community gardens.
- The **Melamchi Water Supply Project (MWSP)** has a total budget of US\$355,000,000 and is being funded by ADB, JICA, NORAD, OPEC and NDF. This project is being executed by the Ministry of Physical Planning and Works (MPPW). The project began in 2000 and will continue until 2016, with the objective to reduce the water shortage that is currently experienced by communities living within the Kathmandu Valley. This objective will be achieved by diverting water from the Melamchi River in Sindhupalchowk District to Kathmandu. By implementing EbA to restore wetlands along lengths of rivers in the Kathmandu valley, the proposed project will promote regulation of water flow and improve water quality, which will provide benefits throughout the valley. These benefits will promote sustainability of the MWSP in the long-term.
- The **Kathmandu Valley Wastewater Management Project (KVVMP)** has a budget of US\$137,000,000, (financed by ADB) and is being implemented from 2014-2018. The main objective of this project is to rehabilitate and expand the sewage network and improve the management of wastewater in the Kathmandu Valley. In so doing, there will be a reduction of wastewater and pollution flowing into the Bagmati River. By implementing EbA to restore wetlands, the proposed project will complement the objectives of the KVVMP to improve water management and quality in the Kathmandu Valley.

- The activities that are implemented under the **Sadharan Tarkari Utpadan Karyakram (General Vegetables Production Programme)** supports household vegetable production to promote food security and promote greenery. Activities are coordinated and implemented by municipalities. The proposed LDCF-financed project will build on these activities by promoting climate-resilient rooftop agriculture.

*A.1.3. The proposed **alternative scenario**, with a brief description of expected outcomes and components of the project*

The proposed alternative scenario will increase the capacity of institutions and local communities in the Kathmandu Valley to implement EbA to reduce their vulnerability. The EbA approach will be implemented to enhance the services that ecosystems in this valley provide. These services include: i) protection and regulation of water supplies; ii) provision of agricultural products and other ecosystem goods; and iii) buffering against climate-related events such as floods and slope failures²³. To this end, EbA will be implemented to: i) increase the resilience of riparian ecosystems; ii) promote groundwater recharge and livelihood diversification in existing parks and other public spaces; and iii) stabilise slopes. To implement, sustain and upscale this approach to climate change adaptation, the proposed LDCF-financed project will: i) strengthen the technical and institutional capacity of local and national governments to integrate EbA into development planning; and ii) enhance knowledge and awareness among the public – including government, NGOs, CSOs and local communities – of this approach.

By implementing the interventions described above, the proposed project will address five National Adaptation Programme of Action (NAPA) priorities, namely Priorities: 1 – Promoting Community-based Adaptation through Integrated Management of Agriculture, Water, Forest and Biodiversity Sectors; 5 – Forest and Ecosystem Management for Supporting Climate-Led Adaptation Innovations; 7 – Ecosystem Management for Climate Adaptation; 8 – Empowering Vulnerable Communities through Sustainable Management of Water Resource and Clean Energy Supply; and 9 – Promoting Climate Smart Urban Settlement. Moreover, the proposed project will support the development of the Kathmandu Adaptation Plan of Action (KAPA) under the Local Adaptation Plan of Action (LAPA) framework²⁴. In particular, the proposed project is aligned with LAPA objectives to: i) identify the VDCs, municipalities, wards and local communities that are most vulnerable to climate change, as well as their adaptation challenges and opportunities, including possible activities; ii) identify and prioritise adaptation actions so that the needs of local communities are prioritised; iii) identify and mobilise appropriate service delivery agents and necessary resources; iv) adopt and/or implement adaptation actions sequentially by the service providers in a timely and resource efficient manner; v) and identify cost-effective adaptation alternatives that can be upscaled into local to national planning.

The proposed project consists of three major components, described below. A detailed description of the adaptation scenario funded by LDCF resources is presented in Section A.1.4 with indicative activities presented in Appendix 4.

Component 1. Mainstreaming EbA into development planning in the Kathmandu Valley

Activities under this component will strengthen the technical and institutional capacity of the Kathmandu authorities to plan and implement EbA in riparian areas as well as existing public open spaces that are used by local communities. This will be achieved by:

- designing municipal-level roadmaps for the development of the Kathmandu Valley that include cost-effective EbA²⁵;
- developing local adaptation planning process that promote EbA;
- developing policy briefs on EbA topics – including resilient urban ecosystems and water resources for adaptation to climate change – to inform policy-makers and to support climate change negotiation processes;

²³ RUAF. 2014. Urban agriculture and climate change. Available at: <http://www.ruaf.org/sites/default/files/Flyer%20UPAF%20in%20city%20climate%20change%20strategies.pdf>. Accessed on 28 August 2014. Accessed on 4 November 2014.

²⁴ The National Framework for the LAPA was developed by Climate Change Division under the Ministry of Science in 2011. This framework provides principles, preparation steps and tools to implement the NAPA priorities at a local level.

²⁵ For example, Integrated Urban Water Management (IUWM), Sustainable Urban Drainage Systems (SUDs), urban agriculture and urban forestry.

- training local- and national-level stakeholders on the effects of climate change in the Kathmandu Valley; and monitoring the implementation of municipal-level roadmaps to manage these effects;
- reviewing policies, strategies and plans for relevant sectors (including *inter alia* urban development, forestry and water management) to identify entry points for EbA interventions that are included in the roadmaps; and
- providing orientation programmes for policy- and decision-makers on these recommended revisions.

Component 2. Knowledge management and awareness on EbA in the Kathmandu Valley

Activities under this component will enhance the awareness of local communities living in the Kathmandu Valley of EbA for adaptation to climate change. Moreover, knowledge on EbA for the valley will be generated and disseminated to inform on-the-ground interventions. These activities will promote the upscaling and sustainability of the EbA interventions that are implemented within Component 3. Knowledge and awareness of EbA will be enhanced by:

- establishing frameworks – within local research institutions and universities – for measuring the medium- and long-term effects of EbA interventions that are implemented within Component 3;
- facilitating EbA projects that are designed and implemented by schoolchildren;
- documenting, packaging and disseminating knowledge – including good practices, lesson learned, research needs and opportunities – on EbA²⁶; and
- designing and implementing awareness campaigns on the benefits of EbA to adapt to climate change in the Kathmandu Valley.

Component 3. EbA interventions to establish climate-resilient communities in the Kathmandu Valley

Activities under this component will implement EbA interventions on the ground. By implementing this climate-resilient approach, water conservation, restoration of vegetation, soil stability and livelihood diversification will be supported by:

- developing technical guidelines for EbA in the Kathmandu Valley – that will be implemented within Component 3 – and training local government, NGOs, CBOs and user groups at intervention sites on EbA;
- designing protocols for implementing cost-effective EbA in the Kathmandu Valley; and
- selecting, prioritising and implementing on-the-ground EbA interventions in the Kathmandu Valley.

A.1.4. Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

The proposed LDCF-financed project will increase the capacity of local communities living in the Kathmandu Valley to reduce their vulnerability to the negative effects of climate change described in Section A.1.1. This will be achieved within three main components. The additional cost reasoning for each component is described below. See Appendix 1 for links between baseline projects and the proposed project.

Component 1. Mainstreaming EbA into development planning in the Kathmandu Valley

Business as usual scenario:

Under the business-as-usual scenario, national, district and local stakeholders will have limited capacity to plan and implement EbA in the Kathmandu Valley. In particular, stakeholders that are implementing initiatives for restoration of ecosystems, development of infrastructure and improvement of livelihoods in the valley, will have limited technical capacity to: i) select appropriate EbA interventions; and ii) integrate these interventions into the designs of their initiatives. For example, the capacity building activities that are currently implemented within the BRBP for improving river ecosystems do not include information on tailoring EbA for restoring vegetation in the face of the particular climate change effects within the Kathmandu Valley. Therefore, stakeholders involved in planning and implementing these activities – including local communities – will have limited technical capacity to select and implement appropriate EbA to improve the health of river ecosystems in the Kathmandu Valley. Similarly, stakeholders that are implementing activities for livelihood diversification – such as the PPURPP – will

²⁶ Including through a knowledge-sharing platform on EbA.

have limited technical capacity to select climate-resilient interventions that provide income-generating opportunities in cultural industries. Consequently, the negative effects of climate change – in particular increasing maximum temperatures and shifting rainfall patterns – will hinder the success of such initiatives.

The baseline problems that are described in the paragraph above apply to planning for social and economic development in the Kathmandu Valley in general. This is because national-, district- and municipal- and district-level stakeholders have limited capacity to select EbA interventions and to integrate these into planning and development.

Under the business as usual scenario, the institutional and technical capacity of national, district and local stakeholders to plan and implement EbA will likely remain limited. Therefore, EbA will not be integrated into initiatives for ecosystems restoration and sustainable social and economic development in the Kathmandu Valley. Consequently, the vulnerability of local communities living in this area will continue to increase with the predicted increase in negative effects of climate change.

The baseline cost (approximately US \$480,000) under this component includes funds allocated by: i) the BRBP for capacity building of stakeholders in Kathmandu Valley on integrated participatory river management and watershed restoration; and ii) the PPURPP for training decision-makers in Kathmandu Valley on an integrated approach to urban regeneration, including through income-generating opportunities in cultural industries.

Adaptation scenario:

Additional funding (GEF/LDCF: US\$415,140) is required to strengthen the institutional capacity of stakeholders at all levels to plan and implement EbA for the Kathmandu Valley. Firstly, existing information on climate vulnerability for the Kathmandu Valley will be collated and studied to identify climate-related risks to local communities²⁷. Thereafter, workshops will be conducted with municipal-level government to select EbA interventions to address the immediate, medium- and long-term effects of climate change in the valley²⁸. These interventions will be selected using the: i) UNEP EbA Decision Support Framework²⁹; and ii) UN-Habitat's "Planning for climate change: A strategic value based approach for urban planners"³⁰. Once suitable EbA interventions have been selected, municipal-level development roadmaps that integrate this approach will be produced in collaboration with local government. The roadmaps will also include recommendations for climate-smart urbanisation. Thereafter, stakeholders from the National Planning Commission (NPC), relevant ministries, departments, and KVDA will be trained on: i) the effects of climate change in the Kathmandu Valley; and ii) monitoring the implementation of the development roadmaps – that incorporate best-practice EbA – to manage these effects. The roadmaps for climate-resilient development will then be integrated into relevant policies, plans and programmes in a continuous, progressive and iterative manner. To this end, policies, strategies and legislation on urban development, forestry and water management³¹ and adaptation to climate change in the Kathmandu Valley will be reviewed. Thereafter, entry points for the EbA interventions that are recommended in the development roadmaps will be identified and revisions to these guiding documents will be recommended. Importantly, these revisions will include recommendations on allocations for domestic expenditure within relevant sectors and sub-

²⁷These studies include *inter alia*: i) the Kathmandu Adaptation Plan of Action (KAPA)²⁷; and ii) particular reports that have been developed by government departments such as the Flood Risk and Vulnerability Map of Kathmandu Valley.

²⁸ For example, Integrated Urban Water Management (IUWM), Sustainable Urban Drainage Systems (SUDs), urban agriculture and urban forestry.

²⁹UNEP. 2012. Ecosystem-Based Adaptation: Moving from Principles to Practice: working document. Available online at: http://www.unep.org/climatechange/adaptation/Portals/133/documents/Ecosystem-Based%20Adaptation/Decision%20Support%20Framework/EBA%20Guidance_WORKING%20DOCUMENT%2030032012.pdf. Accessed on 5 November 2014.

³⁰ UNHABITAT. 2014. Planning for climate change: Guide – A strategic, values-based approach for urban planners. Available online at <http://unhabitat.org/publications-listing/planning-for-climate-change-a-strategic-values-based-approach-for-urban-planners-cities-and-climate-change-initiative>. Accessed on 5 November 2014.

³¹This includes the Kathmandu Valley Physical Development Plan (1972), Physical Development Plan of Kathmandu Valley (1969), Land Use Plan of Kathmandu Valley (1976), Kathmandu Valley Physical Development Concept (1984), Kathmandu Valley Urban Land Policy Study (1986), Urban Development and Conservation Scheme (1988), Kathmandu Valley Urban Development Plan and Program (1991), Bagmati Basin Water Management Strategy and Investment Program (1994), Study on Regularisation of Urbanisation of Kathmandu Valley (1995), Environmental Plan and Management of Kathmandu Valley (1999), Long Term Development Concept Plan of Kathmandu Valley (2000), Local Self Governance Act (LSGA), Town Development Act (year?), Kathmandu Development Authority Act (year?), National Urban Policy (2007), and National Land Use Policy (2012).

sectors. An orientation workshop on using these roadmaps will be conducted for decision- and policy-makers from relevant departments³².

The additional funding will climate proof the activities of the baseline projects by integrating EbA that is tailored for the Kathmandu Valley into the training activities of the BRBP and PPURPP. Through this training, the stakeholders that are involved in planning and implementing these initiatives will have increased technical capacity to prioritise, plan and coordinate the integration of appropriate EbA interventions. Consequently, these initiatives will be sustainable in the medium- and long-term. Therefore, the vulnerability of local communities that are targeted by the BRBP and PPURPP to climate change will be reduced. The proposed project will also support the sustainability of the baseline projects by identifying entry points for EbA into sectors that are relevant to the baseline projects. Such sectors include urban development, forestry and water management.

Component 2. Public knowledge and awareness on EbA in the Kathmandu Valley

Business as usual scenario:

In Nepal, a number of initiatives that focus on upscaling climate change adaptation have been implemented (see Section A.5. and Appendix 2). However, the public – including government stakeholders and communities living in the Kathmandu Valley – has limited understanding of the benefits of EbA. Furthermore, because most initiatives focus on reducing the vulnerability of rural communities to the effects of climate change, there is limited awareness of how EbA relates to the urban context. In particular, local communities in the Kathmandu Valley are not aware of the benefits of EbA to promote: i) water conservation and groundwater recharge; ii) soil stability, particularly along roadsides and in areas with high risk to slope failures³³; and iii) climate-resilient livelihoods. Moreover, there is limited knowledge generation and information sharing on the benefits of EbA. For example, information that is generated to inform the designs of interventions to manage and improve river ecosystems within the BRBP does not include consideration of EbA approaches, such as the tailoring of climate resilient wetlands. Similarly, the technical information and knowledge that is generated to guide the activities of the PPURPP does not include EbA to establish forests/community gardens for climate-resilient livelihoods. Additionally, there is a lack of research underway on the benefits of EbA interventions to manage the effects of climate change in the medium- or long-term. In the business as usual scenario, information on EbA for restoring ecosystems and promoting sustainable development in the Kathmandu Valley will not be generated, managed nor shared to support climate-resilient social and economic development. Consequently, the public – including local communities and government in the valley – will have limited awareness on the benefits of EbA and this approach will not be prioritised nor upscaled.

The baseline cost (approximately US \$1,092,500) under this component includes funds allocated by: i) the BRRBP to generate information to inform integrated participatory river management and watershed restoration; and ii) the PPURPP to generate information on an integrated approach to urban regeneration.

Adaptation scenario:

Additional funding (GEF/LDCF: US\$474,445) is required to enhance awareness and knowledge on the benefits of EbA in the Kathmandu Valley. In particular, research on the effects of this approach in the short- and medium-term will be funded.^{34:35}. Thereafter, a strategy will be developed to measure the benefits of the interventions that are implemented under Component 3³⁶ in the medium- and long-term. These interventions will bolt onto the on-the-

³² This includes the Department of Land Reform and Management (DoLR&M), the Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR), the Department of Urban Development and Building Construction (DoUD&BC), the Department of Water Supply and Sewerage (DoWS&S), and the Land Management Training Centre (LMTC).

³³ Including soil stabilisation along roadsides by planting tree species that grow quickly and have deep root systems to bind soils. Research topics on the benefits of EbA will be identified in consultation with academics from local tertiary institutions.

³⁴ Benefits to be realised within two years of project inception – such as those described above – will be measured within the lifespan of the project.

³⁵ For example, Tribhuvan University (M.Sc. Programme on Biodiversity and Environment Management), Institute of Forestry, and the Nepal Academy of Science and Technology.

³⁶ Medium- and long-term research which will involve successive students collecting, processing and analysing data.

ground activities of the BBRNP, PPURPP and KVRIP. Therefore, the proposed project will collect information on the effects of EbA that will be implemented to climate proof these baseline initiatives under Component 3.

To promote knowledge generation and sharing amongst the youth, a competition will be coordinated within the proposed project for which school children will identify and prioritise EbA interventions that can be implemented on school premises or surrounding community areas. Information on the competition and the benefits of EbA will be disseminated on posters and flyers at all schools in the Kathmandu Valley. Ten winning projects will be selected³⁷. Thereafter, the schools that design these winning projects will be supported to detail the designs and implement these small-scale EbA projects. In addition, education toolkits will be developed to guide schoolchildren to collect data to monitor these projects simply³⁸. To promote learning on EbA among all schools in the Kathmandu Valley, annual open days will be arranged at the schools that are implementing these EbA projects.

To enhance the understanding and awareness of EbA among the public in the Kathmandu Valley, a campaign will be conducted on the benefits of this approach. To this end, talk radio shows will be produced on EbA and aired throughout the Kathmandu Valley. In addition, articles on EbA will be published in local publications – such as Face-to-face and Haka-Haki – and newspapers. Information on the school competition to be coordinated by the proposed LDCF-financed project will be included in these awareness campaigns. A knowledge-sharing platform will also be strengthened and/or established through the proposed LDCF-financed project. Through this platform – which will be embedded within a relevant institution – information on EbA will be accessible to the public. Moreover, information will be repackaged to meet policy-makers and parliamentarians needs, and disseminated to them.

The awareness-raising tools described above will include information on the effects of degraded ecosystems on the vulnerability of local to climate change. These degraded ecosystems include those that are targeted by the baseline initiatives such as river, forest and agro-ecological ecosystems within the Kathmandu Valley. In addition, the proposed project will disseminate information on EbA to: i) restore these degraded ecosystems; and ii) protect development infrastructure such as roads. Therefore, within Component 2, the proposed project will promote sustainability of baseline interventions and upscaling of EbA in the Kathmandu Valley.

Component 3. EbA interventions to establish climate-resilient communities in the Kathmandu Valley

Business as usual scenario:

The Kathmandu Valley is one of the fastest growing cities in South Asia³⁹. Consequently, it experiences a number of socio-economic and environmental challenges including *inter alia*: i) increasing poverty; ii) loss of productive agricultural land; and iii) river and air pollution that have a negative effect on the health of local communities living in the area. Moreover, these local communities are vulnerable to the negative effects of climate change. In particular, the valley is experiencing: i) increasing maximum temperatures; ii) shifting rainfall patterns; and iii) increased frequency of extreme events including droughts and floods. The effects of these climate-related hazards include *inter alia* water shortages, food insecurity, increased prevalence of diseases⁴⁰ and slope failures⁴¹. To manage the negative effects of climate change in Nepal, many initiatives with different technologies have been implemented at the local level throughout the country, most of which are community-based. Of these, only three EbA projects are

³⁷Based on criteria including *inter alia*: i) understanding of EbA; ii) contribution to climate change adaptation; iii) innovativeness; and iv) cost-effectiveness of the project designs.

³⁸For example, if a project is designed to restore a river passing through a school property, students will learn to collect and assess aquatic insects as an indicator of river health.

³⁹Mohanty, A. 2010. State of Environment: Kathmandu Valley, Kathmandu Nepal: a special review. PhD report, prepared by the International Centre for Integrated Mountain Development (ICIMOD), Lalitpur, Kathmandu, Nepal.

Badu, M. 2013. Assessing the impact of climate change on human health: status and trends of malaria and diarrhoea with respect to temperature and rainfall variability in Nepal. Kathmandu University Journal of Science, Engineering and Technology 9: 96-105.

⁴¹Shifting rainfall patterns will result in extreme weather events such as droughts. Therefore, there will be a reduction in water availability for domestic use and irrigation. Also, increasing temperatures will result in shifting micro-climates. This shift will have an effect on the geographic distribution of the fruits and vegetables grown in Kathmandu Valley. Moreover, shifts in the prevalence and distribution of vector and water-borne diseases – including malaria, Kala-azar, Japanese encephalitis, typhoid and cholera – have already been noticed in the country. Shifting rainfall patterns have also been linked to an increase in frequency of slope failures in some VDCs of Kathmandu Valley.

being implemented (see Section 2.7). These EbA projects are targeted local communities in rural areas. Therefore, no tailored EbA interventions are being implemented in the Kathmandu Valley.

In the valley, riparian areas – including the Bagmati River – are under threat from the effects of a wide variety of terrestrial pollution sources. These include *inter alia*: i) sediment run-off from agriculture; ii) industrial pollution within the city; iii) sewage from inadequately serviced settlements; iv) litter and refuse; and v) storm water run-off⁴². In addition, these lower lying floodplains are often the most intensely farmed areas. In the Kathmandu Valley, the establishment of residential areas and informal settlements along the length of the Bagmati River is reducing the surface area for groundwater recharge. These riparian areas – that provide goods and services to the local communities in the Kathmandu Valley – will come under increasingly intense pressure as the population grows and urbanisation increases. In particular, the problem of water scarcity that threatens local communities in the valley will become more severe⁴³ if left unaddressed. To restore river ecosystems, initiatives such as the BRBP are being implemented. However, approaches to restore vegetation along the lengths of these rivers are not tailored to particular ecosystems and climate trajectories for the Kathmandu Valley. Under this scenario, the efficiency of such interventions will be reduced because of increased pressure from the effects of climate change, including more frequent and severe floods and droughts.

The United Nations World Food Programme (WFP) places Nepal among one of the most vulnerable countries in the world in terms of food security⁴⁴. As such, WFP estimated that ~40% of the country's population is undernourished. This insecurity is predicted to worsen under conditions of rapid population growth, particularly in the metropolitan area of the Kathmandu Valley⁴⁵. Moreover, because of the rising market value of land in the valley, many farmers have either sold or developed their agricultural land. This transformation and fragmentation of agricultural land has resulted in a decrease in local agricultural productivity. Given this, local communities are increasingly more reliant on supplies of fruits and vegetables that are imported from areas outside of the valley. Indeed, the valley now imports 90% of these foods. To contribute to improving livelihoods, access to income-generating opportunities and food security of vulnerable households, the PPURPP is implementing activities for urban regeneration. The objective of such activities is to demonstrate the feasibility of an integrated urban regeneration approach to decision-makers in Kathmandu Valley. However, the predicted negative effects of climate change – including increasing temperatures and more frequent and severe droughts and floods – will reduce the efficiency of initiatives to promote income-generating opportunities (e.g. urban agriculture or community-based tourism) within the valley⁴⁶. Currently, the PPURPP does not tailor agricultural livelihoods to be climate-resilient. Therefore, these climate related-effects will notably restrict the PPRUP's interventions to improve access to food security and income-generating activities.

Additionally, climate-related disasters such as slope failures threaten the road networks that are used to transport food into and around the valley⁴⁷. Currently, development projects to improve road networks in the Kathmandu Valley – such as the KVRIP – do not consider these climate-related effects. Consequently, such infrastructure is not climate-proofed by cost-effective EbA interventions. Therefore, the sustainability of these development initiatives remains threatened in the medium- to long- term.

Under the business-as-usual scenario, on-the-ground interventions to restore degraded ecosystems and promote socio-economic development within the Kathmandu Valley will remain threatened by the effects of climate change.

⁴²Toffin, G. 2010. Urban fringes: squatter and slum settlements in the Kathmandu Valley. Centre for Nepal and Asian Studies Journal 37: 151-168.

⁴³UN-Habitat. 2012. Slideshow: Nepal country paper. Presentation for Sri Lanka workshop on decentralization and climate change.

⁴⁴Shrestha, B. 2011. The Land Development Boom in Kathmandu Valley: Commercial Pressures on Land. Research project document. Available at: http://www.landcoalition.org/sites/default/files/publication/926/CDS_Nepal_web_11.03.11.pdf. Accessed on 25 August 2014.

⁴⁵Traditionally, a farming community known as Jyapu has been farming in the Kathmandu Valley. They practice very simple but effective farming on relatively small pieces of land in the valley including: i) the use of natural clay and human excrement for compost; and ii) intercropping and crop rotation. In the past, this local community produced the greatest share of fresh vegetables for the valley's market. , Recently, the Jyapu –along with other farming communities in the valley – has experienced pressure as the population in Kathmandu Valley has grown and urban areas have expanded.

⁴⁶Synott, P.2012. Climate change, agriculture and food security in Nepal: developing adaptation strategies and cultivating resilience. Report prepared for Mercy Corps Nepal. Available at: file:///Z:/PD%20and%20PIF/PIF/Active/Nepal2_Kathmandu/Gathered%20information/Cities%20and%20climate%20change/climate-change-agriculture-and-food-security-in-nepal.pdf. Accessed on 25 August 2014.

⁴⁷UN-HABITAT. 2012. Decentralization and climate change: Nepal country paper. Presentation available at: <http://www.unhabitat.lk/downloads/Nepal.pdf>. Accessed on 22 August 2014.

Consequently, the vulnerability of local communities that are targeted by such interventions will continue to increase with the predicted negative effects of climate change.

The baseline cost (approximately US \$12,876,300) under this component includes funds allocated by the baseline projects to implement on-the-ground activities to achieve their objectives. In particular, this includes funds allocated by: i) the BRBP to restore wetlands along the lengths of the Bagmati River; ii) the PPURPP to develop income generating opportunities in the Kathmandu Valley; and iii) the KVRIP to improve road networks in the Valley⁴⁸.

Adaptation scenario:

Additional funding (GEF/LDCF: US\$ 474,445) is required to implement EbA demonstrations in the Kathmandu Valley. Consequently, the vulnerability of local communities – for which these ecosystems provide goods and services – will be reduced. Initially, protocols for particular EbA interventions will be developed with relevant stakeholders including government, academics, practitioners and technicians of baseline projects. Thereafter, EbA pilot interventions will be implemented to promote: i) water conservation and groundwater recharge; ii) soil stability, particularly along roadsides and in areas of great risk to slope failure and public open spaces; and iii) climate-resilient livelihoods. To promote the sustainability of EbA, the technical capacity of local communities, user groups and government to plan and implement this approach will be strengthened⁴⁹.

The activities within Component 3 will build on the activities of the baseline projects. Firstly, the proposed project will implement EbA to restore lengths of the rivers that run through the Kathmandu Valley. To this end, soil bioengineering will be implemented and riparian vegetation will be restored along riverbanks using indigenous and climate resilient species⁵⁰. These interventions will contribute to: i) increased groundwater recharging potential; ii) improved water quality⁵¹ in rivers; iii) increased resilience of the riverbank to erosion; and iv) reduced velocity of water flows in the river during flood seasons. Therefore, EbA will be implemented to climate proof river management and restoration activities that are implemented by BRBP.

Secondly, multi-use forests and/or community gardens that will be established in existing public spaces will climate-proof the ongoing initiatives of PPURP to promote access to income-generating opportunities and food security in the valley. In public spaces (e.g. parks), this approach will include the planting of: i) indigenous evergreen tree species that have deep root systems and produce natural resources that are useful to local communities⁵²; and ii) climate-resilient food crops. Consequently, livelihoods for local communities will be climate proofed and groundwater recharge will be promoted. This groundwater recharge will also contribute to the objectives of the BRBP for watershed management.

At a household level, the project will support local communities to establish gardens and practice climate-resilient agriculture on rooftops⁵³. During the PPG phase, Income Generating Activities (IGAs) will be identified from these EbA interventions⁵⁴. In addition, Climate Resilient Community Livelihood Improvement Plans (CRCLIPs) will be developed for these IGAs, thereby benefitting these communities. These CRCLIPs will bolt onto and promote the

⁴⁸ Including along the following road lengths: i) Soalteemod – Kalanki; ii) Kalanki – Sitapaila; iii) Kalanki – Balkhu; and iv) Kalanki – Nagdhunga,

⁴⁹ Including training on IUWM

⁵⁰ During the Project Preparation Grant (PPG) phase, suitable species will be identified and validated.

⁵¹ Improved water quality will have a positive effect on human health and will contribute to reducing the prevalence of vector and water-borne diseases.

⁵² Indigenous species will be selected if they have one or more of the following attributes: i) grow quickly in the face of drought; ii) are broad-leaved, thereby reducing rainfall impact on the soil; iii) have deep root systems thereby increasing water infiltration into the soil; and iv) produce natural resources that provide benefits for local communities.

⁵³ For example, farmers will practise: i) growing low-height, pot-based perennial fruit trees; ii) inter-cropping; iii) water harvesting and recycling; and iv) soil conservation.

⁵⁴ Examples of these IGAs include: i) cultivation, processing and selling of fruits or vegetables that are grown in local community or rooftop gardens; ii) cultivation, processing and selling of NTFPs, medicinal herbs or other products from EbA that is implemented in existing green spaces; and iii) eco-tourism ventures that are managed by local communities in existing green spaces. Examples of eco-tourism ventures in these spaces include: i) educational centres for information on ecosystems and EbA; and ii) cycle tracks.

objectives of the PPURPP to increase access to income-generating opportunities in cultural industries. Importantly, these CRCLIPs will also include business plans and sustainability strategies for IGAs that are identified from EbA interventions. Moreover, opportunities to involve the private sector in climate-resilient livelihood improvement will be explored within Component 3 of the proposed project. Thereafter, the proposed project will support local communities to implement these CRCLIPs. Furthermore, local communities will be trained on water conservation and provided with rainwater-harvesting technology. Thirdly, EbA will be implemented by the proposed project to restore vegetation along roadsides. To this end, soil bioengineering – using indigenous and climate resilient species – will be implemented in these areas. These EbA interventions will reduce the risk of slope failures onto roads, thereby climate-proofing the on-the-ground activities implemented by KVRIP. Lastly, increased vegetation cover – in public open spaces, along the side of roads and in rooftop gardens – will regulate and reduce the air temperature in the Kathmandu Valley⁵⁵.

A.1.5. Adaptation benefits (LDCF/SCCF)

Should EbA interventions not be implemented in the Kathmandu Valley, climate change is predicted to have continuing negative effects on local communities. The proposed LDCF-financed project will address climate change vulnerabilities within a complex socio-economic environment by strengthening the institutional and technical capacity to plan and implement EbA in the valley. This will be achieved by: i) collating best practice information; ii) training authorities and local communities; iii) implementing and demonstrating EbA; iv) conducting research; v) increasing public awareness; vi) developing roadmaps that integrate EbA; and vii) revising policies.

The proposed LDCF-financed project will advance the National Adaptation Planning (NAP) process for Nepal. Firstly, at a national level, policies, strategies and legislation on urban development, forestry and water management⁵⁶ and adaptation to climate change will be reviewed to identify entry points for EbA. Thereafter, revisions to these guiding documents will be recommended, thereby promoting an integrated approach to climate change adaptation. Secondly, municipal government will be trained on selecting EbA interventions based on the UNEP decision support criteria. Thereafter, municipal-level roadmaps that integrate EbA will be developed for the Kathmandu Valley with these stakeholders. These roadmaps will further support such an integrated approach. Thirdly, a long-term research strategy will be established to measure the effects of EbA in the Kathmandu Valley, and in an urban context in general. Lastly, knowledge on EbA – including findings of research will be catalysed by the proposed project – will be managed and disseminated to the public to promote upscaling of EbA.

At project sites, EbA will provide numerous tangible benefits⁵⁷. Furthermore, lessons learned from the implementation of cost-effective EbA interventions will be documented and disseminated to policy- and decision-makers as well as the public. Consequently, EbA interventions to conserve water, promote groundwater recharge, stabilise soils and promote climate-resilient livelihoods in urban areas will be promoted and upscaled in Nepal. The upscaling of EbA will reduce the vulnerability of Nepalese communities to the effects of climate change as more ecosystems are enhanced to provide services and buffer extreme weather events⁵⁸.

The specific adaptation benefits of the proposed LDCF-financed project will include: i) increasing the resilience of riparian ecosystems to buffer against climate-induced extreme floods; ii) reducing soil erosion; iii) improving and maintaining water quality⁵⁹ through restored wetland ecosystems; iv) improving water supply by promoting

⁵⁵ Nowak, D.J. and Heisler, G.M. 2010. Air quality effects and urban trees and parks. Available at: http://www.nrpa.org/uploadedFiles/nrpa.org/Publications_and_Research/Research/Papers/Nowak-Heisler-Research-Paper.pdf. Accessed on: 26 August 2014.

⁵⁶ This includes the Kathmandu Valley Physical Development Plan (1972), Physical Development Plan of Kathmandu Valley (1969), Land Use Plan of Kathmandu Valley (1976), Kathmandu Valley Physical Development Concept (1984), Kathmandu Valley Urban Land Policy Study (1986), Urban Development and Conservation Scheme (1988), Kathmandu Valley Urban Development Plan and Program (1991), Bagmati Basin Water Management Strategy and Investment Program (1994), Study on Regularisation of Urbanisation of Kathmandu Valley (1995), Environmental Plan and Management of Kathmandu Valley (1999), Long Term Development Concept Plan of Kathmandu Valley (2000), Local Self Governance Act (LSGA), Town Development Act (year?), Kathmandu Development Authority Act (year?), National Urban Policy (2007), and National Land Use Policy (2012).

⁵⁷ The livelihoods and food security of local communities in Kathmandu Valley will be improved by implementing EbA.

⁵⁸ McIvor, A., Spencer, T., Moller, I. & Spalding, M. 2012. Storm surge reduction by mangroves. NCP Report 2012-02. Natural Coastal Protection Series: Report 2. Cambridge Coastal Research Unit Working Paper 41.

⁵⁹ This will increase the availability of fresh water and result in fewer water-borne diseases.

groundwater recharge and water conservation; v) enhancing resilience to climate-induced slope failures by stabilising soils; vi) providing NTFPs and alternative livelihoods; vii) improving food security through intensified and diversified climate-resilient agricultural areas; and viii) contributing to temperature reduction in the Kathmandu Valley. Climate-related disasters are estimated to cost Nepal approximately US \$270–360,000,000 annually⁶⁰. This amount represents 1.5–2% of the Gross Domestic Product (GDP) and is expected to increase. Therefore, to manage the effects of climate change, cost-effective interventions need to be implemented. In comparison with the costs of other types of investments, the value of the benefits of EbA is favourable.

By supporting local communities to establish community and rooftop gardens, the proposed LDCF-financed project will promote cost-effective and organic agriculture in the Kathmandu Valley. In particular, the project will promote: i) job creation and livelihood diversification in the area⁶¹; ii) market expansion for farmers; and iii) economic savings, by reducing the need to import these products⁶². Therefore, the project will reduce the vulnerability of local communities living in the valley.

Initially, the adaptation benefits of EbA to conserve water, promote groundwater recharge, stabilise soils and promote climate-resilient livelihoods in metropolitan areas will accrue at the local level. However, knowledge generated and consolidated under Component 2 will guide the replication of local level interventions at a national level. This will increase the geographic scale and longevity of the benefits of climate change adaptation generated by the proposed LDCF-financed project.

A.1.6. Innovativeness, sustainability and potential for scaling up

EbA will be implemented in the Kathmandu Valley to promote: i) water conservation and groundwater recharge; ii) soil stability, particularly along roadsides and in areas with high risk to slope failure; and iii) climate-resilient livelihoods. Increasingly, research indicates⁶³ that an EbA approach represents an innovative and cost-effective means of adapting to climate change. Local communities in the Kathmandu Valley are vulnerable to the effects of: i) increasing maximum temperatures; ii) shifting rainfall patterns; and iii) an increasing frequency of extreme events including droughts and floods. The use of EbA interventions will reduce the frequency and severity of floods caused by erratic rainfall. In turn, this will increase the resilience of infrastructure – including urban areas and settlements – that is located in the lower lying areas of the valley. The use of EbA interventions to protect infrastructure from the negative effects of climate change is an innovative practice that has not been implemented in the Kathmandu Valley. In addition, the benefits of restored riparian ecosystems and EbA in existing public open spaces and on rooftops will include the provision of ecosystem services, for example the supply of water and increased food security. To maximise benefits, the proposed LDCF-financed project will collaborate with relevant stakeholders and use the best available knowledge to avoid redundancy of project interventions as well as promote complementarity of project objectives. Moreover, the lessons learned from this particular project will be documented and used to inform the funding of future EbA and other adaptation interventions.

The sustainability and replication of the proposed LDCF-financed project will further be enhanced by:

- **strengthening the institutional and technical capacity** of local governments, communities, district officers and national stakeholders to plan and implement EbA in riparian ecosystems as well as existing community and public open spaces;
- **designing roadmaps and policy briefs** to mainstream EbA into development planning in the Kathmandu Valley;
- establishing **community-managed gardens** in existing public spaces;
- **demonstrating the benefits of EbA** to local governments and communities at intervention sites;

⁶⁰ MoSTE. 2014. Economic Impact Assessment of climate change in key sectors in Nepal. Summary Report. IDS-Nepal, Kathmandu, Nepal.

⁶¹ Ashoka Changemakers. 2014. Linking rooftop farming (RTF) with green jobs: creating urban agri-preneurs. Available at: <http://www.changemakers.com/project/roof-top-farming>. Accessed on 28 August 2014.

⁶² Golden, S. 2013. Urban Agriculture Impacts: Social, Health and Economic: a literature review. University of California Agriculture and Natural Resources. Available at: <http://asi.ucdavis.edu/resources/publications/UA%20Lit%20Review-%20Golden%20Reduced%2011-15.pdf>. Accessed on 26 August 2014.

⁶³ Jones, H.P., Hole, D.G., Zavaleta, E.S. 2012. Nature Climate Change, 2: 504-509.

- **disseminating information** to policy- and decision-makers and planners, including parliamentarians when appropriate;
- developing a **long-term research strategy on the benefits of EbA** that will be implemented within Component 3;
- coordinating **small-scale EbA projects** that will be **implemented in primary and secondary schools**; and
- **conducting public awareness campaigns on EbA** and the benefits of this approach within the Kathmandu Valley which will have country-wide impact by integrating EbA into national policies and plans.

A.2. Stakeholders

Will project design include the participation of relevant stakeholders from civil society and indigenous people? (yes /no) If yes, identify key stakeholders and briefly describe how they will be engaged in project design/preparation:

The proposed LDCF-financed project will be designed and implemented through a participatory approach with stakeholder consultation and validation for all major activities. This consultation will include community surveys, regular meetings and training workshops. An indicative list of these stakeholders – and the roles that they will play in project design – is provided in Appendix 3.

During the preparation of this PIF, a consultation workshop was organized on 18 July 2014. The objective of the workshop was to brainstorm, with relevant stakeholders, the design of the project.

Representatives from aligned initiatives and projects will be regularly consulted to enhance effective and informed collaboration and implementation. A comprehensive list of such entities is provided in Section A.5. The identified stakeholders – and the specific communication and synergies that will be formed with them – will be confirmed during the PPG phase.

A.3. Gender Considerations

Are gender considerations taken into account? (yes /no). If yes, briefly describe how gender considerations will be mainstreamed into project preparation, taken into account the differences, needs, roles and priorities of men and women.

In Nepal, women play a central role in managing the security of necessities, often relying on climate-sensitive natural resources for their livelihoods⁶⁴. Currently, women in Nepal have insufficient access to relevant information and skills to manage the negative effects of climate change on these natural resources⁶⁵. In particular, the socio-economic empowerment of women has been impaired by their decreased access to water. This has resulted in detrimental effects for women with respect to: i) health; ii) nutrition; and iii) livelihoods⁶⁶. To address these challenges, gender considerations will be mainstreamed into the proposed LDCF-financed project activities to ensure that women are included in activities to increase their resilience and capacity to adapt to climate change⁶⁷. For example, women's user groups and women-headed households will be targeted: i) in the roadmaps that are designed within Component 1; and ii) to implement EbA activities in existing public open spaces and on rooftops under Component 3 (see Section A.1.3). This approach to gender mainstreaming is aligned with Nepal's Three-Year Interim Plan 2007/08–2009/10 as well as gender-specific policies and strategies such as the Gender and Social Inclusion Strategy and Action Plan (2012), and draft strategy on Mainstreaming Gender and Climate Change in Nepal (2012). To ensure that the progress of gender mainstreaming can be monitored throughout the project, gender disaggregated targets will be developed and used to monitor indicators, where appropriate. Under Component 1,

⁶⁴ Mainlay, J., & Tan, S. F. 2012. Mainstreaming gender and climate change in Nepal (pp. 1–24). London, UK.

⁶⁵ Leduc, B. 2009. Climate Change in the Himalayas: The Gender Perspective. Background paper for the e-discussion.

⁶⁶ Gurung, D.D. & Bisht, S. 2014. Women's empowerment at the frontline of adaptation: Emerging issues, adaptive practices, and priorities in Nepal. ICIMOD Working Paper 2014/3. Kathmandu: ICIMOD.

Kurvits, T. et al. 2014. The last straw: Food security in the Hindu Kush Himalayas and the additional burden of climate change. ICIMOD. Available at <http://www.grida.no/publications/last-straw/> Accessed on 28 August 2014. Does this reference link to footnote no. 58?

⁶⁷ Denton, F. 2002. Climate change vulnerability, impacts, and adaptation: Why does gender matter? *Gender & Development*, 10(2), 10–20. doi:10.1080/13552070215903.

gender sensitivity will be incorporated into training topics so that female participants are empowered to participate in the trainings and implementation of appropriate EbA activities. Trainers will be required to have the skills and experience necessary to plan and facilitate gender-sensitive training.

A.4.Risks

Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable)

| # | Risks | Potential consequence | Mitigation measures | Risk category | Probability & impact (1–5) |
|-----------------------------|---|---|---|----------------|----------------------------|
| National-level risks | | | | | |
| 1 | Disagreement between stakeholders on the allocation of roles in the proposed LDCF-financed project. | Project interventions delayed or duplicated because of uncertain role allocation. Effectiveness of project management is reduced. | Institutional representatives at the validation meeting will agree upon the roles and responsibilities of each participating stakeholder. KVDA is the executing agency of the project. This authority has a legal mandate to coordinate activities in the Kathmandu Valley and will therefore be well positioned to define roles and manage project activities. | Organisational | P = 1 I = 4 |
| 2 | Limited capacity of institutions to undertake scientifically rigorous research. | Inadequate local capacity to design appropriate EbA interventions. | Capacities will be assessed to identify appropriate institutions for conducting and housing research during the PPG phase. If necessary, International Experts will be contracted. | Institutional | P = 2 I = 3 |
| 3 | Lack of political will to implement proposed LDCF-financed project activities. | Loss of government support may result in lack of prioritisation of project activities. | Ensure that government maintains its commitment and considers the project as a support to its forestry and agriculture programmes by undertaking regular stakeholder consultations. | Organisational | P = 1 I = 4 |
| 4 | High turnover of staff members in implementing agencies (in particular KVDA). | Changes in project-related government priorities and poor institutional memory – particularly capacity that will be built through the proposed LDCF-financed project – result in disruptions or delays in the proposed LDCF-financed project implementation and coordination. Moreover, these changes will hinder the sustainability of interventions after the project finishes. | A number of government stakeholders and alternative representatives within the institutions will be recommended at inception to ensure that sufficient membership continuity is available. Where possible, handbooks will be developed in English and Nepalese. These handbooks will guide new staff involved in the project. Furthermore, climate change adaptation and EbA training modules to be integrated into the familiarization courses of relevant ministries. | Organisational | P = 4 I = 4 |
| Local level risks | | | | | |
| 5 | Limited acceptance/adoption of EbA by local | Local communities may not adopt EbA interventions during or | Local communities will be consulted and involved in implementing and managing the | Social | P = 1 I = 4 |

| | | | | | |
|----|--|--|--|--------------------------|----------------|
| | communities. | after the proposed LDCF-financed project, resulting in the continued unsustainable use of resources. Moreover, EbA interventions will not be sustainable after the project finishes. | EbA activities, and it is expected that through the benefits they will gain from LDCF interventions they will be more inclined to manage and sustain these interventions. Moreover, awareness campaigns will be conducted on EbA in Kathmandu Valley, and on the benefits of this approach. EbA will also be implemented at schools, thereby promoting understanding among the youth, sustainability and upscaling of this approach. Furthermore, sustainability of monitoring project interventions in the long term is expected to occur through involving research institutions and universities at the onset of the project. Please see section A1.6 on sustainability for more information. | | |
| 6 | Extreme climatic events and climate variability. | Current climate and seasonal variability and/or hazard events result in poor restoration results. | Ensure that current climatic variability is taken into account in the design of EbA. Focus on climate resilient and broad leaved evergreen species and promote techniques to assist plant growth. | Environmental | P = 2 I = 4 |
| 7 | Implemented interventions are not cost effective. | Economic loss and budget allocation to other activities is reduced. | EbA is a cost-effective and proven approach to climate change adaptation. | Economic | P = 2 I = 3 |
| 8 | Limited local technical capacity hinders the proposed LDCF-financed project interventions. | Capacity constraints of local institutions and experts may limit the ability to undertake the research and demonstration activities. | Identify and develop human resource capacity as required (training on EbA and techniques to conserve top soil and water for district officers and user groups). Initiate collaboration and exchange between: i) local implementing institutions; and ii) national, regional and international research institutes. | Technical | P = 3 I = 3 |
| 9 | Limited commitment/buy-in from local communities. | Lack of commitment/buy-in from local communities may result in failure of demonstration projects. | A stakeholder engagement plan will be drawn up during the PPG phase. Local community stakeholders will be included in the PPG phase to ensure their buy-in into the proposed LDCF-financed project. | Social, Environmental | P = 2 I = 4 |
| 10 | Insufficient surface water and groundwater availability at intervention sites. | Failure to effectively carry out EbA interventions in community and rooftop gardens. | Infrastructure for water conservation will be constructed at intervention sites thereby contributing to water security. | Environmental | P = 3 I = 4 |
| 11 | Insufficient land, and competitive land use rights in urban areas may hinder implementation of | Failure to effectively carry out EbA interventions | The project will assess all land use policies and zoning rights at PPG phase to ensure that there is enough land to carry out EbA. All stakeholders to be consulted at PPG phase to ensure that the land | Institutional and Social | P = 3 I = 4 |

| | | | | | |
|--|-----|--|---|--|--|
| | EbA | | available can be used for EbA interventions and to ensure no conflicts arise. | | |
|--|-----|--|---|--|--|

A.5. Coordination

Outline the coordination with other relevant GEF-financed and other initiatives

Numerous GEF and non-GEF national projects that focus on adaption to climate change have been or are currently being implemented in Nepal. The proposed LDCF-financed project will focus on collating and synthesising the lessons learned from these projects – using a standardised approach – to inform its design and to disseminate these lessons to the public. This approach will maximise synergies and avoid duplication of activities. See Appendix 2 for a full list of aligned initiatives and a description of how the project will coordinate with these initiatives.

B.1. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH NATIONAL PLANS OR STRATEGIES

Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes /no).If yes, which ones and how: NAPAs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.

The proposed LDCF-financed project is aligned with the strategies, plans and reports described in the table below.

| National strategy/plan/report | Alignment |
|---|--|
| Millennium Development Goals (MDGs) | The proposed LDCF-financed project will contribute towards achieving: MDG 1 – eradicating extreme poverty and hunger; and MDG 3 – promoting gender equality and empowering women. The overall objective of the project will contribute to MDG 7 – ensuring environmental sustainability. |
| National Adaptation Programme of Action | The proposed LDCF-financed project is aligned with Priorities: 1 – Promoting Community-based Adaptation through Integrated Management of Agriculture, Water, Forest and Biodiversity Sectors; 5 – Forest and Ecosystem Management for Supporting Climate-Led Adaptation Innovations; 7 – Ecosystem Management for Climate Adaptation; 8 – Empowering Vulnerable Communities through Sustainable Management of Water Resource and Clean Energy Supply; and 9 – Promoting Climate Smart Urban Settlement. |
| United Nations Development Assistance Framework (UNDAF) | In particular, the proposed LDCF-financed project is aligned with Outcome 7 under Component 2 – People living in areas vulnerable to climate change risk and disasters benefit from improved risk management and are more resilient to hazard-related shocks. |
| Climate Change Policy (CCP) | The proposed LDCF-financed project is aligned with the overall objective of the CCP to protect local communities from the effects of climate change through the consideration of climate justice-related approaches such as environmental conservation, human development, and sustainable development. |
| Local Adaption Plan for Action | The proposed LDCF-financed project is aligned with LAPA objectives to: i) identify the VDCs, municipalities, wards and local communities that are most vulnerable to climate change, as well as their adaptation challenges and opportunities, including possible activities; ii) identify and prioritise adaptation actions so that the needs of local communities are prioritised; iii) identify and mobilise appropriate service delivery agents and necessary resources; iv) adopt and/or implement adaptation actions sequentially by the service providers in a timely and resource efficient manner; v) and identify cost-effective adaptation alternatives that can be upscaled into local to national planning. |
| Region-based Development Strategy | The proposed LDCF-financed project will support the economic development of the Kathmandu Valley by promoting: i) Principle 5 – Building the specialities of each urban economic region using readily available natural resources for enhancing competitiveness; ii) Principle 6 – Using action items identified through the analytical methodology to trigger economic growth in a coherent and constant manner; and iii) Principle 7 – Investing to support growth potential by each urban economic region to develop the specialities and market competitiveness of the identified industries. |
| Comprehensive Peace Accord (2006) | In particular, the proposed LDCF-financed project is aligned with the Comprehensive Peace Accord’s objective to “follow a policy to protect and promote national industries and resources”. |
| Nepal Peace and Development Strategy (2010-2015) | The proposed LDCF-financed project supports objectives of the Peace Development Strategy to: i) urban interventions to improve food security; and ii) additional livelihood opportunities for poor households. |
| National Five-Year | The proposed LDCF-financed project will support the objectives of these plans by strengthening Nepal’s |

| | |
|--|--|
| Plan and Three-Year Interim Plan | institutional and technical capacity for EbA, which contributes to soil and water conservation. |
| National Communications | Nepal's Initial National Communication (NC) to the United Nations Framework Convention on Climate Change (UNFCCC, 2004) details the vulnerability of local communities in Nepal to climate change. The proposed LDCF-financed project will support the technologies promoted by this NC, in particular sustainable technologies and water harvesting for adaptation. Nepal's Second NC is currently being developed. |
| Nepal Biodiversity Strategy and Biodiversity Strategy Implementation Plans | The Nepal Biodiversity Strategy (2002) and Nepal Biodiversity Strategy Implementation Plan (2006–2011) address the objectives of the United Nations Convention on Biological Diversity. In particular, the proposed LDCF-financed project will support the objective of the NBS to conserve forests and agricultural biodiversity. |
| Nepal Poverty Reduction Strategy Paper | The proposed LDCF-financed project is consistent with the main objectives of the Nepal Poverty Reduction Strategy Paper. |


PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY (IES)

A. Record of Endorsement⁶⁸ of GEF Operational Focal Point (S) on Behalf of the Government(s): (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this template. For SGP, use this [SGP OFP endorsement letter](#)).

| NAME | POSITION | MINISTRY | DATE(MM/dd/yyyy) |
|----------------------|-----------------------------|---------------------|------------------|
| Madhu Kumar Marasiri | GEF Operational Focal Point | Ministry of Finance | 19 November 2014 |

GEF Agency(ies) Certification

This request has been prepared in accordance with GEF policies⁶⁹ and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

| Agency Coordinator, Agency name | Signature | Date (MM/dd/yyyy) | Project Contact Person | Telephone | Email |
|---|---|-------------------|--|------------------|----------------------|
| Brennan Van Dyke, Director, GEF Coordination Office, UNEP |  | December 30, 2014 | Ermira Fida, Head- GEF Adaptation Unit, UNEP | +(254)20 7623113 | ermira.fida@unep.org |
| | | | | | |
| | | | | | |

C. Additional GEF Project Agency Certification (*Applicable Only to newly accredited GEF Project Agencies*)
 For newly accredited GEF Project Agencies, please download and fill up the required **GEF Project Agency Certification of Ceiling Information Template** to be attached as an annex to the PIF.

⁶⁸For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

⁶⁹GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF

Appendix 1: Links between the baseline projects and the proposed LDCF-financed project

| Baseline projects Goals and activities | Climate change hazards affecting the baseline projects | Impacts to the baseline projects and targeted populations as a result of climate change | Targeted ecosystem services of the LDCF project | Alternative scenario including complementary activities of the LDCF-financed project | Expected LDCF project benefits |
|--|---|--|--|--|--|
| <p><i>Project targeted vulnerable sites and communities:</i> Local communities living in the Kathmandu Valley that experience the adverse effects climate change, in particular: i) increasing maximum temperatures; ii) shifting rainfall); and iii) an increasing frequency of climate-induced extreme events including droughts and floods.</p> | | | | | |
| <p>Bagmati River Basin Project <i>The five overarching objectives of this project are to: i) establish systems and build capacity for integrated and participatory management of the river basin; ii) improve riverbanks in urban areas; iii) increase water availability during the dry season through watershed conservation; iv) establish a functioning flood forecasting and early warning system; and v) promote efficient project management through effective stakeholder communication</i></p> | <ul style="list-style-type: none"> Increasing frequency of climate-induced extreme events including droughts and floods. | <ul style="list-style-type: none"> Reduced efficiency of revegetation activities as a result of increased frequency and severity of drought. | <ul style="list-style-type: none"> Climate-resilient plants riparian plants. | <ul style="list-style-type: none"> Tailoring the restoration of climate resilient wetlands. Building technical capacity to plan and implement EbA and integrate this approach into: i) participatory management of the river basin; and ii) riverbank improvement in urban areas. Strengthening policies and strategies that promote climate-resilient water management. Increasing awareness on the benefits of EbA to restore wetlands⁷⁰. | <ul style="list-style-type: none"> Climate-resilient wetlands that reduce the impacts of floods. Appropriate EbA is selected and integrated into plans for river improvement and management in the Kathmandu Valley. An evidence-base on: i) best practice approaches for EbA; and ii) the benefits of wetland restoration using climate resilient species. |
| <p>Kathmandu Valley Road Improvement Project <i>Improve roads to manage the increasing volume of traffic that is using these transport systems.</i></p> | <ul style="list-style-type: none"> Shifting rainfall patterns, which results in unpredictable timing of the monsoon season and an increasing frequency of climate-induced extreme events such as slope failures. | <ul style="list-style-type: none"> Soil degradation results in an increased frequency of slope failures, which degrade road networks. Food security is compromised because road networks are not | <ul style="list-style-type: none"> Decreased surface water runoff and erosion. Increased vegetation cover, soil stability infiltration of water into | <ul style="list-style-type: none"> Establishing climate-resilient vegetation along the length of roads that are improved and widened. Strengthening policies and strategies that promote climate-resilient urban development. | <ul style="list-style-type: none"> Infrastructure development is protected by buffer ecosystems. An evidence-base on best practice approaches for EbA that is integrated into development. |

⁷⁰ increasing awareness of the adaptation benefits of restoring natural capital among the public, policy makers and decision makers

| Baseline projects Goals and activities | Climate change hazards affecting the baseline projects | Impacts to the baseline projects and targeted populations as a result of climate change | Targeted ecosystem services of the LDCF project | Alternative scenario including complementary activities of the LDCF-financed project | Expected LDCF project benefits |
|--|---|---|---|---|---|
| | | properly maintained in the face of climate change. | topsoils. | | |
| <p>Pro-poor Urban Regeneration Pilot Project <i>Contribute to improving the living conditions of vulnerable households by increasing access to income-generating opportunities in cultural industries.</i></p> | <ul style="list-style-type: none"> Increasing maximum temperatures and shifting rainfall patterns (which results in unpredictable timing of the monsoon season). | <ul style="list-style-type: none"> Reduced productivity of agricultural initiatives within the Kathmandu Valley – including community and rooftop gardens – as a result of increased temperature and water stress. | <ul style="list-style-type: none"> Climate-resilient plants that provide income-generating opportunities. Decreased surface water runoff and erosion. Increased vegetation cover, soil stability infiltration of water into topsoils (groundwater recharge). | <ul style="list-style-type: none"> The tailoring of climate-resilient forests/community gardens in existing public open spaces and rooftop agriculture. Building technical capacity to plan and implement EbA for climate resilient livelihoods in the Kathmandu Valley. Strengthening policies and strategies that promote climate-resilient forestry in the Kathmandu Valley. Increasing awareness on the benefits of EbA to restore wetlands⁷¹. | <ul style="list-style-type: none"> Climate-resilient livelihoods, that result in increased adaptive capacity of local communities. Watershed conservation through groundwater recharge. An evidence-base on best practice approaches for EbA to increase access to income-generating opportunities in cultural industries. |

⁷¹Increasing awareness of the adaptation benefits of restoring natural capital among the public including schoolchildren, journalists and policy- and decision makers.

Appendix 2: Coordination with other GEF and non-GEF projects

Enhancing capacity, knowledge and technology support to build climate resilience of vulnerable developing countries is a GEF/SCCF-funded project. The National Development and Reform Commission (NDRC) of China, through the Institute of Geographic Sciences and Natural Resources Research (IGSNRR), is the executing agency for this project. The main aim of the project is to build climate resilience using EbA in Least Developed Countries (LDCs) and Small Island Developing States (SIDS) in the Asia-Pacific region and Africa. Information on lessons learned in the implementation of the SCCF-funded project will be collated and disseminated to the project team and local communities, using awareness campaigns. In addition, to promote complementarity and avoid duplication, the proposed LDCF-financed project will build synergies with the SCCF-funded project to measure long-term effects of EbA that will be implemented by both projects.

The **Ecosystem-based Adaptation in Mountain Ecosystems** project (hereafter the BMU-funded project) is implemented by UNEP, UNDP and IUCN and funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). This project is one of the UNEP EbA flagship projects. Its objective is to strengthen the capacities of Nepal, Peru and Uganda to promote EbA options in their adaptation strategies. MoSTE and MoFSC are executing the project in Nepal. In particular, the BMU-funded project supports: i) the development of methodologies and tools for mountain ecosystems; ii) the application of these tools and methodologies at a national level; iii) the implementation of EbA pilots at the ecosystem level; and iv) the formulation of relevant national policies and development of an economic case for EbA at a national level. Furthermore, opportunities for experimental learning among countries in the same region and between regions have been created. This project will enhance the learning curve of local and national institutions as well as fast track the transfer of knowledge and experience of increasing ecosystem resilience through EbA. This will be done through parallel and cooperative development, as well as the application of methodologies and tools in addition to the implementation of pilot projects. So far, the BMU-funded project has conducted a number of activities⁷², including defining a methodology for Vulnerability Impact Assessment (VIA).

The Hariyo Ban Nepal ko Dhan (Hariyo Ban) USAID Programme is implemented by CARE, WWF, National Trust for Nature Conservation (NTNC) and Federation of Community Forest Users Nepal (FECOFUN). This five-year project⁷³ supports climate change adaptation and natural resource management to reduce threats to biodiversity as well as vulnerability to climate change. Therefore, the proposed LDCF-financed project will consult with this programme to identify the most cost-effective EbA interventions for existing public open spaces in the Kathmandu Valley.

The Nepal Climate Change Support Programme (NCCSP) is funded by the UK DFID and EU, and is implemented by MoSTE⁷⁴. UNDP is providing technical assistance. The programme will increase the climate-resilience and reduce the vulnerability of poor communities using adaptation interventions. The proposed LDCF-financed project will make all technical information available to the NCCSP to be integrated into the KAPA. Experiences of the NCCSP in implementing LAPA for a municipality will provide lessons to select, prioritise and implement adaptation actions in the urban areas of the Kathmandu Valley. Updates of the KAPA will also be made available.

The Pilot Programme for Climate Resilience (PPCR) – Strategic Programme for Climate Resilience (SPCR) is funded by the Climate Investment Fund (CIF), which is led by the Asian Development Bank, International Finance Corporation and World Bank. The SPCR – implemented by MoSTE – will integrate climate resilience into development planning. Therefore, the proposed LDCF-financed project will work with the SPCR to avoid duplication and complement activities.

⁷² List of accomplishments Available at: http://www.undp.org/content/nepal/en/home/operations/projects/environment_and_energy/EbA/# Accessed on 12 September 2013.

⁷³The project started in 2011.

⁷⁴ Implementing partners include Ministry of Federal Affairs and Local Development (MoFALD), District Development Committees (DDCs), District Energy, Environment and Climate Change Sections (DEECCS).

Enhancing Capacities on Climate Change Adaptation and Disaster Risk Management for Sustainable Livelihoods in the Agricultural Sector is implemented by the FAO. This ongoing project began in 2008 and focuses on district- and community-level activities, and establishing capacity building at a national level. It will demonstrate viable adaptation practices for climate change in the Banke and Surkey Provinces. The proposed LDCF-financed project will collaborate with this programme to collate information on agriculture and livelihoods for adaptation to climate change.

Practical Action Nepal Office has numerous ongoing projects related to climate change in Nepal. The organisation has three main objectives⁷⁵, namely: i) to reduce the vulnerability of local communities with regards to food security, risks from disaster and climate change; ii) to promote access to markets for smallholder farmers; and iii) to promote infrastructure for impoverished local communities. Practical Action's programmes promote: i) access to energy; ii) agriculture, forestry and food security; iii) urban waste, water and sanitation; iv) disaster risk reduction; v) climate change; and vi) markets. Accordingly, the proposed LDCF-financed project will consult with this office to develop alternative livelihoods and strengthen market links.

Hariyo Chowk Community Garden represents a collaboration between CATAList design and Sattya Media Arts Collective to build an urban garden and outdoor art space for public enjoyment and education⁷⁶. The proposed LDCF-financed project will collate lessons learned from this initiative and support this garden to implement EbA.

The **Cities and Climate Change Initiative (CCCI)**, coordinated and implemented by UN-Habitat, is the flagship programme of the Sustainable Urban Development Network (SUD-Net). This initiative brings together local and national governments, academia, NGOs and international organisations with the objective of strengthening their capacities to respond to climate change. Within this initiative, the KAPA is being developed. Therefore, the proposed LDCF-financed project will coordinate with CCCI to develop roadmaps for Kathmandu Valley that integrate EbA.

The Nepal Environment and Tourism Initiative, supported by Soumen Latu: The Outdoor Association of Finland, implemented the **Nepal Tourism, Outdoor Environment and Development Project (NTODEP)**. The objective of this project included *inter alia* community focused eco-tourism and enhancing the environment for better tourism. Accordingly, the LDCF-financed project will meet with stakeholders that were involved in this project to collect information on opportunities and challenges for eco-tourism in the Kathmandu Valley.

The **Urban Agriculture and Climate Change (UACC)** initiative is supported by UN-Habitat and the Resource Centres on Urban Agriculture and Food Security (RUAF) Foundation. UACC has a mandate to integrate Urban and Peri-Urban Agriculture and Forestry (UPAF) in policies for development in three major cities including Kathmandu. UACC is supporting a local NGO – the Environment and Public Health Organisation (ENPHO) – to promote productive rooftop gardens, rainwater harvesting and recycling of organic household waste using climate-smart technologies. The proposed LDCF-financed project will coordinate with this initiative to avoid duplication and promote complementarity of project activities. To this end, the project will work in different VDCs and prioritise appropriate technologies that have been identified by UACC.

The objective of the **Rural-Urban Partnership Programme (RUPP)** – implemented in 1997 – is to support sustainable livelihoods of the rural and urban poor⁷⁷. Building on successful community mobilisation initiatives, RUPP addresses both physical and socio-economic aspects of urban development. RUPP is a joint programme including National Planning Commission (NPC), Ministry of Local Development (MLD) and Ministry of Physical Planning and Works (MPPW) of then His Majesty's Government of Nepal (HMG), and the United Nations Development Programme (UNDP). The United Nations Human Settlement Programme (UN-HABITAT) is responsible for executing RUPP. Furthermore, RUPP has extensively involved local municipalities and communities at the grass-root level. The programme's objectives include: i) securing livelihoods of rural and urban

⁷⁵ Further details of these objectives are discussed in: The Practical Action Nepal Office Annual report 2011/2012. Available at: <http://practicalaction.org/media/view/29459> Accessed on 15 September 2013.

⁷⁶ Inhabitat. 2012. Help kick-start the Hariyo Chowk.

⁷⁷ <http://www.rupp.org.np/aboutus.asp>.

poor through social mobilisation, focusing on vulnerable groups; ii) strengthening economic and planning linkages between rural and urban areas; iii) improving urban governance to provide efficient basic service delivery; and iv) strengthening national level government and civil society institutions to implement the 10th Five Year Plan Urban Section. The proposed LDCF-financed project will contribute to these objectives using its community-based activities that will particularly involve women, to support alternative livelihoods.

Appendix 3: Details of stakeholders roles in project design

| Organisation/institution | Role in project design |
|---|--|
| Management and project implementation | |
| KVDA | Review and coordinate project design. |
| UNEP | Oversee project design. |
| MoFSC | Contribute information on logistics and modality of implementation of EbA in existing green spaces and restore river vegetation. |
| MoAD | Contribute information on logistics and modality of implementation of EbA to establish local community and rooftop gardens. |
| MoSTE | Contribute to coordinate meetings for stakeholders involved in climate change projects. Contribute information on modality and implementation of existing climate change projects. |
| MoUD | Contribute information on: i) planned urban development for the Kathmandu Valley; and ii) how the proposed LDCF-financed project can synergise with and complement plans for development. |
| MoLRM | Contribute information on: i) current management of land in the Kathmandu Valley; and ii) how the proposed LDCF-financed project can work within land management systems. |
| National stakeholders | |
| UN-Habitat | Contribute information on climate vulnerability of the Kathmandu Valley, including the KAPA. |
| Resource Centres on Urban Agriculture and Food Security (RUAFF) | The country office for RUAFF will contribute information on urban agriculture for the Kathmandu Valley. |
| Nepal Academy of Science and Technology (NAST) | Contribute information on how research systems should be established to monitor the effects of EbA in the short-, medium- and long-term. |
| Tribhuvan University | Contribute information on: i) existing EbA research; and ii) how systems should be established to monitor the effects of EbA in the short-, medium- and long-term. |
| National Planning Commission (NPC) | Contribute information on suitable roadmaps and plans for the Kathmandu Valley. |
| National Trust for Nature Conservation (NTNC) | Contribute information on: i) initiatives that are being implemented; ii) challenges and successes of these initiatives; and iii) coordination mechanisms of these initiatives at a national, regional and district level. |
| International Centre for Integrated Mountain Development | |
| Institute for Social and Environmental Transition (ISET-N) | |
| Nepal Forum of Environmental Journalists | Contribute information on media campaigns and public awareness in Nepal. |
| Non-Government Organisations (NGOs) | |
| International Union for the Conservation of Nature (IUCN) | Contribute information on: i) initiatives that are being implemented; ii) challenges and successes of these initiatives; and iii) coordination mechanisms of these initiatives at a national, regional and district level. |
| World Wildlife Fund for Nature (WWF) | |
| Cooperative for Assistance and Relief Everywhere (CARE) | |
| Food and Agriculture Organisation (FAO) | |
| Practical Action Nepal | |
| Forest Action Nepal | |
| Environment and Public | Contribute information on initiatives for the public environment and health in |

| | |
|---|---|
| Health Organisation (ENPHO) | Kathmandu including <i>inter alia</i> : i) water conservation; ii) water treatment using constructed wetlands; and iii) urban agriculture. |
| Other | |
| Schools | Contribute information on the optimal designs for EbA competitions and interventions that can be implemented on school premises. |
| Local communities and user groups (including women's user groups) | Contribute local knowledge with respect to: i) designs of EbA interventions; and ii) how these interventions will be best designed and implemented to promote local community buy-in. |
| Experts (including socio-economic experts, hydrologists, agricultural experts, civil engineers, bioengineers and climate experts) | Contribute technical information for design of EbA interventions. |

Appendix 4: Logical framework

| Outcome | Output | Indicative activities |
|--|---|---|
| <p>Outcome 1: Increased capacity of national and local government (municipalities) to integrate EbA into development planning in the Kathmandu Valley.</p> <p>LDCF financing: US\$415,140</p> <p>Co-financing: US\$480,000</p> | <p>1.1 Roadmaps developed for medium- and long-term development in the Kathmandu Valley that integrates best-practice EbA.</p> <p>US\$207,570</p> | <ul style="list-style-type: none"> Review studies that have been conducted on climate vulnerability of the Kathmandu Valley in the medium- and long-term, including the Kathmandu Adaptation Plan of Action (KAPA) to identify short-, medium- and long-term adaptation needs. Conduct workshops with government in Kathmandu Valley to select cost-effective EbA interventions that address the short-, medium- and long-term effects of climate change using the UNEP EbA Decision Support Framework (DSF). Design municipal-level roadmaps for the development of the Kathmandu Valley with government. These roadmaps will include recommendations for: i) EbA interventions⁷⁸; and ii) green building and settlement designs⁷⁹. Train relevant ministries⁸⁰, the National Planning Commission (NPC) and Kathmandu Valley Development Authority (KVDA) on: i) the short-, medium- and long-term effects of climate change in the Kathmandu Valley; and ii) monitoring the implementation of municipal-level roadmaps for short-, medium- and long-term development that incorporate best-practice EbA. |
| | <p>1.2 Policies, strategies and plans revised and recommendations provided to promote EbA in land management and development in the Kathmandu Valley.</p> <p>US\$166,056</p> | <ul style="list-style-type: none"> Review policies, strategies and plans for the Kathmandu Valley for relevant sectors (including <i>inter alia</i> urban development, forestry and water management) to identify entry points for interventions and recommendations that are included in the roadmaps developed in Output 1.1. Recommend revisions to policies, strategies and plans that support the roadmaps developed in Output 1.1. Include recommendations on allocations for domestic expenditure within relevant sectors and sub-sectors to support these revisions. Develop policy briefs on recommended revisions to policies, strategies and legislation. |
| | <p>1.3 Orientation programme provided for national government on revised policies, strategies and legislation that promote EbA.</p> <p>US\$41,514</p> | <ul style="list-style-type: none"> Conduct an orientation programme for decision- and policy-makers to present recommended revisions to strategies, plans and legislation to promote EbA. At these programmes, disseminate the policy briefs developed on this topic. |
| <p>Outcome 2: Knowledge and awareness of local communities living in the Kathmandu Valley on EbA enhanced.</p> | <p>2.1 Regional workshops organised for programme managers to share lessons</p> | <ul style="list-style-type: none"> Collate information on barriers and opportunities that have been experienced by project teams that are implementing EbA in countries throughout Asia and Latin |

⁷⁸ For example, Integrated Urban Water Management (IUWM), Sustainable Urban Drainage Systems (SUDs), urban agriculture and urban forestry.

⁷⁹ For example, architectural designs for community areas or buildings that support: i) rainwater conservation; ii) groundwater recharge; and iii) urban agriculture.

⁸⁰ Including the Ministries of: Science, Technology and Environment; Forests and Soil Conservation; Urban Development; Water Resources and Health and Population.

| Outcome | Output | Indicative activities |
|---|---|--|
| <p>LDCF financing: US\$474,445</p> <p>Co-financing: US\$1,150,000</p> | <p>learned, including cost-effective EbA tools.</p> <p>US\$47,445</p> | <p>America. Develop briefs from this information.</p> <ul style="list-style-type: none"> Organise and conduct a workshop in Kathmandu city for project managers of EbA initiatives that are being implemented in Asia and Latin America⁸¹. |
| | <p>2.2 Research projects conducted on EbA interventions that are implemented in the Kathmandu Valley.</p> <p>US\$71,167</p> | <ul style="list-style-type: none"> Identify research topics to measure the effects of EbA interventions (at various stages) that are implemented in the Kathmandu Valley within the proposed LDCF-financed project. These topics will be identified with local academic institutions, MoSTE, MoFSC, MoAD and relevant experts. Develop a strategy to measure the effects of EbA interventions that are implemented in the Kathmandu Valley including: i) funding opportunities for medium- and long-term research; ii) protocols to collect, process and analyse the data for this research; and iii) a Memorandum of Agreement (MoA) between all organisations involved. This plan should also detail how the data that is collected by the students for research will contribute to the Monitoring and Evaluation (M&E) of the proposed LDCF-financed projects' targets and indicators. Select MSc students from local universities to conduct research on the effects of EbA interventions that are implemented in the Kathmandu Valley within the proposed LDCF-financed project. During the lifespan of this project, short-term research will be completed while medium- and long-term research will be initiated. Monitor and evaluate the progress of selected students⁸². Disseminate information from the progress and/or findings of research on EbA that is conducted by the students by: i) presentations to MCCICC; ii) national meetings that are organised by the KVDA; and iii) international and national journals⁸³. |
| | <p>2.3 School project competition to strengthen the technical capacity of the youth to implement EbA in the Kathmandu Valley.</p> <p>US\$118,611</p> | <ul style="list-style-type: none"> Coordinate competitions for schools in Kathmandu – one competition for primary schools and one for secondary schools – to design small-scale EbA projects that can be implemented on school premises. Information on the competition will be disseminated during the awareness campaign. In addition, posters and flyers – that include a basic description of EbA – will be disseminated to schools in the Kathmandu Valley. Select 10 winning designs from schools⁸⁴ based on criteria including: i) understanding on EbA, based on research conducted by the schools; ii) contribution to climate change adaptation; iii) innovativeness; and iv) cost-effectiveness of the project designs. Support schools to add detail to the designs of the winning EbA projects. Provide funding to implement the small-scale EbA projects on school premises. |

⁸¹During these workshops, programme managers will present on the opportunities and challenges that they have experienced while implementing EbA.

⁸² Financial and technical support for research from the proposed LDCF-financed project will be performance based.

⁸³ The students who conduct the research will be responsible for disseminating this information.

⁸⁴ Five primary schools and five secondary schools.

| Outcome | Output | Indicative activities |
|---|---|---|
| | 2.4 Awareness-raising campaigns implemented on the effects of climate change in the Kathmandu Valley and the role of EbA to manage these effects. US\$142,334 | <ul style="list-style-type: none"> • Monitor the progress of the small-scale EbA projects. • Coordinate open days at schools that are implementing EbA⁸⁵. |
| | 2.5 A knowledge-sharing platform strengthened and/or established on EbA best practices for Kathmandu Valley. US\$94,889 | <ul style="list-style-type: none"> • Document project progress and lessons learned. • Design and implement awareness campaigns on EbA in the Kathmandu Valley. These campaigns should include information on the progress of the proposed LDCF-financed project and the lessons learned. To reach the public, the campaigns will be implemented using: i) magazine publications (Face-to-face)⁸⁶; ii) radio; and iii) television shows. |
| Outcome 3: Local communities in the Kathmandu Valley implementing EbA to manage the effects of climate change. LDCF financing: US\$5,145,025 Co-financing: US\$13,554,000 | 3.1 Technical training provided for local government and communities on planning and implementing EbA interventions in the Kathmandu Valley. US\$504,098 | <ul style="list-style-type: none"> • Collate all information on effective interventions and policies on EbA in the Kathmandu Valley for adaptation to climate change. • Design and establish a web platform – that is embedded within a relevant institution – to share information on climate risks and EbA options for the Kathmandu Valley. • Share all information on climate risks and EbA best-practices for adaptation to climate change in Kathmandu Valley through the web-based portal. • Work with the relevant institution to develop a strategy to ensure that the platform will be managed and updated in the medium- and long- term. |
| | 3.1 Technical training provided for local government and communities on planning and implementing EbA interventions in the Kathmandu Valley. US\$504,098 | <ul style="list-style-type: none"> • Develop training material and technical guidelines for the implementation of EbA interventions in the Kathmandu Valley within the proposed LDCF-financed project. These interventions will promote EbA by: i) increasing water supply⁸⁷ and promoting groundwater recharge; ii) promoting soil stability; and iii) developing climate-resilient livelihoods. • Train local government (including municipalities), NGOs, CBOs and user groups in Bhaktapur, Lalitpur and Kathmandu Districts on EbA interventions that will be implemented within the proposed LDCF-financed project. |

⁸⁵ At these open days, students from other schools visit the small-scale EbA sites to: i) learn about activities that are being implemented; and ii) take part in the activities.

⁸⁶ 'Face-to-face' is a local magazine that includes information on environmental topics and climate change.

⁸⁷ Including training on IUWM.

| Outcome | Output | Indicative activities |
|---------|--|---|
| | <p>3.2 EbA interventions implemented in the Kathmandu Valley.</p> <p><i>US\$3,931,965</i></p> | <ul style="list-style-type: none"> • Design protocols for implementing cost-effective EbA interventions in the Kathmandu Valley. These will include EbA interventions for: i) water conservation and groundwater recharge⁸⁸; ii) soil stability, particularly along roadsides and in areas with high risk to slope failures⁸⁹; and iii) promoting climate-resilient livelihoods⁹⁰. • Implement EbA interventions in the Kathmandu Valley. These interventions will include: i) multi-use forests/community gardens in existing public open spaces; ii) soil bioengineering along particular lengths of the rivers in the Kathmandu Valley catchment, roads that are being developed and on steep slopes; and iii) climate-resilient rooftop agriculture⁹¹. • Monitor EbA interventions⁹². |
| | <p>3.3 Community-based alternative livelihood improvement plans developed and piloted from EbA interventions that are implemented in the Kathmandu Valley.</p> <p><i>US\$604,918</i></p> | <ul style="list-style-type: none"> • Identify Income Generating Activities (IGAs) from EbA interventions⁹³. • Develop Climate-Resilient Community Livelihood Improvement Plans (CRCLIPs) from IGAs with indigenous and local communities, and local government. These CRCLIPs will include business plans and sustainability strategies. • Implement CRCLIPs to develop alternative livelihoods that promote EbA. |

⁸⁸ Including: i) riverbank stabilisation/improvement and wetland rehabilitation; ii) planting tree species with deep root systems to promote groundwater recharge; and iii) IUWM.

⁸⁹ Including soil stabilisation along roadsides by planting tree species that grow quickly and have deep root systems to bind soils.


⁹⁰ Including: i) urban agriculture in rooftop or local community garden spaces using climate-resilient species; and ii) ecotourism in EbA spaces in Kathmandu, for example educational treks and mountain bike trails.

⁹¹ For example, production of low height pot-based perennial fruit trees on rooftop gardens or balconies.

⁹² Financial and technical support to municipalities to implement EbA through the proposed LDCF-financed project will be performance based


⁹³ For example: i) harvesting, processing and selling of vegetables, fruits, medicinal plants or aromatic plants that are grown in local community and rooftop gardens; and ii) educational eco-tourism walks or mountain biking adventures in green spaces.

Appendix 5: Endorsement letter from GEF Operational Focal Point, Nepal



Government of Nepal MINISTRY OF FINANCE

International Economic Cooperation Coordination Division SINGHADURBAR
KATHMANDU, NEPAL

TECCD/GEF/URBAN/100-2014/15 

19 November 2014

To: Brennan VanDyke
Director GEF Coordination Office,
UNEP, Nairobi

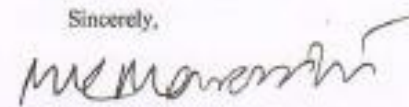
Subject: Endorsement for Ecosystem-Based Adaptation for climate-resilient development in the Kathmandu Valley, Nepal

In my capacity as GEF Operational Focal Point for Nepal, I confirm that the above project proposal (a) is in accordance with my government's national priorities including the priorities identified in the National Adaptation Plan of Action, and if any, findings from climate change assessments and reports, and our commitment to the relevant global environmental conventions; and (b) was discussed with relevant stakeholders, including the global environmental convention focal points.

I am pleased to endorse the preparation of the above project proposal with the support of the GEF Agency(ies) listed below. If approved, the proposal will be prepared and implemented by UNEP. I request the GEF Agency(ies) to provide a copy of the project document before it is submitted to the GEF Secretariat for CEO endorsement.

The total financing (from GEPTF, LDCF, or SCCF) being requested for this project is US\$7,000,007, inclusive of project preparation grant (PPG), if any, and Agency fees for project cycle management services associated with the total GEF grant. The financing requested for Nepal is detailed in the table below.

| Source of Funds | GEF Agency | Focal Area | Amount (in US\$) | | | |
|----------------------------|------------|------------|---------------------|-----------|---------|-----------|
| | | | Project Preparation | Project | Fee | Total |
| LDCF | UNEP | Climate Ch | 150,000 | 6,242,700 | 607,307 | 7,000,007 |
| (select) | (select) | (select) | | | | 0 |
| (select) | (select) | (select) | | | | 0 |
| (select) | (select) | (select) | | | | 0 |
| Total GEF Resources | | | 150,000 | 6,242,700 | 607,307 | 7,000,007 |

Sincerely,

Madhu Kumar Marasini
GEF Operational Focal Point for Nepal

CC: Development Commissioner, Kathmandu Valley Development Authority, Anamnagar

GEF Operational Focal Point Endorsement Template, July 2014

Tel: Minister 4211809, Secretary 4211332, Foreign Aid Division 4211372, 4211867
Fax No. 4211164, 4211165, Website: www.mof.gov.np