



GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: Least Developed Countries Fund

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PART I: PROJECT INFORMATION

Project Title:	Building the resilience of local communities in Zambia through the introduction of Ecosystem-based Adaptation (EbA) into priority ecosystems, including wetlands and forests.		
Country(ies):	Zambia	GEF Project ID: ¹	8034
GEF Agency(ies):	UNEP	GEF Agency Project ID:	01348
Other Executing Partner(s):	Ministry of Lands and Natural Resources	Submission Date:	18 February 2015
		Resubmission date:	August 11, 2017
GEF Focal Area(s):	Climate Change Adaptation	Project Duration (Months)	48 months
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP	<input type="checkbox"/>
Name of parent program:	[if applicable]	Agency Fee (\$)	587,575

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 1.2	LDCF	2,002,000	7,100,000
CCA-2, Outcome 1.3	LDCF	2,937,875	8,825,000
CCA-2, Outcome 2.1	LDCF	1,245,125	1,725,000
Total Project Cost		6,185,000	17,650,000

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: To increase the capacity of government and local communities in Zambia living around wetlands and forests to adapt to climate change using Ecosystem-based Adaptation (EbA)						
Project Components	Financing Type ³	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
Component 1: Institutional and technical capacity development for EbA in Zambia.	TA	Outcome 1: Technical and institutional capacity to integrate EbA into existing management plans for ecosystems is increased at local and national level.	<i>Output 1.1:</i> Local and national authorities trained on EbA techniques for restoring and protecting ecosystems. <i>Output 1.2:</i> Climate impacts to ecosystems, particularly wetlands and forests, in Zambia are assessed and mapped under the latest climate scenarios. <i>Output 1.3:</i> Policy revisions proposed to support an integrated approach to environmental management. <i>Output 1.4:</i> Tools and platforms developed for	LDCF	1,767,143	3,476,587

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 excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#).

³ Financing type can be either investment or technical assistance.

			integrated environmental management. <i>Output 1.5:</i> A strategy developed to sustain, replicate and upscale EbA interventions in wetlands and forests.			
Component 2: Implementation of wetland and forest EbA interventions in Zambia.	Inv	Outcome 2.1: Resilience of communities living around degraded ecosystems is built against climate change impacts through the implementation of EbA interventions in wetlands and forests.	<i>Output 2.1.1:</i> Protocols/guidelines for EbA developed and implemented. <i>Output 2.1.2:</i> Local communities and provincial environmental officers at project intervention sites are trained to design, implement and sustain the project's EbA interventions. <i>Output 2.1.3:</i> Degraded forest areas restored using an EbA approach to reduce climate change vulnerability of local communities in the Bangweulu Wetlands and surrounding areas. <i>Output 2.1.4:</i> Degraded wetland areas restored using an EbA approach to reduce climate change vulnerability of local communities in the Bangweulu Wetlands and surrounding areas. <i>Output 2.1.5:</i> Energy efficiency increased and a diversity of renewable energies implemented to reduce unsustainable rates of use of natural resources, including fuel wood.	LDCF	2,945,238	11,651,587
		Outcome 2.2: Communities living around the project intervention sites have increased capacity to adopt alternative livelihoods and climate-smart agriculture techniques to decrease their vulnerability to climate change and reduce	<i>Output 2.2.1:</i> Community-specific alternative livelihood plans, identifying alternate livelihood strategies appropriate for each community based on EbA activities, are developed. <i>Output 2.2.2:</i> Community members and provincial environmental officers are trained on alternative livelihoods and sustainable land management techniques. <i>Output 2.2.3:</i> Climate-			

		degradation of ecosystems.	smart agricultural techniques – such as agroforestry and conservation agriculture – and efficient irrigation techniques are implemented in target communities. <i>Output 2.2.4:</i> Climate-resilient livelihoods identified and implemented at project sites. <i>Output 2.2.5:</i> Establish community associations at project sites.			
Component 3: Knowledge and research on EbA and climate resilient livelihoods.	Inv	Outcome 3: Increased knowledge and awareness of: i) the ecosystem services provided by wetlands and forests; and ii) the benefits of EbA for increasing the resilience of ecosystems and livelihoods to climate change.	<i>Output 3.1:</i> Communication strategy developed to collect and disseminate knowledge and best practices on EbA for wetlands and forests. <i>Output 3.2:</i> Awareness-raising campaign conducted on: i) the ecosystem services provided by wetlands and forests; and ii) the benefits of EbA for increasing the resilience of ecosystems and livelihoods to climate change. <i>Output 3.3:</i> Long-term research programme, on ecosystems and EbA, established within relevant national research institutions.	LDCF	1,178,095	1,676,587
Subtotal					5,890,476	16,804,761
Project Management Cost (PMC) ⁴				LDCF	294,524	845,239
Total Project Cost					6,185,000	17,650,000

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ()

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

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
International Donor	World Bank (Water Resources Development Project)	Grant	15,000,000
Private Sector	African Parks (Bangweulu Wetlands Project)	In-kind	750,000
International Donor	WWF (Miombo Eco-region Conservation Project)	In-kind	300,000
International Donor	Zambia Crane and Wetlands Conservation Project	In-kind	100,000

⁴ 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.

Government	Government of Zambia –Rural Electrification Authority (Lunga Solar Mini Grid Electrification Project)	Cash	1,500,000
Total Co-financing			17,650,000

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
UNEP	LDCF	Zambia	Climate Change		6,185,000	587,575	6,772,575
Total GEF Resources							

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

E. PROJECT PREPARATION GRANT (PPG)⁵

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

Project Preparation Grant amount requested: \$150,000					PPG Agency Fee: \$14,250		
GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee ⁶ (b)	Total c = a + b
UNEP	LDCF	Zambia	Climate Change	(select as applicable)	150,000	14,250	164,250
Total PPG Amount					150,000	14,250	164,250

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS⁷

Provide the expected project targets as appropriate.

N/A.

⁵ PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to \$50k for PF up to \$2m (for MSP); up to \$100k for PF up to \$3m; \$150k for PF up to \$6m; \$200k for PF up to \$10m; and \$300k for PF above \$10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

⁶ PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

⁷ Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and/or SCCF.

ACRONYMS

CBOs	Community-based Organisations
EbA	Ecosystem-based Adaptation
EMPs	Environmental Management Plans
GEF	Global Environmental Facility
GMA	Game Management Areas
GoZ	Government of Zambia
INC	Initial National Communication
IWRMIS	Integrated Water Resource Management Information System
LDCF	Least Developed Countries Fund
LSMREP	Lunga Solar Mini-grid Rural Electrification Project
MDGs	Millennium Development Goals
MECP	Miombo Eco-Region Conservation Programme
NAPA	National Adaptation Plan of Action
NBSAP	National Biodiversity Strategy Action Plan
NCCRS	National Climate Change Response Strategy
NCSA	National Capacity Self-Assessment
NFP	National Forestry Policy
NGOs	Non-governmental Organisations
NPE	National Policy on Environment
NTFPs	Non-timber Forest Products
PPCR	Pilot Programme for Climate Resilience
REA	Rural Electrification Authority
SNC	Second National Communication
SNDP	Sixth National Development Plan
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WRDP	Water Resources Development Project
WRMA	Water Resources Management Authority
ZAWA	Zambian Wildlife Authority
ZEMA	Zambia Environmental Management Agency
ZCWCP	Zambia Crane and Wetland Conservation Project

PART II: PROJECT JUSTIFICATION

1. *Project Description.*

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

Zambia's population is estimated to be ~14 million people with an average annual growth rate of ~2.8%⁸. Currently, 60% of Zambia's population reside in rural areas and are largely dependent upon natural resources for their livelihoods, such as fishing, forestry and agriculture – which contribute 2.7%, 5.4% and 15.3% to GDP respectively⁹. Wetland and forest ecosystems in Zambia are important for rural livelihoods, providing a wide array of products for both subsistence and cash income, such as fuel woods, timber, medicinal plants and a variety of food sources – including fish, honey and fruits¹⁰. Forests provide a variety of ecosystem services, including *inter alia*: i) cultural and social services such as recreation and tourism; ii) regulating services such as soil protection, air/water purification and carbon sequestration; and iii) nutrient cycling and soil accretion. Wetlands provide *inter alia*: i) regulation of quality and availability of water; ii) control of sediments; iii) flood attenuation; and iv) provision of breeding and feeding habitats for a variety of species.

An increased demand for food, fuel woods and other ecosystem services has led to degradation of wetland and forest ecosystems. The main drivers of deforestation and degradation include agricultural expansion (77.3%) and wood harvesting for timber (16.8%), as well as charcoal production (4.5%)¹¹. Consequently, Zambia is losing an estimated 278,000 ha of forest cover annually¹². In addition, population growth and unsustainable land use practices have resulted in a decline in wetland productivity. The degradation of these ecosystems has adverse effects on wildlife resources, particularly certain endangered species that are currently facing threats of extinction¹³. These species are important to the socio-economic development of Zambia through their contribution to tourism and job creation. The degradation of wetland and forest ecosystems is of increasing concern because it reduces the capacity of these ecosystems to provide ecological and socio-economic services.

Deforestation and degradation negatively affect the capacity of ecosystems to act as a buffer against the impacts of climate change. Consequently, areas which are affected by widespread ecosystem degradation are relatively more vulnerable to natural disasters and climate-related hazards¹⁴. Regulating services provided by ecosystems are therefore critical for climate change adaptation. Currently, the main climate changes observed in Zambia are: i) an increase in extreme temperatures; ii) decreased rainfall across the country; and iii) an increase in the frequency of extreme events. The last four decades have also been characterised by delayed onset and earlier cessation of rainfall. This results in shorter rainy seasons with more intense rainfall. Floods and droughts have increased in frequency costing the nation ~0.4% in annual economic growth^{15,16}. For example, the 2006–2007 flood affected over 1 million

⁸ <https://www.cia.gov/library/publications/the-world-factbook/geos/za.html>. Accessed on 2 December, 2014.

⁹ Integrated Land Use Assessment, 2008.

¹⁰ Wetlands, including dambos¹⁰, are a major source of livelihood for rural communities in Zambia. These are predominantly used for grazing animals and growing vegetables during the dry season. In addition, wetlands and dambos are important for fishing, livestock watering, hunting of small animals and the collection of thatching grass. Constraints on crop production in dambos include weed infestation, flooding, acidity and vulnerability to pests and diseases.

¹¹ Zambia 2014. Second National Communication to the United Nations Framework Convention on Climate Change.

¹² Zambia, 2014. Second National Communication to the United Nations Framework Convention on Climate Change.

¹³ The Bangweulu Wetland ecosystem is the nesting and feeding area of Wattled Cranes (*Bugeranus carunculatus*), Shoebills (*Balaeniceps rex*) and grazing area for the endemic Black Lechwe (*Kobus lechwe smithemani*).

¹⁴ For example, degradation of vegetation and soils in watershed areas will result in increased runoff of rainwater and increased intensity of flooding downstream. Furthermore, topsoils lost as a result of erosion are deposited in waterways, reducing the quality of freshwater as well as the storage capacity of freshwater bodies.

¹⁵ https://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/IFC%20PPCR_Zambia_Natural_Resources_Public_Full_English_20Dec2013.pdf. Accessed on 2 December 2014.

¹⁶ The effects of floods include *inter alia*: i) the loss of life; ii) livestock and human diseases; iii) destruction of agricultural crops resulting in food shortages; iv) displacement of populations; v) damage to roads, housing and power infrastructure; vi) damage to water infrastructure; and vii) the disruption of the accessibility and delivery of health services.

people across the country, while the 2009–2010 flood affected 238,254 people¹⁷. In addition, a drought in 2004–2005 caused irreversible damage to crops. Complete or near-complete crop failure was experienced in several parts of the country – with an average reduction in yields of 65–72% in agro-ecological zone I – and resulted in Zambia having to import food. It is estimated that climate variability could cause a loss in total GDP of US\$4.3 billion over the next ten years¹⁸. Furthermore, the economic costs of not addressing the effects of climate change would result in a loss of 5–20% of the GDP per annum. In contrast, by implementing measures for climate change adaptation these losses can be reduced to 1–2% of the GDP per annum¹⁹.

The productivity of natural resources which support local livelihoods – e.g. pasture and fodder for grazing – are reduced as a result of both degradation as well as negative impacts of climate change. More specifically, the predicted effects of climate change are likely to lead to: i) increased food insecurity through failed crop yields; ii) increased loss of property and lives through extreme climate events; iii) decreased water availability for drinking and irrigation; iv) reduced water quality; v) increased soil erosion; vi) increased damage to infrastructure; vii) increased frequency of fires as a result of droughts; viii) reduced energy supply through reduced availability of fuel wood for household consumption; ix) reduced hydro-power generation due to projected droughts; and x) biodiversity loss and habitat degradation. To adapt to the effects of climate change and restore degraded wetlands and forests, local communities will be required to implement innovative strategies.

The **problem** that the proposed project seeks to address is that local communities living around forests and wetlands are vulnerable to the current degradation of ecosystems and associated reduction in ecosystem services. This problem is further aggravated by the limited technical and institutional capacity at local and national level to adapt to these predicted effects of climate change. Consequently, there is an urgent need to build capacity to conserve wetlands and forests to address the vulnerability of local communities to climate change and the ongoing degradation of the wetlands and forests in Zambia.

The **proposed solution** is to improve resilience of local people living around the wetlands and forests by strengthening the capacity of local communities – as well as local and national government – to implement Ecosystem-based Adaptation (EbA) interventions. This will be achieved by demonstrating on-the-ground EbA interventions in pilot sites in wetlands and forests in the Bangweulu Wetlands ecosystem and by providing training to local and national government to implement EbA as a tool to adapt to climate change. This training will also include the incorporation of EbA into forest and wetland management plans to facilitate an integrated approach to environmental management. In addition, knowledge and lessons learned on the benefits and implementation of the EbA interventions will be disseminated throughout the pilot sites.

EbA provides a low-cost and effective way to reduce vulnerability to climate change while enhancing multiple ecosystem benefits for vulnerable communities. As part of an integrated adaptation approach, EbA has been shown to require comparatively small investments relative to the long-term social, economic and environmental benefits²⁰. The proposed EbA interventions implemented through this project will address urgent climate change adaptation needs of vulnerable communities living around wetlands and forests. This is in alignment with the priorities of the National Adaptation Plan of Action (NAPA) for Zambia.

Significant barriers for implementing EbA in Zambia exist. These include: i) limited technical capacity to develop and implement climate change adaptation activities, including EbA; ii) absence of policy and legal frameworks; iii) weak institutional coordination between government departments and institutions; iv) minimal understanding of EbA and the benefits provided by ecosystem services as a result of limited on-the-ground examples; v) inadequate tools for the monitoring of climate change; vi) insufficient knowledge and financial resources to integrate EbA into

¹⁷DMMU, 2009. CVAA.

¹⁸ <https://www/issse.ucar.edu/sadc/chptr5.html>. Accessed on 5 December, 2014.

¹⁹ <https://www.dmu-ovp.gov.zm/wp-content/uploads/2014/01/DMMU-CLIMATE-CHANGE-ADAPTATION.pdf>. Accessed on 4 December, 2014.

²⁰ Lavorel, S., Collott, M.J., McIntyre, S., Doherty, M.D., Murphy, H.T., Wise, R.M. & Williams, K.J. 2015. Ecological mechanisms underpinning climate adaptation services. *Global Change Biology*. 21: 12–31.

management plans; and vii) few alternative livelihoods to reduce the vulnerability of local communities to climate change.

The proposed project will overcome these barriers by: i) strengthening the capacity of local and national governments to support local communities to plan and implement EbA; ii) transferring knowledge on EbA to local communities and government at national, sub-national and local level across the pilot sites; iii) updating maps of wetlands and forests in Zambia to assist decision-makers on climate-resilient wetland and forest management; iv) integrating EbA into wetland and forest management plans; and v) implementing EbA and promoting climate-resilient livelihoods to increase the adaptive capacity of local communities around wetlands and forests to climate change.

A.1.2. The baseline scenario and associated baseline projects

The baseline situation in Zambia is inextricably linked to climate variability and change. This is increasingly being recognised in Zambia's policy documents and development plans. The Sixth National Development Plan (SNDP) recognises that Zambia is endowed with natural resources which could support the development of agriculture, tourism, manufacturing, mining and energy sectors. The current Seventh National Development has placed environment as a cross cutting issues and as such all development activities have to take into consideration the need to protect the environmental. Despite the potential economic contributions of these sectors, the prolonged and increasingly frequent droughts experienced over the past few decades have led to increased food insecurity in many parts of the country²¹.

The baseline challenges facing rural Zambia today include: i) declining agricultural productivity; ii) rural poverty and poor health and education; iii) declining access to water and sanitation and iv) environmental degradation. These challenges are fundamental determinants of the vulnerability of rural populations to climate variability and change. Furthermore, these challenges are compounded by non-climate factors, such as: i) insufficient access to productive technology, including agricultural technology and services; ii) insufficient access to rural finances and markets, including degraded infrastructure; iii) inadequate institutional coordination and linkages; and iv) policy uncertainties, including land tenure and property rights.

The initiatives described below are potential baseline projects for the proposed LDCF-financed project.

The **Water Resources Development Project (WRDP)** funded by the World Bank has a budget of US\$50,000,000 for the period 2013–2020. This project will support the implementation of an integrated framework for water resources development and management in Zambia. The objectives of the project are: i) enhancing capacity at national and local level to address the challenges of water resources management in Zambia; ii) addressing the infrastructural deficit; and iii) strengthening the institutional capacity for water resources management and development. The project is targeting rural communities who will benefit from improved small-scale water resource infrastructure and integrated water resource development planning. Through Component 1, the proposed LDCF-financed project will build on the ongoing activities of the WRDP by integrating climate change considerations and EbA into local development planning. The proposed LDCF-financed project will also contribute to the technical capacity developed within the WRDP by providing training on climate change and EbA to local and national government staff. Finally, lessons learned from the WRDP will be integrated into the activities under Component 1 of the proposed LDCF-financed project. The WRDP will contribute US\$15,000,000 as co-financing for the proposed LDCF-financed project.

The **Lunga Solar Mini-Grid Rural Electrification Project (LSMREP)** funded by the Government of Zambia (GoZ) has a budget of US\$3,800,000 for the period 2018–2019. The project will be undertaken by Zambia's Rural

²¹ Other factors, which contribute to food insecurity include *inter alia*: i) inadequate income streams for local communities; ii) access to markets and transport facilities to enable the transfer or purchase of food; and iii) low economic diversification into sectors – such as fisheries – that could supplement crop production.

Electrification Authority (REA). Numerous rural electrification projects will be implemented in Zambia under the Rural Electrification Master Plan. These projects will involve the extension of the national electricity grid, construction of mini-hydro power generation stations, solar power based projects and other renewable energy projects. The objective of the project is to supply electricity to rural areas within the Lunga District, which is an island on the Bangweulu swamps in Luapula Province. The supply of electricity will support the existing economic activities currently taking place on a micro scale. In addition, the electricity will assist the establishment of new businesses in the area. Under Component 2, the proposed LDCF-financed project will build on the economic activities established under the LSMREP through the development of community-specific alternative livelihood plans. These plans will be developed based on feasibility assessments and cost-benefit analysis. In addition, the proposed LDCF-financed project will identify entry points for access to markets and provide support for marketing of products generated by the adoption of climate-resilient livelihood options. The co-financing contribution of this project is estimated at US\$1,500,000.

The **Bangweulu Wetlands Project** has an annual budget of US\$1,500,000 and is managed through a partnership between National Parks and Wildlife Services (NPWS), African Parks and six Chiefdoms located within the park's boundaries that make up the Bangweulu Game Management Areas (GMA). The objective of the project is to restore wildlife and protect the Bangweulu Wetlands ecosystem whilst improving the socio-economic well-being of people living within the GMA. The project has implemented a Sustainable Livelihoods Programme – which is designed to empower communities and raise living standards – as well as two research initiatives²², the results of which will inform management planning²³. The proposed LDCF-financed project, through activities under Component 2, will integrate climate change restoration activities through the demonstration of EbA interventions in forest and wetland ecosystems. These activities will include the promotion of alternative livelihood strategies in target communities and the introduction of climate-smart agricultural techniques. In addition, the proposed LDCF-financed project, mainly through activities under Component 3, will build on the ongoing knowledge management and awareness-raising activities of the project. The co-financing contribution from the Bangweulu Wetlands Project is estimated at US\$750,000.

The WWF's **Miombo Eco-Region Conservation Programme** (MECP) has a budget of US\$500,000. The overarching Miombo Eco-region Conservation Strategy and its delivery targets have been revised for 2011–2020. The strategy aims to protect and restore ecosystem services through the development and implementation of sustainable and equitable land use practices. The four components of the project are: i) Ecological networks and ecosystem integrity: to develop robust and resilient ecological networks within the focal landscapes of the Zambezi River Basin by protecting, restoring and managing biodiversity patterns and processes; ii) Sustainable and equitable use of natural resources: to enhance good governance that promotes equitable access and sustainable use of natural resources with a focus on community level benefits and empowerment; iii) Responsible and fair trade and investment: to optimise the sustainability of market mechanisms (trade/investment) for ecosystem goods and services that benefit people and nature; and iv) Climate change adaptation and mitigation: to create greater resilience (flexibility of ecosystems and land use) to cope with and minimise climate change impacts. The proposed LDCF-financed project, through activities under Component 2, will build on the ongoing activities of the MECP by integrating climate change considerations and EbA into the management of forest and wetland ecosystems within the project intervention sites. Furthermore, the implementation of forest and wetland EbA interventions will contribute towards the sustainable and equitable use of natural resources. The co-financing contribution of this project is estimated at US\$300,000.

The **Zambia Crane and Wetland Conservation Project** (ZCWCP) has a budget of US\$250,000 and will be implemented from 2014. This project is being implemented by the Endangered Wildlife Trust and the International Crane Foundation. The primary objective of the project is to secure crane populations and the wetland habitats on

²² These are the Shoebill Research Project and the Shoebill Conservation Programme. https://www.african-parks.org/Park_3_166_Shoebill+Research+Project.html and https://www.african-parks.org/Park_3_167_Shoebill+Conservation+Programme.html. Accessed on 5 December, 2014.

²³ The data collected includes habitat descriptions and water levels which inform a general understanding about seasonal patterns in changes in the wetlands.

which they depend through conservation action and the implementation of a long-term monitoring and research programme. The project will be directly involved in wetland management activities, including the removal of invasive plant species and ecological monitoring. The proposed LDCF-financed project will bolt onto the ZWCWP scheme by helping to reduce pressure on wetland ecosystems through the implementation of EbA interventions under Component 2. In addition, through activities under Component 3, the proposed LDCF-financed project will build on the long-term monitoring and research of this project. The co-financing contribution of this project is estimated at US\$100,000.

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 living around wetlands and forests in Zambia to implement EbA to increase their adaptive capacity. To this end, EbA will be implemented to: i) increase the resilience of wetland and forest ecosystems; ii) promote livelihood diversification of communities living around wetlands and forests; and iii) increase the adaptive capacity of communities living around wetlands and forests.

By implementing the interventions described above in Section A.1.1, the proposed project will address four NAPA priorities, namely Priorities: 2 – Promotion of alternative sources of livelihoods to reduce vulnerability to climate change/variability to communities living around GMAs; 5 – Promote natural regeneration of indigenous forests; 6 – Adaptation of land use practices (crops, fish, and livestock) in light of climate change; and 8 – Eradication of Invasive Alien Species.

The proposed LDCF-financed project consists of three 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 1.

Component 1: Institutional and technical capacity development for EbA in Zambia

This component will strengthen the technical and institutional capacity of local communities and local and national government to plan and implement EbA around wetlands and forests. In addition, this strengthened capacity will facilitate the integration of EbA into wetland and forest development plans.

Indicative outputs within this component are described below:

Outcome 1: Technical and institutional capacity to integrate EbA into existing management plans for ecosystems is increased at local and national level.

Output 1.1: Local and national authorities trained on EbA techniques for restoring and protecting ecosystems.

Output 1.2: Climate impacts to ecosystems, particularly wetlands and forests, are assessed and mapped under the latest climate scenarios.

Output 1.3: Policy revisions proposed to support an integrated approach to environmental management.

Output 1.4: Tools and platforms developed for integrated environmental management.

Output 1.5: A strategy developed to sustain, replicate and upscale EbA interventions in wetlands and forests.

Component 2: Implementation of wetland and forest EbA interventions in Zambia

This component will implement on-the-ground EbA interventions around wetlands and forests in Zambia. These interventions are designed to reduce the vulnerability of local communities to the effects of climate change.

Indicative outputs within this component are described below:

Outcome 2.1: Resilience of communities living around degraded ecosystems to climate change is increased through the implementation of EbA interventions in wetlands and forests

Output 2.1.1: Protocols/Guidelines for EbA developed and implemented.

Output 2.1.2: Local communities and provincial environmental officers at project intervention sites are trained to design, implement and sustain the project's EbA interventions.

Output 2.1.3: Degraded forest areas restored using an EbA approach to reduce the vulnerability of local communities to climate change in the Bangweulu Wetlands and surrounding areas.

Output 2.1.4: Degraded wetland areas restored using an EbA approach to reduce the vulnerability of local communities to climate change in the Bangweulu Wetlands and surrounding areas.

Output 2.1.5: Reduce deforestation and unsustainable use of natural resources, including fuel wood, by promoting the use of energy efficient technologies and renewable energy.

Outcome 2.2: Communities living around the project intervention sites have increased capacity to adopt alternative livelihoods and climate-smart agricultural techniques to decrease their vulnerability to climate change and reduce degradation of ecosystems (wetlands and forests).

Output 2.2.1: Community-specific alternative livelihood strategies for each community based on EbA activities, are developed.

Output 2.2.2: Community members and provincial environmental officers are trained on alternative livelihoods and sustainable land management techniques.

Output 2.2.3: Climate-smart agricultural techniques, such as agroforestry, conservation agriculture and efficient irrigation techniques, are implemented in target communities.

Output 2.2.4: Climate-resilient livelihoods identified and implemented at project sites.

Output 2.2.5: Establish community associations at project sites.

Component 3: Knowledge and research on EbA and climate-resilient livelihoods.

This component will increase knowledge and awareness of ecosystem services and the benefits of EbA. This will be achieved by: i) promoting awareness; ii) undertaking long-term research; and iii) disseminating information to raise awareness.

Indicative outputs within this component are described below.

Outcome 3: Increased knowledge and awareness of: i) the ecosystem services provided by wetlands and forests; and ii) the benefits of EbA for increasing the resilience of ecosystems and livelihoods to climate change.

Output 3.1: Communication strategy developed to collect and disseminate knowledge and best practices on EbA for wetlands and forests.

Output 3.2: Awareness-raising campaign conducted on: i) the ecosystem services provided by wetlands and forests; and ii) the benefits of EbA for increasing the resilience of ecosystems and livelihoods to climate change.

Output 3.3: Long-term research programme, on ecosystems and EbA, established within relevant national research institutions.

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 build the adaptive capacity of local communities living around wetlands and forests to the climate change hazards described in Section A.1.1. This will be achieved by: i) enhancing the institutional and technical capacity of local and national authorities to plan and implement EbA interventions; ii) developing an upscaling strategy for wetland and forest EbA interventions in Zambia; iii) implementing on-the-ground EbA interventions and local-level community training; iv) developing a long-term research programme to monitor the long-term impacts of the implemented EbA interventions; and v) planning and implementing a public awareness campaign. The additional cost reasoning for each component of the proposed LDCF-financed project is described below.

Component 1: Institutional and technical capacity development for EbA in Zambia.

Without LDCF intervention (baseline):

Without the proposed LDCF-financed project, the technical capacity of Zambian institutions will remain insufficient for planning and implementing EbA on a national scale. The concept of restoring degraded ecosystems to provide buffers against climate change is new to both Zambia and the international community. Awareness of the adaptation benefits of tailor-made EbA for communities is limited both within the general public and amongst policy- and decision-makers. Furthermore, there is insufficient knowledge and capacity in Zambia to plan and execute activities that will increase the resilience of local communities to climate change through EbA interventions. Individual line ministries also lack the technical capacity to fully develop the potential suite of adaptation benefits that can arise from EbA. Consequently, policy-makers and government structures are not actively promoting EbA at present.

In addition to a limited consideration for climate change adaptation, there is weak coordination between sectors on the activities for climate change adaptation that are taking place. Poor coordination as well as inadequate technical capacity to plan and implement EbA will hinder the uptake of an EbA approach at a national level. Reducing the vulnerability of communities to the impacts of climate change and variability by restoring degraded ecosystems requires detailed cross-sectoral dialogue between experts in sectors such as agriculture, energy, forestry, water, transport, health and tourism. Currently, dialogue between line ministries is poor and uncoordinated. Therefore, in the absence of the proposed LDCF-financed project, restoration and EbA interventions will likely remain *ad hoc* and will be confined to the specific focal areas of individual organisations. For example, activities related to reforestation that do not include an EbA focus are likely to remain vulnerable to the effects of climate change, and will not achieve the synergies and benefits outlined in Section A.1.5 above.

In the absence of the proposed LDCF-financed project, large-scale EbA will not occur in Zambia. Although EbA may be undertaken in isolated pockets, it is likely that EbA will not be integrated into national strategies and restoration will remain *ad hoc* and only responding to critical situations e.g. the potential loss of hydropower in the Kafue flats. Furthermore, restoration activities within baseline projects will likely focus on biodiversity rather than engineering the ecosystem to ensure that long-term adaptation benefits are maximised. Environmental Management Plans (EMPs) will also not include EbA restoration activities because of a lack of knowledge, and these benefits will not be realised by rural communities. An improvement in public awareness of the need for and benefits of EbA is necessary in order to persuade policy- and decision-makers to prioritise interventions. In the absence of the proposed LDCF-financed project, budget allocations and staff commitment to EbA will remain insufficient for implementing project activities. An EbA-focused restoration programme focusing on two vulnerable and degraded ecosystems is a relatively low cost, no-regrets option for adaptation in Zambia. Without the intervention of the proposed LDCF-financed project, restoration of degraded ecosystems to generate adaptation benefits for communities will not be a strategic objective in Zambia.

In a business-as-usual scenario, the institutional and technical capacity of local and national authorities to plan and implement wetland and forest EbA interventions is likely to remain constrained. This will increase the vulnerability of local communities to the current and expected effects of climate change outlined in Section A.1.1.

With LDCF intervention (adaptation alternative):

Additional funding of US\$ 1,767,143 is required to develop a strategic and policy environment to build the resilience of rural communities to the impacts of climate change through EbA. This will require the review of existing strategies and policies that are relevant to EbA, promotion of cross-sectoral dialogue, and building technical capacity and scientific knowledge of EbA in Zambia. With LDCF funding, the proposed LDCF-financed project will strengthen the institutional and technical capacity of national and local authorities to plan and implement EbA interventions in wetland and forest ecosystems. For example, the LDCF-financed project will enhance the activities of the WRDP through the integration of climate change considerations into local development planning. Training will be provided to national and local authorities under Output 1.1 on ecosystems and the benefits of implementing EbA. Under Output 1.2, the climate impacts to ecosystems will be assessed under the latest climate scenarios.

Studies will be undertaken and the results used to update existing maps and reports on the state of wetlands to identify areas that are vulnerable to climate change and guide decision-making on the management of these areas. Improved decision-making under the WRDP will increase economic gains – water allocations and agricultural outputs – as well as reduce socio-economic losses associated with extreme climate events. In addition, the mapping of vulnerable areas under the LDCF project will inform the location and scale of small-scale water resources infrastructure implemented by the WRDP. Such infrastructure has an important role in safeguarding local livelihoods and sustaining communities through multiple uses, including: i) enhanced domestic water security; ii) increased agricultural yields of small-hold farmers; iii) fish farming opportunities; iv) water for livestock; and v) several water dependent activities such as tree growing, food processing and mini hydropower systems. The location of small dams is also important for flood attenuation. The activities under the proposed LDCF-financed project will consequently climate-proof and improve the planning and allocation of water resources under the WRDP. The proposed LDCF-financed project will, therefore, ensure better water resource management in the future, including promoting climate-resilient water resource infrastructure investments – such as water storage facilities for local communities – through the activities of the WRDP. The interventions under Component 1 will provide a platform for catalysing large scale initiatives across Zambia in the future, by establishing institutional frameworks and building national technical capacity. To achieve this the project will identify: i) existing gaps in information and knowledge; ii) shortfalls in planning; and iii) barriers to implementation within government departments and research institutions.

The current planning guidelines and policies will be reviewed and the appropriate revisions suggested to support an integrated approach to environmental management. This will be informed by mapping the existing barriers to and opportunities for incorporating EbA into planning guidelines and policies. The review will be used to identify entry points for promoting the use of EbA measures and integrating these into the current strategies. This will be undertaken in consultation with stakeholders from all relevant sectors – including agriculture, energy, forestry, water, transport, health and tourism. In addition, local and national authorities will be trained on the effects of climate change and current climate change predictions, and how including wetland and forest EbA into environmental management planning can increase resilience to these effects. This training will be complemented by the development of policy briefs and decision-making tools on integrating wetland and forest EbA into development planning. To improve institutional coordination, a national coordination mechanism for integrated environmental management and EbA will be established to facilitate cross-sectoral and inter-ministerial dialogue between stakeholders on wetland and forest EbA. This coordination mechanism should be established during the project's implementation. The technical skills developed through the above actions will be used to implement the EbA measures through Component 2, and generate awareness through Component 3.

Component 2: Implementation of wetland and forest EbA interventions in Zambia

Without LDCF intervention (baseline):

Restoration activities in Zambia are currently undertaken with a narrow focus on replanting and are implemented by a wide range of different stakeholders, including NGOs, government and private contractors. Therefore, restoration is not tailored to maximise the adaptation benefits for rural communities, and often does not take climate change into account. Such restoration work has tended to focus on conservation of biodiversity or water flow, rather than maximising cross-sectoral climate change adaptation benefits for communities. As a result, the appropriate species to use for establishing biodiversity-rich ecosystems that are resilient to climate change and will provide additional adaptation benefits, have not been systematically researched or documented.

If EbA is not implemented, local communities living around the Bangweulu Wetlands will continue to be negatively affected by climate hazards such as increased temperatures and increased frequency of floods and droughts. This will exacerbate social and environmental impacts in this area and hinder the socio-economic development of these communities. Adapting to climate change has been recognised as a priority in Zambia through numerous strategies and policies, including the National Policy on Climate Change of 2016, National Forestry Policy of 2014, 7NDP, NAPA and the draft National Climate Change Response Strategy. However, funding for adaptation interventions and raising awareness of climate change is limited, with a focus on adaptation activities based on the establishment of artificial infrastructure. In addition, there are few demonstrations of successful adaptation projects with tangible

benefits in this region, and throughout Zambia. Similarly, examples of successfully established alternative livelihood options for local communities that are climate-resilient and based on EbA are scarce. This is particularly true of adaptation interventions focused on ecosystems, including EbA.

In addition to the threats posed by climate change, wetlands and forests are also under threat from a variety of human activities that cause degradation and deforestation, such as the collection of fuel wood, agriculture and aquaculture. The predicted climate change effects – described in Section A.1.1 – will place further pressure on wetlands and forests.

In a business-as-usual scenario, cost-effective adaptation interventions that focus on ecosystems and consider climate change are unlikely to be implemented. In the absence of the proposed LDCF-financed project, restoration interventions in Zambia will continue to be implemented without: i) taking into account the effects of climate change; ii) focusing on the adaptation needs of rural communities; and iii) taking advantage of the full range of cross-sectoral adaptation benefits that restored natural infrastructure can provide. Consequently, communities vulnerable to climate change will not receive ecosystem-derived benefits such as increased food security, protected material belongings and lives, and secured water supply.

With LDCF intervention (adaptation alternative):

Additional funding of US\$ 2,945,238 is required to undertake EbA interventions in order to promote the resilience of rural communities to climate change. This will be achieved by establishing ecosystems that are both resilient to climate change and will provide additional adaptation benefits, in degraded forests and wetlands within the Bangweulu Wetlands and surrounding area.

Within this component, the technical capacity of stakeholders in a wide-range of sectors to plan and ultimately implement EbA programmes will be enhanced. Stakeholders will include *inter alia*: line ministries and departments, Zambia Environmental Management Agency (ZEMA), academic institutions, non-governmental organisations (NGOs), Community-based Organisations (CBOs), local authorities and other local user groups as appropriate. The building of technical capacity will comprise: i) assessing the socio-economic costs and benefits of restoring the two different ecosystems; ii) identifying trade-offs and synergies between different sectors when undertaking restoration; iii) documenting appropriate EbA restoration techniques for maximising adaptation benefits in the two different ecosystems; iv) training rural communities in techniques for developing ecosystems that are both resilient to climate change and will provide additional adaptation benefits; and v) assisting stakeholders in accessing EbA international funding.

LDCF resources will be used to implement a range of EbA interventions in wetland and forest ecosystems. Best-practice guidelines on wetland and forest EbA will be collated, including knowledge derived from other successful wetland and forest restoration projects in Zambia, the rest of Africa and globally. In particular, the LDCF-financed project will build on the ZCWCP, which will prevent further degradation of wetlands. The ZCWCP undertakes ecological monitoring linked to environmental flows to understand the natural flood cycles of rivers and the impacts thereof on flagship species, such as the Wattled Crane, Grey Crowned Crane and the Kafue Lechwe. Changes in the flooding regime have affected biodiversity, farmers and fishermen who depend on hydrological fluctuations for their livelihoods. In addition, the baseline project assesses the ongoing and emerging threats to these species' habitats. The results of these assessments are used to inform management decisions and conservation plans that will directly effect the long-term sustainability of the wetland. Under Outcome 2.1 of the proposed LDCF-financed project, in-depth 'on-the-ground' analyses of the baseline projects' current interventions will be undertaken in order to develop appropriate EbA approaches for each of the priority ecosystems. For example, the ZCWCP has identified the spread of invasive alien species – particularly *Mimosa Pigra* – as a threat to the Bangweulu Wetlands and surrounding areas. The proposed LDCF-financed project will, therefore, tailor restoration techniques for degraded wetlands and forests that will include the removal of such invasive species – where appropriate – and maximise adaptation benefits for communities. The integration of climate change considerations into the regional conservation plans – developed by the baseline projects – will result in an adaptive management approach and the successful conservation of the

wetland and forest ecosystems under changing climate conditions. The exact number and location of sites for intervention and the specific intervention activities will be identified through stakeholder interaction during the PPG phase. This will include community engagement to quantify: i) resource use; and ii) adaptive capacity. Workshops and outreach activities in target communities will encourage a participatory approach, promote support from local communities and build adaptive capacity. Technical training will be provided to local communities on establishing, managing and monitoring the interventions. In addition, community associations will be established – making use of existing community structures wherever possible – to oversee the work and ensure the long-term success of EbA activities beyond the project lifespan. Furthermore, the cost-effectiveness of different methodologies will be assessed through community monitoring and scientific analysis, providing data for the construction of scientifically rigorous restoration protocols. All interventions will be undertaken using a “learning-by-doing” approach and the information generated from this outcome will be important for: i) building the technical capacity of stakeholders and informing the policy, strategy and budget revisions under Outcome 1; and ii) developing restoration protocols across a wide range of ecosystems in Zambia that focus on maximising the adaptation benefits emerging from intact natural infrastructure.

The MECP will protect and restore ecosystem services to provide a sustainable base for communities who rely upon these ecosystems to meet their socio-economic needs. Although people are highly dependent upon such services, their actions greatly impact on the existing and functioning thereof. The MECP will develop land use strategies and put in place restoration measures to ensure ecological networks and ecosystem integrity. The LDCF-financed project will facilitate the development and implementation of sustainable and equitable land use practices to sustain ecosystem services in the face of climate change. Under Outcome 2.1 of the project, restoration and natural regeneration activities – particularly enrichment planting – will be informed by: i) the predicted effects of climate change; ii) the capacity of species to supply ecosystem services under the predicted effects of climate change, such as species that are drought resistant or flood resistant; and iii) community needs and preferences. Examples include: i) species that produce non-wood forest products such as fruit, fibre, and fodder²⁴; ii) species with high market-value wood; iii) fast-growing species for firewood; and iv) species that promote rather than hinder growth of other species – including nitrogen-fixers and species that produce large amounts of compostable matter. Species with multiple benefits will be prioritised in order to establish an ecosystem that is both resilient to climate change and provides additional adaptation benefits. In addition under Outcome 2.2 of the proposed LDCF-financed project, climate-resilient livelihoods will be identified and implemented to reduce dependence on natural resources. For example, community-managed woodlots will be established – away from patches of natural forest – to reduce deforestation. Local communities will also be provided with start-up kits and equipment to implement climate-smart agriculture and collect, process and conserve NTFPs. Once restored through the EbA interventions, wetland and forest ecosystems will enhance the climate resilience and improve the food security of local communities. Many adaptation benefits will be visible within the project implementation period. However, the limited duration of the project means that the medium- and long-term benefits will not be realised during the project implementation period.

The EbA measures implemented through this component will be complemented by the development of alternative livelihood strategies for local communities to supplement their incomes and further establish the benefits of ecosystem restoration. The LDCF-financed project will build on the Bangweulu Wetland’s Sustainable Livelihoods Programme which empowers communities to improve their living standards. The Bangweulu Wetlands Project has implemented several livelihood projects – including the establishment of a guesthouse, as well as the introduction of beekeeping, chicken and fish farming – to generate income for communities and advance the sustainable use of natural resources. Training on conservation farming practices has also been provided to small-scale farmers. Under Outcome 2.2, the LDCF-financed project will develop a portfolio of alternative livelihood strategies for communities to choose from, building on the experiences and lessons learned from this project, based on both community needs and the goods and services produced and delivered by restored ecosystems. Training will also be provided on sustainable land management techniques and climate-smart agricultural techniques – such as agroforestry and conservation agriculture – as well as efficient irrigation techniques, which will be implemented in targeted communities. These alternative livelihood options will be socially acceptable, technically viable and increase the

²⁴ The Food and Agriculture Organization of the United Nations defines non-wood forest products as being ‘goods of biological origin other than wood derived from forests, other wooded land and trees outside forests.’

resilience of local communities to climate change. To do this, the proposed project will review the range of goods available for domestic and commercial use in diversified agricultural areas. In addition, goods and services for domestic and commercial use in wetland and forest ecosystems will be reviewed. This will include a cost-benefit analysis. For goods and services that emerge as cost-effective, linkages will be made between the market and the local communities. Benefits generated by the project will support alternative livelihoods including *inter alia*: i) the sale of sustainably harvested products from restored ecosystems such as wild fruits, medicinal species, and baskets made from wetland reed species; ii) the sustainable harvesting of high-value timber from woodland areas; and iii) small-scale agriculture which will benefit from irrigation projects and increased water flow from restored watersheds.

Outcomes 2.1 and 2.2 of the proposed LDCF-financed project will also build upon the outcomes of the LSMREP. This baseline project will provide electricity to rural areas within the Lunga District, through the promotion of renewable energy resources. Within the Luapula Province, access to the electricity grid is not yet feasible. Solar radiation technology will therefore be used to facilitate access to electricity in rural areas and provide 300kWp to the Lunga District. Under Outcome 2.1, the proposed LDCF-financed project will demonstrate appropriate renewable energy systems and hold workshops for the local communities – particularly women – on the opportunities to transform local products and add value to the local economy, through the use of renewable energy technologies. In addition, the project will support the development and implementation of alternative livelihood development plans, as previously discussed. Furthermore, the project will identify entry points for access to markets and provide support to community associations for marketing of products generated through the adoption of climate-resilient livelihood options.

UNEP's EbA Decision Framework Tool will be used to guide the selection of EbA project sites using scientific, transparent and participatory processes. Similarly, the site-specific interventions will be guided by scientifically rigorous protocols and community preferences, and will emphasise the selection of sites that complement the ongoing activities of the baseline projects.

Component 3: Public awareness and knowledge of increasing climate resilience through wetland and forest EbA interventions.

Without LDCF intervention (baseline):

At present, national and local authorities, as well as local communities, have limited knowledge of the ecological, social and economic benefits of using EbA interventions to address the effects of climate change. In addition, there are no communication or outreach strategies providing such information to stakeholders. Insufficient information and public awareness are major challenges affecting the implementation and integration of EbA into planning processes. As a result, appropriate EbA measures are not integrated into new and existing national policies and strategies, and the benefits are not appreciated by government and local stakeholders.

In the business-as-usual scenario, knowledge and awareness of EbA and the associated benefits in building climate resilience of communities and ecosystems are likely to remain limited. Furthermore, the capacity of national and local authorities to facilitate the implementation of activities that increase the climate resilience of ecosystems and communities will remain low. This will hinder the uptake of an EbA approach at a national level and result in increased vulnerability as a result of the current and expected climate change impacts as outlined in section A1.1.

With LDCF intervention (adaptation alternative):

LDCF resources will be used to: i) conduct workshops; ii) develop a long-term research programme to quantify the benefits and opportunities offered by EbA; and iii) develop a communication strategy to raise awareness on the benefits and opportunities offered by EbA. This approach will be underpinned by: i) best practice information collated in Component 1; and ii) lessons learned during project implementation in Component 2. Technical capacity for planning and implementing EbA will be strengthened. This will be achieved through information-sharing

sessions and participatory workshops with community members. These sessions and workshops will be organised and guided by surveys on the perceived benefits of EbA. Support for the implementation of wetland and forest EbA interventions will be generated through a public awareness campaign on the benefits of EbA. This will include: i) the use of media including print, radio and mobile phones to disseminate information to the public; and ii) EbA input into school curricula including field trips to project sites.

In addition, a long-term research programme will be developed to quantify the benefits of EbA to local communities and to increase the knowledge base on EbA. Research will be undertaken by academics within institutions in Zambia to identify techniques for maximising adaptation benefits from ecosystem restoration. The research undertaken in this component, along with local indigenous knowledge and lessons learned from baseline projects' activities – including the MECP, ZCWCP and the Bangweulu Wetlands Project – will inform the development of EbA policies and strategies and the development of appropriate EbA interventions in Component 2. The objectives of the long-term research programme will be supported by the establishment of a monitoring system which will assess the effectiveness of the range of EbA measures implemented through Component 2. Lessons learned will feed back to national and local government – all ministries/departments – to improve the implementation and sustainability of future EbA measures, and to facilitate upscaling of an EbA approach. An upscaling strategy will be developed that includes linkages to local and global climate finance initiatives as well as government budgets. Training workshops will also be held with government authorities to disseminate lessons learned and best practice knowledge. The training workshops will contribute to the expansion of wetland and forest EbA interventions beyond project sites.

The proposed LDCF-financed project will build on the ongoing activities of the baseline projects. The additional cost for knowledge and awareness raising activities is US\$ 1,178,095.

A.1.5 Adaptation benefits (LDCF/SCCF)

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 wetland and forest ecosystems. This will be achieved by: i) collating best practice information; ii) training authorities at national and subnational level, as well as local communities; iii) implementing and demonstrating EbA interventions; iv) conducting research; v) increasing public awareness; and vi) revising policies. The activities proposed represent a set of mutually reinforcing measures that will address the root causes of vulnerability in Zambia. Moreover, the project will simultaneously rehabilitate wetland and forest ecosystem services to increase the adaptive capacity of local communities.

At a national level, policies, strategies and legislation pertaining to natural resource management, ecosystems and adaptation to climate change will be reviewed to identify entry points for EbA. Firstly, revisions to these documents will be recommended, thereby promoting an integrated approach to climate change adaptation. Secondly, local authorities will be trained on designing and implementing EbA interventions. Thirdly, subnational EMPs will be developed with stakeholders. These EMPs will further support an integrated environmental approach. Fourthly, a long-term research strategy will be established to measure the effects of EbA interventions in wetland and forest ecosystems. Finally, knowledge on EbA – including findings of research catalysed by the proposed project – will be managed and disseminated to the public to promote upscaling of EbA.

At the project sites, EbA will provide numerous tangible benefits²⁵. 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. In addition, an upscaling strategy will be developed that will increase the geographic scale and longevity of the benefits of climate change adaptation generated by the proposed LDCF-financed project. Consequently, EbA interventions to protect critical habitats, restore degraded wetland and forest ecosystems and promote climate-resilient livelihoods in the surrounding areas will be promoted and upscaled

²⁵ The proposed LDCF-financed project will promote cost-effective and climate-smart agriculture in areas surrounding wetland and forest ecosystems. In particular, the project will stimulate job creation and livelihood diversification in the surrounding areas and increase the resilience of rural livelihoods.

throughout Zambia. The upscaling of EbA will reduce the vulnerability of the local communities living around wetland and forest ecosystems in Zambia to the effects of climate change through improved ecosystem services and the enhanced capacity of such ecosystems to buffer extreme weather events.

The specific adaptation benefits that will be generated by the interventions of the proposed LDCF-financed project will include: i) increasing the adaptive capacity of communities living around wetland and forest ecosystems; ii) increasing resilience of ecosystems to buffer against climate-induced extreme events; iii) improving and maintaining water quality through restored wetland ecosystems; iv) improving water supply by promoting rainwater harvesting; v) reducing unsustainable rates of use of natural resources; vi) providing NTFPs and alternative livelihoods to communities living around wetlands and forests; and vii) improving food security through climate-smart agricultural and sustainable land management techniques.

By supporting local communities to implement EbA interventions and climate-smart agriculture and agro-forestry techniques, the proposed LDCF-financed project will promote cost-effective, sustainable agriculture in the Bangweulu Wetlands. In particular, the project will promote: i) job creation and livelihood diversification in the area; and ii) sustainable and equitable use of natural resources. The project will, therefore, reduce the vulnerability of local communities living in the Bangweulu Wetlands and surrounding areas.

Initially, the adaptation benefits of EbA to restore degraded forests and wetlands, protect critical habitats, promote sustainable and equitable use of natural resources, and promote climate-resilient livelihoods in the Bangweulu wetland and surrounding area will accrue at the local level. However, knowledge generated and consolidated under Component 3 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

Research is increasingly demonstrating²⁶ that EbA is an innovative and cost-effective means of adapting to climate change. This is because EbA reduces vulnerability to climate change by increasing the adaptive capacity of local communities while simultaneously providing a range of co-benefits such as biodiversity conservation and alternative livelihood opportunities to reduce poverty. In this case, local communities in the Bangweulu Wetland ecosystem are vulnerable to the effects of: i) increasing maximum temperatures; ii) shifting rainfall patterns; and iii) increased frequency of extreme events, including floods and droughts. The EbA interventions will reduce the frequency and severity of floods caused by erratic rainfall through improved ecosystem services and enhanced capacity of such ecosystems to buffer extreme weather events. Ultimately, this will increase the adaptive capacity of local communities located within the project intervention area.

To maximise the 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 with the baseline and other aligned projects' objectives. This will include community engagement during all phases of the proposed LDCF-financed project to create community ownership of the interventions to promote sustainability. To further enhance sustainability and the replication of results, an upscaling strategy will be developed and institutionalised under Outcome 1. Moreover, the lessons learned from this 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 be further enhanced by:

- strengthening **the institutional and technical capacity** of all stakeholders to plan and implement EbA by establishing a **national coordination mechanism** and designing policy briefs for integrated environmental management and the integration of EbA into existing policies and legislation,;

²⁶ Jones, H.P., Hole, D.G., Zavaleta, E.S. 2012. Nature Climate Change, 2: 504-509.

- **demonstrating the benefits of EbA** to communities living around wetlands and forests through implementing available best practices on EbA and adaptive management, including alternative livelihoods and climate-smart agriculture techniques;
- provide **training to local communities** on the adaptation technologies implemented by the project including training on the maintenance of the species and/or equipment used;
- adopting a **participatory approach** to ensure local community buy-in, including holding workshops, hosting community open days and study tours for surrounding communities to share knowledge on climate-resilient livelihoods and climate-smart agricultural techniques, as well as implementing a ‘learning-by-doing’ awareness campaign;
- developing a **long-term research programme** on the ecological, social and economic benefits of wetland and forest EbA interventions that will be implemented within Component 2;
- developing **knowledge products**, including mapping wetland and forest ecosystems and disseminating knowledge and best practices on EbA to policy- and decision-makers, as well as local communities;
- designing and implementing **public awareness programmes on EbA** and the benefits of this approach within wetland and forest ecosystems which will have a country-wide impact by integrating EbA into environmental management planning; and
- **building on previous initiatives** to promote continuity and upscaling of successful interventions.

On-the-ground interventions under Component 2 will contribute to addressing the immediate adaptation priorities of Zambia, both short and long term adaptation needs. Evidence-based knowledge on these interventions from the proposed LDCF-financed project and previous LDCF projects will be made available for integrated adaptation planning. Furthermore, the project will promote this integrated adaptation planning at regional and local levels in support of Zambia’s NAP process.

The design of the proposed project has included considerations for sustainability and upscaling beyond the project implementation period. The potential for the project’s activities to be upscaled is supported by multiple design considerations, including *inter alia*:

- By **capacitating relevant government departments** within the GoZ to plan and implement EbA, as well as integrate climate change into development planning – and management plans in particular – the scaling up of suitable adaptation interventions will be supported.
- By **building on the components of national baseline projects** – namely the WRDP and the Lunga Solar Mini-Grid Rural Electrification Project which falls under the Rural Electrification Master Plan – benefits will likely accrue to other districts within Zambia in which these projects are being implemented. In addition, lessons learned through the LDCF-financed project will be shared at national meetings for these baseline projects.
- The **lessons learned** from this particular project will be documented and used to inform the funding of future EbA and other adaptation interventions, through the development of a knowledge management plan and communication strategy under Component 3.
- Lessons learned from this project will be shared to **support upscaling** of climate change adaptation interventions among other LDCs.

2. *Stakeholders*. Will project design include the participation of relevant stakeholders from [civil society](#) and [indigenous people](#)? (yes /no)

The proposed LDCF-financed project will be designed and implemented through a participatory approach that includes ongoing stakeholder consultation and validation of proposed activities throughout the project implementation period. 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 the table below.

In addition, the project will ensure that representatives of aligned initiatives and projects are regularly consulted to enhance effective and informed collaboration during the PPG and implementation phases. A comprehensive list of

these aligned initiatives and projects 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.

Stakeholder type	Stakeholder list	Possible contributions and roles in the programme
Government ministries (at central and provincial levels)	Ministry of Lands and Natural Resources Ministry of Agriculture Ministry of Finance Ministry of Mines and Minerals Development Ministry of Energy and Water Development Ministry of Tourism and Arts Ministry of Water Development, Sanitation and Environmental Protection	Delivery of technical components of programmes according to sectoral expertise; provision of technical advice; realisation of scientific studies; coordination with local authorities and mobilisation of human and financial resources.
Regional and local administrations	Regional administrations District administrations Municipal authorities	Beneficiaries of capacity-building initiatives; local coordination of activities; and issuance of relevant authorisations and permits.
Community-level stakeholders	Church leaders Village leaders Natural resource user groups Women's groups CBOs	Community mobilisation; delivery of programme components; and beneficiaries of capacity-building.
NGOs	To be identified during the PPG, depending on the location of project intervention sites. Suggestions include WWF, USAID and IUCN	Beneficiaries of training; trainers and social mobilisation; delivery of alternative livelihoods training and assets; monitoring of ecological conditions; and participation in environmental rehabilitation initiatives.

3. *Gender Considerations.* Are [gender considerations](#) taken into account? (yes /no).

According to the Poverty Reduction Strategy Paper (2002-2004), ~60% of female-headed households are classified as extremely poor, as opposed to 51% of male-headed households. Climate change can affect men and women in different ways – adaptation efforts tend to be most effective when the gender perspectives are reflected in the climate change risk management solutions²⁷. The Government of Zambia (GoZ) is focussed on developing female leaders and promoting gender equity. In alignment with Zambia's Gender Policy and the SNDP, gender considerations will be mainstreamed into the activities of the proposed LDCF-financed project to ensure that women are included in the selection of activities to increase their resilience and capacity to adapt to climate change. For example, women's users groups and women-headed households will be targeted: i) in the EMPs that are developed under Component 1; and ii) to implement EbA activities in wetland and forest areas under Component 2 (see section A.1.3). To support the monitoring of progress towards gender mainstreaming, gender-disaggregated targets and indicators will be included in the project Results Framework, where appropriate. Under Component 1, gender sensitivity will be incorporated into training topics so that female participants are empowered to participate in the training and implementation of appropriate EbA activities. Trainers will be required to have the skills and experience necessary to plan and facilitate gender-sensitive training.

4 *Risks.*

#	Identified risk	Risk rating	Counter measure	Risk category	Probability & Impact (1-5)
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²⁷ GEF programming strategy on adaptation to climate change for the Least Developed Countries Fund and the Special Climate Change Fund (2014)

1	Resistance of stakeholders to adopt EbA interventions during and/or after project may negatively affect the project objectives.	Medium	<ul style="list-style-type: none"> Stakeholders will actively participate in the design, development and the implementation process of the project. A public awareness campaign on climate change effects and the benefits of EbA will be developed and implemented. Training of local stakeholders will be undertaken to increase their understanding and capacity to implement EbA interventions. Demonstration plots in local villages will be established to demonstrate proof-of-concept at small scale. 	Social	P = 3, I = 4
2	High turnover of staff members in implementing and executing agencies	Medium	<ul style="list-style-type: none"> Relationships with the appropriate individuals in the respective Government bodies will be established during the initial stages of the project design to promote continuity. Manuals will be developed and disseminated on how to put the theory on EbA into practice. 	Institutional	P = 4, I = 4
3	Unwillingness and disagreement between stakeholders to coordinate and respect their different roles and responsibilities in the project.	High	<ul style="list-style-type: none"> From the onset of the project, cross-sectoral coordination between the relevant government departments and other stakeholders will be promoted. A mechanism will be developed to establish a national committee, consisting of relevant ministries, to promote cross-sectoral coordination on the planning, development and implementation of EbA. 	Institutional	P = 3, I = 4
4	Capacity constraints of local and national institutions to undertake the required scientific research and project interventions.	Medium	<ul style="list-style-type: none"> Collaboration and exchange between local and international research institutions will be initiated and maintained. Training will be provided on the implementation of EbA interventions. Research protocols will be developed specifically for the project. 	Institutional	P = 3, I = 2
5	Variation and limitation in technical capacity will reduce the efficiency of the project implementation.	Medium	<ul style="list-style-type: none"> Local communities and local authorities around the pilot sites will be trained in the design, planning and implementation of EbA interventions. International experts will be engaged to assist local authorities in implementing EbA interventions. 	Technical	P = 3, I = 3
6	Implemented interventions are not cost effective	Low	<ul style="list-style-type: none"> Cost-effectiveness is a core principle in the implementation of climate-resilient/multi-benefit adaptation measures. EbA is per definition cost-effective using ecosystems as opposed to using external hard infrastructure. A cost-benefit analysis will be undertaken during the project's implementation. 	Economic	P = 1, I = 3
7	Other economic developments, such	High	<ul style="list-style-type: none"> The project will include the mapping of the wetland and forest ecosystems and 	Economic	P = 3, I = 5

	as hydropower development, may compete with the implementation of the projects activities		propose a mandate to prevent these areas from any economic development that jeopardizes the functioning of these ecosystems.		
8	Funding may not be available for subsequent phases	Medium	<ul style="list-style-type: none"> • A sustainable financing strategy will be developed to implement the upscaling of EbA. This will include training to government officers on accessing climate change funding. 	Economic	P = 3, I = 3
9	Unfavourable climate conditions including current climate and seasonal variability and/or extreme weather events may affect implementation.	High	<ul style="list-style-type: none"> • Ensure that current climatic variability is taken into account in project design. • Appropriate climate-resilient plant species will be selected to restore wetlands and forests in selected degraded ecosystems. 	Environmental	P = 2, I = 4
10	Despite the awareness on EbA, the root causes of the deforestation and land degradation, such as limited availability of alternative energy and increased population growth are not addressed	Medium	<ul style="list-style-type: none"> • Workshops will be held to identify and train community members, particularly women, willing to use: i) improved cooking stoves; ii) biogas digesters; and iii) solar power as alternative sources of energy. • The awareness campaign on EbA will seek collaboration with NGO's that address family planning to demonstrate the strong link between having many children and environmental degradation. 	Social	P = 3, I = 3

5. Coordination.

There are several GEF and non-GEF projects currently being implemented in Zambia that focus on climate change adaptation. The proposed project will build on and coordinate with several ongoing projects and initiatives to: i) benefit from the interventions of the projects listed below by collating the lessons learned to increase the knowledge available on adaptation practices; and ii) disseminate the information on successes, failures and lessons learned from previous adaptation interventions for the implementation of this project.

The UNDP/GEF project **Adaptation to the effects of drought and climate change in Agro-ecological Zone 1 and 2 in Zambia** is developing the adaptive capacity of subsistence farmers and rural communities to withstand climate change in Agro-ecological Regions I and II in Zambia, in accordance with the NAPA process. This project is of particular relevance to the proposed LDCF-financed project because of the synergies between the two projects in terms of developing climate-resilient agricultural and water management practices. Links between the two project management teams will be strengthened to maximise these synergies and learning opportunities will be maximised at local levels.

National Capacity Self-Assessment (NCSA) for Global Environmental Management is a UNDP/GEF project. The NCSA will involve a thorough assessment and analysis of Zambia's capacity constraints and needs in relation to its commitments under the Rio Conventions and other related international instruments. The proposed LDCF-financed project will benefit from this project by building on the strategies developed for the efficient use of scarce resources.

The World Bank's **Strengthening Climate Resilience Project (PPCR Phase II)** is aimed at strengthening Zambia's institutional framework for climate resilience and improving the adaptive capacity of vulnerable communities in the Barotse sub-basin. The PPCR Phase II is of particular relevance to the proposed LDCF-finance project because of

the synergies between the two projects in terms of developing innovative techniques for reducing climate change vulnerability of communities using appropriate ecosystem management practices. Links between the two project management teams will be strengthened to maximise these synergies and learning opportunities will be maximised at local levels.

Strengthening Climate Resilience in the Kafue Basin is implemented by the Ministry of Finance and National Planning and funded by the African Development Bank. The project will foster sustained economic growth, reduce poverty and enhance food security through strengthening the adaptive capacity of 800,000 farmers to better respond to climate variability and long-term consequences of climate change in the Kafue sub-basin. The proposed LDCF-financed project will consult with the project management team to collate and share information on community-based climate change adaptation measures.

The **Extension of Kasanka Management System to Lavushi Manda National Park project (World Bank/GEF)** sought to expand the Kasanka Trust's management to include the restoration of the Lavushi Manda National Park in order to uplift the ecological value of the greater Bangweulu ecosystem. Together with the adjacent Bangweulu Wetlands and neighbouring Kasanka National Park, the sound and effective management of this region presents a unique opportunity to conserve the prime biodiversity of the Central Zambian Miombo Woodland ecoregion in Zambia. The LDCF-financed project will therefore build on the systems and infrastructure put in place for sustainable conservation management and community/stakeholder engagement in the region.

The **Climate Smart Agriculture: capturing the synergies between mitigation, adaptation and food security** project is implemented by FAO's Economics and Policy Innovations for Climate-Smart Agriculture Programme and supported by the European Union, Swedish International Development Agency and the Mitigation of Climate Change in Agriculture Programme. The project is currently being implemented in Malawi, Vietnam and Zambia and is aimed at strengthening the capacity of the countries to address constraints and promote climate-smart agriculture that will deliver both food security and improved livelihoods. By building resilience and the capacity of agricultural and food systems to adapt to climate change, the project will also be avoiding greenhouse gas emissions. The proposed LDCF-financed project will build on the awareness raised for climate-smart agriculture. In addition, the proposed LDCF-financed project will consult this project to collate information on the climate-smart agriculture techniques that are being implemented successfully in Zambia.

Strengthening Management Effectiveness and Generating Multiple Environmental Benefits within and around Protected Areas in Zambia is a UNDP project that will be implemented with the Ministry of Lands, Natural Resources and Environmental Protection. This project is aimed at strengthening the capacity for environmental protection and natural resources management for communities around National Parks through increased knowledge in resource management and promotion of sustainable alternative livelihoods using the GEF Small Grants model. The interventions will contribute to the effective natural resource management in National Parks that are experiencing high rates of degradation and deforestation. In addition, these interventions will contribute to poverty reduction through the introduction of alternative sustainable livelihoods. The UNDP project is of particular relevance to the proposed LDCF-financed project because of the synergies between the two projects in terms of developing innovative techniques for reducing climate change vulnerability of communities using appropriate ecosystem management and the development of sustainable livelihoods. The proposed LDCF-financed project will therefore consult with the project management team to collate information on the natural resource management challenges and introduction of sustainable livelihoods.

The World Bank's **Promotion of Renewable Energy to Increase Access to Electricity project** is aimed at increasing energy access by removing the barriers to renewable energy technologies in Zambia to help mitigate greenhouse gas emissions. The development objective is to develop a policy, regulatory, and institutional framework to increase access to electricity services. Renewable energy can not only provide social services such as community centres, street lighting, education, health, drinking water, and telecommunications; but also generate incomes in rural areas such as water pumping for irrigation, cottage industry, agro-industry processing, crop- and meat- drying and freezing. This project will reduce the dependence on natural resources and the degradation of ecosystems. The

proposed LDCF-financed project will therefore consult with the project management team to collate information on renewable energy technologies.

The **AfDB/GEF Lake Tanganyika project**, within Northern Province, is a shared Water Catchment (falling under management of the Water Resources Management Authority), which is GEF-supported with a budget of US\$7,334,246 due to be implemented from 2017- 2022. The proposed baseline project is envisaged to reduce degradation of the lake environment emanating from unsustainable human activities. Specifically, it will focus on improvements in watershed management through SLM and SFM, and support alternative livelihood opportunities for local communities based on enhanced NRM. The ultimate objective is to improve the capacity of the lake basin to provide ecosystem services, to restore its ecological integrity, and thus better the livelihoods of populations that depend on its resources. Sustainable agro- and forest ecosystem development to diversify livelihoods is a key strategy in the project. This project draws US\$22.4Million funding from the AfDB in a baseline project that adopts an integrated approach which aims to protect the ecological integrity of the Lake Tanganyika Zambia Basin and improve the quality of lives of basin populations through the provision of essential economic infrastructure and support to sustainable livelihoods. The GEF project aims to get eleven (11) Joint Forest Management (JFM) areas established/gazetted in the two target districts in the Northern Region, adjacent to Lake Tanganika as well as activities on land rehabilitation, agro-forestry and livelihoods development. This project may be helpful in providing information on methodologies for ecosystem management and lessons learned especially given as it will be ahead in the implementation phase by about 2 years.

6. *Consistency with National Priorities.* Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes /no).

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

National Strategies	Alignment
Millennium Development Goals (MDGs)	The proposed LDCF-financed project will contribute towards eradicating extreme poverty and hunger (MDG 1) and promoting gender equality and empowering women (MDG 3). However, the focus of the project will be on ensuring environmental sustainability (MDG 7).
National Adaptation Programme of Action (NAPA)	The proposed LDCF-financed project is aligned with the following priorities: promotion of alternative sources of livelihoods to reduce vulnerability to climate change/variability to communities living around GMAs (Priority 2); management of critical habitats (Priority 4); adaptation of land use practices (crops, fish, and livestock) in light of climate change (Priority 6); and eradication of invasive alien species (Priority 8).
Sixth National Development Plan (SNDP)	The proposed LDCF-financed project will contribute towards economic diversification and rural investments to stimulate economic growth and job creation, as well as reduce rural poverty. Furthermore, the project will address key priority growth sectors identified in the SNDP, including <i>inter alia</i> agriculture, livestock and fisheries.
National Long-term Vision 2030 (Vision 2030)	Vision 2030 is a long-term planning tool setting out goals and targets to be achieved in various spheres of social and economic life. The proposed LDCF-financed project will contribute towards: i) economic growth and wealth creation, particularly in the agriculture and tourism sectors; ii) social investment and human development through improved food security and climate-resilient livelihoods; iii) the creation of an enabling environment for sustainable social economic development and the promotion of integrated environmental management; and iv) sustainable utilisation of natural resources.
United Nations Development Assistance Framework (UNDAF)	UNDAF supports the national and local efforts to address the challenges of economic growth highlighted in Vision 2030. The proposed LDCF-financed project is in alignment with the objectives of the UNDAF and will contribute towards poverty reduction, job creation and adequate social protection in rural

	areas.
Initial National Communication under the United Nations Framework Convention on Climate Change (INC) (August 2002)	The INC identifies economic sectors vulnerable to climate change, including: i) agriculture; ii) food and fisheries, iii) wildlife; iv) forestry; and v) water. The proposed LDCF-financed project is in alignment with the INC as it will promote: i) food security; ii) the diversification of livelihoods through mixed crops-livestock systems; iii) capture fisheries and aquaculture; iv) the protection of critical habitats for wildlife; v) alternative sources of energy; and vi) sustainable land use techniques.
Second National Communication to the United Nations Framework Convention on Climate Change (SNC) (2000-2004)	The SNC highlights Zambia's greenhouse gas inventories for the period 1994-2000 and establishes a long-term institutional framework that promotes a coordinated response to climate change. The proposed LDCF-financed project is in alignment with the mitigation efforts including conservation farming; promotion of sustainable land use techniques; and the promotion of alternative sources of livelihoods to reduce vulnerability to climate change.
National Policy on Climate Change (2016)	The Policy provides a framework for long term coordinated response to climate change. The Policy gives guidance on how the economy should grow in a sustainable manner thereby fostering a smooth implementation of the Seventh National Development Plan (7NDP)
National Climate Change Response Strategy (NCCRS) (December 2010)	The NCCRS has been developed to support and facilitate a coordinated response to climate change in Zambia. The project is in alignment with the NCCRS's objective of climate-proofing the sensitive economic sectors, including agriculture and forestry.
Poverty Reduction Strategy Paper	The proposed LDCF-financed project is in alignment with the Poverty Reduction Strategy Paper's focus on agriculture and rural development, as well as environmental protection. In particular, the project will contribute to the improvement of food production techniques for the rural poor and sustainable small-scale rural enterprises.
The Second National Biodiversity Strategy Action Plan (NBSAP 2)	The NBSAP addresses the objectives of the United Nations Convention on Biological Diversity. In particular, the proposed LDCF-financed project will support the objectives of the NBSAP to: i) ensure that natural ecosystems are conserved; ii) legal and institutional frameworks to implement strategies for conservation, sustainable use and the equitable sharing of benefits are improved; and iii) biological resources are sustainably used and managed.
National Agriculture Policy (2004-2015)	The proposed LDCF-financed project is in alignment with the vision of the National Agriculture Policy to promote the development of an efficient, competitive and sustainable agriculture sector, which assures food security and increased income. The project will contribute towards these objectives through: i) the diversification of agricultural production and utilisation; ii) promotion of sustainable and environmentally sound agricultural practices; and iii) conservation of fisheries resources.
National Wetland Policy (2010) (Draft)	The proposed LDCF-financed project is in alignment with the objectives of the (draft) Wetlands Policy, including <i>inter alia</i> : i) the promotion of integrity and natural productivity of wetland ecosystems and the maintenance of their functions and values to conserve their biodiversity; ii) the restoration of degraded wetland resources; iii) the promotion of research, inventorying and monitoring of wetland resources; and iv) the promotion of community participation and the equitable sharing of benefits.
National Policy on Environment (NPE) (2007)	The NPE provides a framework management guide for the management of Zambia's environment and natural resources to ensure that they are managed on a sustainable basis and retain their integrity to support the needs of current and future generations. The proposed LDCF-financed project is in alignment with the objectives of the NPE and its commitment to reduce poverty and achieve sustainable development for Zambia as a whole.
National Water Policy (2010)	The proposed LDCF-financed project is in alignment with the objectives of the NWP. In particular, the project contributes to: i) enhancing economic productivity and reducing poverty through the promotion of community and

	stakeholder participation in the design, implementation and management of water resources-related programs and projects; and ii) the assurance of resource efficiency and equity amongst all users.
National Forestry Policy (NFP) (1998)	The proposed LDCF-financed project is in alignment with the objectives of the NFP. In particular, the project will contribute to: i) natural resource management through the restoration of environmental quality in degraded areas; ii) ensuring the provision of natural resource products in sufficient quantities; iii) raising the level of awareness amongst Zambians in values and sustainable management of natural resources; and iv) setting aside areas and providing guidelines and supervisions for their management.

7. Knowledge Management.

The proposed LDCF-financed project will address knowledge management through Component 3. Importantly, the approach will be underpinned by the collation of best practices under Component 1 and the lessons learned during project implementation under Component 2. In addition, the project will be informed by past and current aligned initiatives. The collection and dissemination of such knowledge, best practices and lessons learned from other projects will be detailed in the communication strategy and knowledge management plan to be developed under Output 3.1.

Data, information and knowledge generated by the project will be made available through the awareness-raising campaign (under Output 3.2) in a manner that is easily accessible and understandable to stakeholders. This includes policy briefs and protocols for policy- and decision-makers, as well as community open days, workshops and study tours for the local and surrounding communities (under Outputs 1.3, 2.2.3, 2.2.5 and 3.1 respectively). Furthermore, community associations established under Output 2.2.5 will assist in the dissemination of knowledge.

Further details of the project’s approach to knowledge management will be determined during the PPG phase in consultation with the relevant stakeholders.

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

A. RECORD OF ENDORSEMENT²⁸ 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](#)).

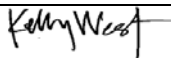
NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
G.F.Gondwe	Director/GEF Operational Focal Point, Environment and Natural Resources Management Department	MINISTRY OF LANDS AND NATURAL RESOURCES	23 DECEMBER 2014

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies²⁹ and procedures and meets the GEF criteria for project identification and preparation under GEF-6.
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²⁸ For 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.

²⁹ GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF

Agency Coordinator, Agency name	Signature	Date (M 2017M/dd/yyyy)	Project Contact Person	Telephone	Email
Kelly West, Senior Programme Manager & Global Environment Facility Coordinator Corporate Services Division UN Environment		August 11, 2017	Jessica Troni, Senior Programme Officer Adaptation Portfolio Manager Climate Change Adaptation Unit, Ecosystems Division	[254-20] 762-3794	Jessica.Troni@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.

Appendix 1: Logical framework

Outcome	Indicative Output	Indicative Activities
Component 1: Institutional and technical capacity development for EbA in Zambia		
Outcome 1: Technical and institutional capacity to integrate EbA into existing management plans for ecosystems is increased at local and national level.	<i>Output 1.1:</i> Local and national authorities trained on EbA techniques for restoring and protecting ecosystems.	<ul style="list-style-type: none"> • Develop and disseminate technical guidelines on EbA for policy and decision-makers of relevant ministries to design, develop and implement EbA. • Provide training to national and local authorities on ecosystems and the benefits of implementing EbA.
	<i>Output 1.2:</i> Climate impacts to ecosystems, particularly wetlands and forests, in Zambia are assessed and mapped under the latest climate scenarios.	<ul style="list-style-type: none"> • Undertake studies on the impacts of climate change under different scenarios on ecosystems in Zambia. • Update existing maps and reports on the state of national forests and wetlands to identify areas vulnerable to climate change and guide decision-making on the management of these ecosystems within the project area.
	<i>Output 1.3:</i> Policy revisions proposed to support an integrated approach to environmental management.	<ul style="list-style-type: none"> • Review existing national and sectoral policies and legislation related to management of natural resources and ecosystems. • Identify opportunities to harmonise existing policies and legislation on the management of natural resources and ecosystems. • Identify entry points for EbA into existing policies and legislation. • Develop policy briefs for integrated environmental management to support EbA. • Design a framework or revise existing wetland and forest management plans to integrate EbA to improve ecosystem services.
	<i>Output 1.4:</i> Tools and platforms developed for integrated environmental management.	<ul style="list-style-type: none"> • Establish a national coordination mechanism for integrated environmental management and EbA. • Identify entry points for EbA into subnational EMPs. • Identify relevant stakeholders and local communities to be involved in the formulation of subnational EMPs. • Hold participatory workshops to obtain relevant information and identify stakeholder capacity needs to develop subnational EMPs.
	<i>Output 1.5:</i> A strategy developed to sustain, replicate and upscale EbA interventions in wetlands and forests.	<ul style="list-style-type: none"> • Identify good practices for, and barriers to, the effective upscaling of EbA interventions. • Develop a national EbA upscaling strategy for wetland and forest EbA interventions implemented under Component 2. • Host a workshop with relevant local and national authorities trained under Output 1.1 to validate and institutionalise the upscaling strategy.
Component 2: Implementation of wetland and forest EbA interventions in Zambia		
Outcome 2.1: Resilience of communities living around degraded ecosystems to climate change is increased through the implementation of EbA interventions in wetlands and forests.	<i>Output 2.1.1:</i> Protocols/Guidelines for EbA developed and implemented.	<ul style="list-style-type: none"> • Collate lessons learned and best practices from ongoing EbA projects in Zambia and other relevant countries. • Identify appropriate plant species to be used in EbA based on criteria including <i>inter alia</i> indigenous, multi-use, climate-resilience, and provision of co-benefits to local communities. • Identify and design activities for climate-vulnerable communities in wetland and forest areas to adapt to climate change using an EbA approach.

		<ul style="list-style-type: none"> • Develop protocols to guide the implementation of EbA interventions.
	<p><i>Output 2.1.2:</i> Local communities and provincial environmental officers at project intervention sites are trained to design, implement and sustain the project's EbA interventions.</p>	<ul style="list-style-type: none"> • Develop and implement locally appropriate training programmes for provincial environmental officers and local communities on EbA. These programmes should include activities to increase awareness of the benefits of EbA and practical measures to implement the protocols developed under Output 2.1.1.
	<p><i>Output 2.1.3:</i> Degraded forest areas restored using an EbA approach to reduce climate change vulnerability of local communities in the Bangweulu Wetlands and surrounding areas.</p>	<ul style="list-style-type: none"> • Undertake participatory community-based mapping of forest areas and other nearby ecosystems – in the vicinity of the project intervention site – to identify priority areas for restoration. • Use maps generated to identify vulnerable areas. • Undertake site preparation in participation with local communities, including <i>inter alia</i> removal of invasive alien plant species. • Develop and implement an assisted natural regeneration strategy for forest rehabilitation, including: i) site selection; ii) site assessment; iii) site species monitoring; and iv) site modification. • Restore identified areas of degraded forest, using multi-use and climate resilient species in accordance with the protocols developed under Output 2.1.1. • Design and implement a long-term strategy to monitor the implementation, socio-economic and environmental impacts of EbA restoration interventions in forest ecosystems.
	<p><i>Output 2.1.4:</i> Degraded wetland areas restored using an EbA approach to reduce climate change vulnerability of local communities in the Bangweulu Wetlands and surrounding areas.</p>	<ul style="list-style-type: none"> • Undertake participatory community-based mapping of wetland areas and other nearby ecosystems – in the vicinity of the project intervention site – to identify priority areas for restoration. • Use the maps generated to identify vulnerable areas. • Undertake site preparation in participation with local communities, including <i>inter alia</i> removal of invasive alien plant species. • Restore identified areas of degraded wetland, using multi-use and climate resilient species in accordance with the protocols developed under Output 2.1.1. • Design and implement a long-term strategy to monitor the implementation and bio-physical impacts of EbA restoration interventions in wetland ecosystems.
	<p><i>Output 2.1.5:</i> Energy efficiency increased and a diversity of renewable energies implemented to reduce unsustainable rates of use of natural resources, including fuel wood.</p>	<ul style="list-style-type: none"> • Identify primary causes of deforestation and degradation of ecosystems in the project area using a participatory approach. • Demonstrate appropriate renewable energy systems to reduce deforestation and the unsustainable use of natural resources for wood fuel. • Hold workshops with local communities at the project sites to identify community members, particularly women, willing to use renewable or energy efficient energy systems, including <i>inter alia</i>: i) improved cooking stoves; ii) biogas; iii) efficient charcoal kilns; and iv) solar power. • Provide training using a learning-by-doing approach to selected community members on the use of efficient and renewable energy systems demonstrated.

<p>Outcome 2.2: Communities living around the project intervention sites have increased capacity to adopt alternative livelihoods and climate-smart agricultural techniques to decrease their vulnerability to climate change and reduce degradation of ecosystems (wetlands and forests).</p>	<p><i>Output 2.2.1:</i> Community-specific alternative livelihood plans, identifying alternate livelihood strategies appropriate for each community based on EbA activities, are developed.</p>	<ul style="list-style-type: none"> • Hold workshops with local communities at the project site to assess current livelihood strategies and identify potential methods for livelihood diversification including <i>inter alia</i>: i) agriculture; ii) agroforestry; iii) tourism; iv) NTFPs; v) apiculture; vi) aquaculture vii) community woodlots; and viii) community game farming. • Undertake a feasibility assessment and cost-benefit analysis of appropriate alternative livelihood options in wetlands and forests. • Select local communities, through participatory workshops and meetings with community leaders, to demonstrate climate-resilient alternative livelihood options. • Design and implement alternative livelihood development plans – in conjunction with ongoing poverty alleviation projects/initiatives – appropriate for each community.
	<p><i>Output 2.2.2:</i> Community members and provincial environmental officers are trained on alternative livelihoods and sustainable land management techniques.</p>	<ul style="list-style-type: none"> • Train the provincial environmental officers, NGOs and community organisations on alternative livelihood options and sustainable land management techniques. • Train communities at the target intervention sites on the identified alternative livelihood strategies and sustainable land management.
	<p><i>Output 2.2.3:</i> Climate-smart agricultural techniques – such as agroforestry and conservation agriculture – and efficient irrigation techniques are implemented in target communities.</p>	<ul style="list-style-type: none"> • Hold participatory workshops with local farmers and community leaders to select farmers to trial climate-smart agricultural techniques. • Train local farmers on climate-smart agricultural techniques. • Provide start-up kits for climate-smart agriculture, including flood- and drought- resilient crop seeds, farming implements and irrigation infrastructure to local farmers at the project intervention sites. • Implement climate-smart agricultural techniques, such as conservation agriculture and agroforestry, with pilot farmers. • Implement appropriate rainwater harvesting techniques to supply additional water for crop irrigation. • Design and construct improved water supply infrastructure to improve communities’ access to irrigation and increase agricultural productivity.
	<p><i>Output 2.2.4:</i> Climate-resilient livelihoods identified and implemented at project sites.</p>	<ul style="list-style-type: none"> • Promote livelihood strategies identified for local communities under Output 2.2.1. • Promote improved aquaculture practices and train target communities in wetlands. • Promote apiculture and train target communities on the implementation of this technique. • Establish community-managed woodlots, away from patches of natural forest, to reduce dependence on natural resources. • Provide local communities at project intervention sites with start-up kits and equipment to implement climate-smart agriculture and collect, process and conserve NTFPs.
	<p><i>Output 2.2.5:</i> Establish community associations at project sites.</p>	<ul style="list-style-type: none"> • Establish community associations, including representation of youth and women, to share knowledge on climate-smart agricultural techniques and EbA in

		<p>wetlands and forests.</p> <ul style="list-style-type: none"> • Establish a demonstration site for each community association that includes examples of climate-resilient livelihoods, climate-smart agricultural techniques and rainwater harvesting. • Host community open days at the demonstration sites. • Conduct study tours for surrounding communities to learn from the implementation of climate-resilient livelihoods. • Design and implement a learning-by-doing campaign to increase the community awareness of the potential to increase climate resilience and soil fertility through EbA in wetlands and forests. • Provide basic financial management training to communities through the community associations. • Identify entry points for access to markets and provide support to community associations for marketing of products generated through the adoption of climate-resilient livelihood options.
Component 3: Knowledge and research on EbA and climate-resilient livelihoods		
<p>Outcome 3: Increased knowledge and awareness of: i) the ecosystem services provided by wetlands and forests; and ii) the benefits of EbA for increasing the resilience of ecosystems and livelihoods to climate change.</p>	<p><i>Output 3.1:</i> Communication strategy developed to collect and disseminate knowledge and best practices on EbA for wetlands and forests.</p>	<ul style="list-style-type: none"> • Collate knowledge products, best practices and lessons learned from relevant EbA-related projects in Zambia and worldwide. • Design and implement a knowledge management plan and communication strategy to capture, store and disseminate knowledge products generated by the project.
	<p><i>Output 3.2:</i> Awareness-raising campaign conducted on: i) the ecosystem services provided by wetlands and forests; and ii) the benefits of EbA for increasing the resilience of ecosystems and livelihoods to climate change.</p>	<ul style="list-style-type: none"> • Design and implement public awareness programmes on the effects of climate change, ecosystem services and the benefits of EbA for increasing the resilience of ecosystems and livelihoods to climate change. • Public awareness to include special activity days at schools in faith communities etc. • Use appropriate communication tools and local media to increase knowledge of the general public on climate change, ecosystem services and the benefits of EbA.
	<p><i>Output 3.3:</i> Long-term research programme, on ecosystems and EbA, established within relevant national research institutions.</p>	<ul style="list-style-type: none"> • Identify appropriate research institutions that will be able to assess the impact of EbA interventions in wetland and forest ecosystems. • Design and implement a research programme, with the selected research institution, to monitor the long-term impacts of the project's implemented EbA interventions in a scientifically rigorous manner. • Promote uptake of research results into science-policy dialogues.

Appendix 2: Summary of changes made to the PIF since approval into the technically cleared pipeline

There are four main changes to the PIF, as follows:

1. The co-financing plan was re-visited and amended to reflect the expected closure of the GIZ project Integrating Climate Change in Water Resources Monitoring, 2016-2017. The \$100,000 co-financing has been removed from Component 1 co-financing plan.
2. Updating of Tables A, B and C to reflect the revised co-financing plan.
3. Recognition of the AfDB/GEF Lake Tanganyika project, within Northern Province, due to be implemented from 2017- 2022, as a project that the LDCF project should coordinate with.
4. Recognition of the National Policy on Climate Change (2016) and the National Forestry Policy of 2014 as a national strategies that the project will need to align to.