Funding Proposal

FP034: Building Resilient Communities, Wetlands Ecosystems and Associated Catchments in Uganda

Uganda | United Nations Development Programme (UNDP) | Decision B.15/24

24 November 2016

GREEN CLIMATE FUND

Funding Proposal

Version 1.0

The Green Climate Fund (GCF) is seeking high-quality funding proposals.

Accredited entities are expected to develop their funding proposals, in close consultation with the relevant national designated authority, with due consideration of the GCF's Investment Framework and Results Management Framework. The funding proposals should demonstrate how the proposed projects or programmes will perform against the investment criteria and achieve part or all of the strategic impact results.

GREEN CLIMATE FUND

Contents

Note to accredited entities on the use of the funding proposal template

- Sections **A, B, D, E** and **H** of the funding proposal require detailed inputs from the accredited entity. For all other sections, including the Appraisal Summary in section F, accredited entities have discretion in how they wish to present the information. Accredited entities can either directly incorporate information into this proposal, or provide summary information in the proposal with cross-reference to other project documents such as project appraisal document.
- The total number of pages for the funding proposal (excluding annexes) is expected not to exceed 50.

Please submit the completed form to:
fundingproposal@gcfund.org

Please use the following name convention for the file name:
"[FP]-[Agency Short Name]-[Date]-[Serial Number]"

A.1. Brief Project/Programme Information			
A.1.1. Project / programme title		**Building Resilient Communities, Wetland Ecosystems and Associated Catchments in Uganda**	
A.1.2. Project or programme		Project	
A.1.3. Country (ies) / region		**UGANDA**	
A.1.4. National designated authority (ies)		**Ministry of Finance, Planning and Economic Development** **Mrs. Joyce Kamanyire Ruhweeza** **Principal Economist** **Department of Development Assistance and Regional Cooperation** **Tel. +256-414-707175** **Email-joyce.ruhweeza@finance.go.ug**	
A.1.5. Accredited entity		**United Nations Development Programme (UNDP)**	
A.1.5.a.Access modality		☐ Direct ☒ International	
A.1.6. Executing entity / beneficiary		Executing Entity: Ministries of Water and Environment, Agriculture, Animal Industry and Fisheries, Uganda National Meteorology Authority Other beneficiaries National Forest Authority National Environment Management Authority Ministry of Lands Housing and Urban Settlements Ministry of Trade, Industry and Cooperatives Ministry of Tourism, Wildlife and Antiquities Local Governments Water Resources Department Hydropower generating companies Non-Governmental Organisations Uganda Wildlife Authority Uganda Tourism Board # (total) of beneficiaries (people): 800,000 people	
A.1.7. Project size category (Total investment, million USD)		☐ Micro (≤10) ☐ Medium (50<x≤250)	☒ Small (10<x≤50) ☐ Large (>250)
A.1.8. Mitigation / adaptation focus		☐ Mitigation ☒ Adaptation ☐ Cross-cutting	
A.1.9. Date of submission Date of Resubmission		30/07/2015; 11/11/2016	
A.1.10. Project contact details	Contact person, position	Benjamin Larroquette	
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A.1.11. Results areas*(mark all that apply)*

Reduced emissions from:

- ☐ Energy access and power generation
  (E.g. on-grid, micro-grid or off-grid solar, wind, geothermal, etc.)
- ☐ Low emission transport
  (E.g. on-grid, micro-grid or off-grid solar, wind, geothermal, etc.)
- ☐ Buildings, cities and industries and appliances
  (E.g. new and retrofitted energy-efficient buildings, energy-efficient equipment for companies and supply chain management, etc.)
- Forestry and land use
  (E.g. forest conservation and management, agroforestry, agricultural irrigation, water treatment and management, etc.)

Increased resilience of:

- ☒ Most vulnerable people and communities
  (E.g. mitigation of operational risk associated with climate change – diversification of supply sources and supply chain management, relocation of manufacturing facilities and warehouses, etc.)
- ☐ Health and well-being, and food and water security
  (E.g. climate-resilient crops, efficient irrigation systems, etc.)
- ☐ Infrastructure and built environment
  (E.g. sea walls, resilient road networks, etc.)
- ☒ Ecosystem and ecosystem services
  (E.g. ecosystem conservation and management, ecotourism, etc.)

A.2. Project / Programme Executive Summary (max 300 words)

Please provide a brief description of the proposed project/programme, including the objectives and primary measurable benefits (see investment criteria in section E). The detailed description can be elaborated in section C.

1. The impact of climate change, coupled with other human and environmental stressors, is increasing degradation of wetlands and their associated ecosystem services in Uganda. This is negatively affecting the livelihoods of the people living in and around the wetlands – around 4,000,000 people. In fact, over 80% of the people living adjacent to wetland areas in Uganda directly use wetland resources for their household food security needs.[1] Given that wetlands are highly vulnerable to changes in the quantity and quality of their water supply (Erwin, 2009, Jin et al., 2009), climate change will most likely substantially alter ecologically important attributes of wetlands and will exacerbate the impacts from human activity. On the other hand, the loss of wetlands could exacerbate the impact of climate change in as they provide fundamental services that contribute to mitigation of such impacts. (Details on the impacts of climate change on wetland ecosystems in our project area can be found in the feasibility study).This project seeks to support the Government of Uganda to take climate change issues (increased climate variability, and extreme weather events such as drought, floods, high temperature, violent storms) into account in the management of critical wetlands. The project activities have been identified to specifically respond to and take into account the specific climate-related impacts and vulnerabilities of these wetland ecosystems outlined in the feasibility study.The barriers that prevent Uganda from achieving the preferred long term solution (a more resilient wetland ecosystem and associated livelihoods) need to be overcome are 1) the limited technical knowledge on the agro-ecological and hydrological systems of the wetlands; 2) insufficient extension services for resilient agriculture and livelihoods, and 3) inadequate climate information and early warning systems. This project will restore wetlands and their eco-system services, based on wise-use principles and guidelines as outlined by the Ramsar Convention on Wetlands, with sustainable land management practices and reforestation, will support resilient agricultural practices and alternative livelihoods for communities living in these areas to reduce the pressures on the wetlands, and finally will strengthen the climate information and early warning systems to support these communities to make climate-resilient decisions.

[1] Kakuru, Willy, Nelson Turyahabwe, and Johnny Mugisha, *Total Economic Value of Wetlands Products and Services in Uganda*, The Scientific World Journal, Volume 2013 (2013).

2. While the results and impacts of this initiative are expected to eventually spread countrywide, the project will target two regions and selected districts. The area targeted is South Western Uganda (6 districts of Kabale, Kisoro, Kanungu, Rukungiri, Greater Bushenyi and Ntungamo) and Eastern Uganda (10 districts of Pallisa, Kibuku, Bukedea, Namutumba, Butaleja, Budaka, Tororo, Kaliro Ngora and Mbale) with a total population of 3,946,366 people and land area of 13,000 Km^2. At least 800,000 people in and around the wetlands will directly benefit from this investment. This initiative will improve the lives of some of the most vulnerable people in Uganda, dependent on subsistence agriculture and wetlands for their livelihoods. Improved sustainable management of the wetlands, increased skills for employability and entrepreneurship capacity to start new businesses, and accurate and reliable climate information will have a transformational impact on people's lives in the targeted areas. Available public financing is limiting Uganda's ability to implement adaptation measures to restore critical ecosystem services for resilient livelihoods in the country. Consequently, the Government of Uganda, as a Low Income Economy, and a Least Developed Country, seeks maximum concessionality from the GCF (100% grant resources) to undertake the proposed adaptation investments. The cost-benefit analysis for the project has shown positive returns on the investments. The project is aligned with Government strategies such as the National Adaptation Programme of Action, the National Climate Change Policy. Thorough consultations with a wide array of stakeholders have defined the design of this project and the NDA has issued a letter of no objection.

A.3. Project/Programme Milestone	
Expected approval from accredited entity's Board (if applicable)	Date: 10/03/2016
Expected financial close (if applicable)	TBD [date of agreement on the FAA between UNDP and GCF]
Estimated implementation start and end date	Start: March, 2017 End: March 2025
Project/programme lifespan	8 years

B.1. Description of Financial Elements of the Project / Programme

3. The proposed project is a grant-based response to scale-up the restoration of critical wetlands in Uganda, a low-income country. A grant-based project makes sense in this case for a number of reasons. First and foremost, the proposed interventions are public goods and leaving it to the market will result in under provision. Because of the public good nature of the interventions, benefits will be shared, where exclusivity is not possible. There are significant social benefits to be realized as the project targets vulnerable communities, among the poorest in Uganda relative to the national average. Second, implementation of solutions that have long been recognized as necessary for improved wetlands management, especially in the context of addressing climate change risks, is constrained due to limited resources (both financial and human) among relevant national, sub-national and local level actors. Other significant political and institutional barriers also exist (details are outlined in Section C.2). High upfront costs present themselves as a constraint to attracting private investment to many of the required solutions. The potential for private sector engagement is nascent in the country. Third, as much as the interventions are necessary, they do not present any revenue generation or cost-recovery opportunities.

4. Consequently, public finance, in particular in the form of grants, is necessary. Without this grant support, the market will not result in any finance that can meaningfully lead to the requisite changes. That said, the use of grant financing for various barrier removal activities as this proposed project seeks to do, is likely to generate new opportunities for revenue generation, especially in the context of rural livelihood opportunities. While such revenue generating opportunities are not conducive for servicing a loan (an alternative (albeit unviable) way of financing the interventions—especially in the context of Uganda's current debt servicing responsibilities), these revenues can be directed towards improved stewardship of the wetlands at the local level. The co-finance for this project has been revised according to the GCF guidance, the new figure stands at 2M USD for UNDP, which is new and additional and will contribute towards advancing the objectives and outputs of this project. The Govt of Uganda co-financing is also new and additional and would not have existed without this project.

5. The limited public financing available is hindering Uganda's ability to implement adaptation measures to restore critical ecosystem services for resilient livelihoods in the country. The Government of Uganda (GoU), as a Low Income Economy (as per World Bank definitions), and a Least Developed Country (as per UN definitions), with a current debt burden of 7 billion USD, seeks maximum concessionality from the GCF (100% grant resources) to undertake the proposed adaptation investments.

6. The project targets highly vulnerable populations, more than half of whom are women, living in disaster prone and food insecure districts dependent on climate sensitive and marginal livelihoods. Through this project, Uganda would be able to achieve the following key inter-related results:

- Restore critical wetlands to improve ecosystem services such as ground water recharge, flood control, fishing and agriculture for enhanced livelihoods to the most vulnerable subsistence farming communities.
- Diversify livelihoods and agriculture to make it more resilient to climate shocks, by enhancing the skillset of beneficiaries for employability and adaptation.
- Empower communities in sensitive wetland areas in risk reduction and preparedness to climate-related disasters. This will be done through participatory and decentralized early warning systems and capacity development for implementing disaster risk reduction measures.

7. The GoU seeks UNDP's support as the accredited entity to access the grant resources, as direct access mechanisms are not established in the country. While Uganda is working on developing direct access capacity, including through support from UNDP, it will not be in a position to make use of this option for some years to come.

- *a breakdown of cost estimates analysed by sub-component in local and foreign currency and a currency hedging mechanism:*

Component	Sub-component (if applicable)	GCF Amount	Co-financing Amount	Total Amount	Currency of disbursement	Total Amount	Local currency (in billion UGX)*
Component 1: Restored and sustainably managed wetlands for	Sub-component 1: Restoration and management of wetland hydrology and associated forests	10.619	UNDP – 0.1 Govt – 12.5	23.219	million USD ($)	78.55	UGX

resilient livelihoods	Sub-component 2: Improved agricultural practices and alternative livelihood options in the wetland catchment	8.674	UNDP – 1 Govt – 5	14.674	million USD ($)	49.642	UGX
	Sub-component 3: Strengthening access to climate and early warning information to farmers and other target communities	3.732	UNDP – 0.9 Govt – 0.622	5.254	million USD ($)	17.774	UGX
	Project Management	1.115		1.115	million USD ($)	3.772	UGX
Total[2]		**24.140***	**20.122**	**44.262**		**149.738**	

**UN Exchange Rate used*

B.2. Project Financing Information

	Financial Instrument	Amount	Currency	Tenor	Pricing
(a) Total project financing	**(a) = (b) + (c)**	44.262	million USD ($)		
(b) Requested GCF amount	(i) Senior Loans (ii) Subordinated Loans (iii) Equity (iv) Guarantees (v) Reimbursable grants * (vi) Grants *	…… …… …… …… …… 24.140	Options Options Options Options Options million USD ($)	( ) years ( ) years	( ) % ( ) % ( ) % IRR
	** Please provide economic and financial justification in section F.1 for the concessionality that GCF is expected to provide, particularly in the case of grants. Please specify difference in tenor and price between GCF financing and that of accredited entities. Please note that the level of concessionality should correspond to the level of the project/programme's expected performance against the investment criteria indicated in section E.*				
	Total requested (i+ii+iii+iv+v+vi)	24.140	million USD ($)		

(c) Co-financing	Financial Instrument	Amount	Currency	Name of Institution	Tenor	Pricing	Seniority

[2] The budget total includes monitoring and evaluation costs. PMC cost is reflected separately for the GCF fund but as a lump sum for the co-financers in the FP. The Term Sheet (Annex V) has PMC cost per component for all the co-financers and as a lump sum for the PMC. AE is not included in the project cost estimates.

	Grant Grant Options Options	2.000 18.122 ……	million USD ($) million USD ($) Options Options	UNDP Government of Uganda …… ……	( ) years ( ) years	( ) % ( ) % ( ) % IRR	Options Options Options Options
	Lead financing institution: Ministry of Water and Environment (MWE)						
	** Please provide a confirmation letter or a letter of commitment in section I issued by the co-financing institution.*						

B.3. Fee Arrangement

8. A fee of 9% (in line with the B11 decision) is applied to cover quality assurance and oversight services performed by UNDP over all phases of the project cycle as follows: (i) oversight of proposal development; (ii) appraisal (pre and final) and oversight of project start-up; (iii) supervision and oversight of project implementation; and (iv) oversight of project closure. The 9% fee is included in the GCF contribution. This fee pays for UNDP's General Management Support (GMS) which encompasses oversight, quality assurance and management functions of UNDP Headquarters and Country Office units. In relation to the project, it would contribute to financing UNDP's project cycle management services which are: (i) project preparation oversight; (ii) project implementation oversight and supervision, including financial management; and (iii) project completion and evaluation oversight. It would also contribute to project-related corporate costs incurred in reporting, portfolio management, and knowledge-management. UNDP is required by its Executive Board to recover these costs to cover the services and management functions of the organization, and they cannot be broken down into activity-specific functions.

B.4. Financial Market Overview (if applicable)

9. The proposed project is a public sector project. While it is intended to support and increase livelihoods of project beneficiaries, the project will not in and of itself generate revenues for purpose of cost-recovery to service a loan. Uganda is also only seeking 100% concessional finance (i.e. a grant) from the GCF. As such, the financial market overview section is not applicable. No other sources of funds are available to the beneficiaries as they do not have access to institutional banking and other financial services.

C.1. Strategic Context

10. While Uganda has shown great economic improvements in the past few years, with growth rates averaging 5.5 percent between 2010 and 2014, it still faces many challenges. Only 18.5% of the working labor force is engaged in wage employment. The remaining 72% are largely engaged in subsistence agriculture. Agriculture remains the backbone of Uganda's economy, accounting for 25.3% of the country's GDP, and employs 70% of the population (both formally and informally), 77% of whom are women, and 63% of whom are youth. As of 2013, 19.7% of the population was living below the poverty line and there remain significant disparities in poverty levels across the region.[3] As of 2014, out of a total population of 28 million in the country, wetlands provide subsistence employment for over 2.4 million people.[4]

11. As outlined in more detail in the first section of the feasibility study, several climatic changes will lead to specific impacts that will negatively affect wetland environments in Uganda, or exacerbate existing pressures on these ecosystems (these stressors, both human and environmental, are further examined in section C.2 below). The 2.4 million people dependent on wetlands for the livelihoods, as well as countless more who are indirectly dependent on these ecosystems, will also suffer due to these impending climate risks. For example, as outlined in the National Adaptation Programme of Action (NAPA) (2007), projected drought conditions can lead to disappearance of wetland areas, which will result in a lack of water for livestock, humans and backyard crop irrigation impacting negatively on productivity and livelihoods.[5] Further, when rain-fed agriculture fails due to drought conditions, farmers encroach on wetlands, further destroying these ecosystems and changing the microclimate.[6] Both strengthening the resilience and sustainable management of wetland ecosystems (which have their own climate change adaptation services), and enhancing resilience of livelihoods through improving adaptive agricultural practices and diversifying income sources, are critical needs to support this vulnerable population.

12. The policy context for this project is already ripe for comprehensive impact in this area. Recent national policies and plans relating to development, wetlands and climate change have put in place a robust enabling environment for efforts on wetland restoration and resilient livelihoods. Sustainable wetland management is promoted in the **Vision 2040**, which also recognizes that climate change will affect all sectors of Uganda's economy. It emphasizes the need for integrating adaptation strategies across all sectors to ensure the country is resilient to impacts of climate change. This is further substantiated under the **second National Development Plan (NDP).** The NDP is Uganda's medium-term development strategy for the period 2014/15 to 2020 and serves as a guide for investment planning, budget allocation and social interventions that are needed to reach the vision 2040. It includes sector-specific targets to achieve eight objectives with the overall theme of "Growth, Employment and Prosperity for Socio-Economic Transformation." Specifically, in the area of environment and natural resources, the NDP has several relevant targets, including: "increase wetland coverage and reduce degradation," "increase the functionality and usage of meteorological information systems," and "increase the country's resilience to the impacts of climate change." Overall, the NDP recognizes that addressing the challenges of climate change is crucial for enhancing sustainable economic and social development. The NDP also makes reference to the **National Climate Change Policy (NCCP),** and ensures the development strategy is aligned with implementation of this Policy.

13. The NCCP of Uganda (2014) aims to help meet Vision 2040's goals through strategies and actions that address both sustainable development and climate change. The NCCP supports the integration of climate change issues into planning, decision-making and investments in all sectors and trans-sectoral themes through appropriate institutional arrangements. In line with the East African Community (EAC) regional policy, this national policy emphasizes climate change adaptation as the top priority for Uganda. The plan identifies common adaptation policy priorities for Uganda, one of which is specifically targeted at wetlands: "To promote long-term wetland conservation and restoration of degraded wetlands so that they can continue to provide global services, including mitigating climate change, while supporting the sustainable development needs of communities and the country." In addition, the policy also prioritizes the need to ensure climate resilience of several sectors, including agriculture and livestock, and fisheries and aquaculture sectors, as well as ensuring sustainable management of water resources. These are all supported under this proposed project. In fact, the NCCP has developed a **costed implementation strategy**, which provides a more detailed action plan and roadmap,

[3] Uganda's Second National Development Plan, 2012
[4] Second National Communication, Uganda (2014)
[5] Uganda's National Adaptation Programme of Action, 2007, p. 31, available here: http://unfccc.int/resource/docs/napa/uga01.pdf
[6] Uganda's National Adaptation Programme of Action, 2007, p. 44, available here: http://unfccc.int/resource/docs/napa/uga01.pdf

and outlines the additional costs needed for implementation. This proposed project is fully aligned with the priorities stated in the NCCP, and the financial modalities have been derived from this costed implementation strategy.

14. Furthermore, Uganda recently submitted a **Second National Communication (2014)** which elaborates its specific vulnerabilities to climate change impacts, as well as its contributions to the UNFCCC agreements. In this document, there is specific mention of the impact of climate change on wetland areas, as well as the value of sustainable water resource management (including wetlands) for adaptation – "for keeping the sectors of the economy productive and function effectively, while also minimizing the losses and negative impacts from floods and droughts." Uganda's **National Adaptation Programme of Action (2007)** prioritizes a number of adaptation strategies including: promotion of community-based practices of collaborative natural resource management and water resource management, enhancement of water supply to communities adjacent to protected areas (which includes wetland areas), promotion of appropriate and sustainable water harvesting, storage and utilization technologies, and expansion of weather observing infrastructure and promotion of multimedia approach to dissemination for weather and climate information. Uganda has also launched the process of developing a National Adaptation Plan (NAP), supported by the UNDP-UNEP Global Support Programme on National Adaptation Plans, with a focus on the Agricultural Sector. Specific priorities were identified during the launch of the Agricultural Sector NAP in June, 2015, many of which are directly in line with the focus of this project (e.g. introducing resilient natural resource management including agricultural water management, climate smart agricultural practices, and improved early warning systems and agricultural meteorological information generation and dissemination). In addition, the workshop discussions concluded that one of the priority goals was to restore wetlands, and therefore introduce adaptive interventions to promote better and sustainable utilization of these wetlands. This project will therefore support the implementation of the NAP, and provide evidence and experience to the process as it moves forward. Given that UNDP is managing the support for the NAP process, jointly with UNEP and FAO, the direct alignment and engagement between this project and the NAP process will be ensured.

15. In addition to policies at the national level, framework management plans for wetland systems and Ramsar Site Management plans have been developed to provide a framework on which specific interventions are derived. Furthermore several local communities have established Community Conservation Areas (CCAs) within the wetlands, and specific management plans to ensure sustainable use of the natural resources in these CCAs. This work was promoted under the Extending Wetland Protected Areas through Community Conservation Initiatives (COBWEB) Project, funded by the Global Environment Facility (GEF) and supported by UNDP. These management plans were developed in communities within the L. Mburo - Nakivale and L. Bisina – Opeta sites. While they have proved to be successful (see full Terminal Evaluation of the COBWEB project in Annex VIIIa), they have not yet been developed in the districts targeted under this proposed project. GCF resources will build on these lessons and scale up the local level planning processes demonstrated.

16. With this strong political backing at the national level, and its links to global agreements and commitments, there are still challenges to implementing the vision, given capacity and resource constraints. The GCF funds will be used to address these challenges, by contributing to implementation of national policies and strategies, and replicating and scaling up successful local strategies, which have been proven through recently implemented pilot projects.

C.2. Project / Programme Objective against Baseline

17. In Uganda, wetlands provide many important functions to the people, particularly in the context of food security. This is in addition to its role as a habitat for biodiversity that is also important for the economy. According to a recent 2013 study on the value of wetlands in Uganda, several market and non-market benefits are identified: "The market benefits include water for domestic use and watering of livestock, support to dry season agriculture, provision of handicrafts, building materials, and food resources such as fish, yams, vegetables, wild game, and medicine. The non-market benefits include flood control, purification of water, and maintenance of the water table, microclimate moderation, and storm protection. Wetlands also serve as habitats for important flora and fauna, have aesthetic and heritage values, and contain stocks of biodiversity of potentially high pharmaceutical value. Over 80% of the people living adjacent to wetland areas in Uganda directly use wetland resources for their household food security needs." [7] In addition to supporting food and water security, wetlands also support income generation and employment. "Of a total population of 34 million Ugandans,

[7] Kakuru, Willy, Nelson Turyahabwe, and Johnny Mugisha, *Total Economic Value of Wetlands Products and Services in Uganda*, The Scientific World Journal, Volume 2013 (2013).

it is estimated that wetlands provide about 320,000 workers with direct employment and provide subsistence employment for over 2.4 million."[8]

18. Wetland health and resilience can easily be compromised by climate change impacts. Climate change models for Uganda predict that temperatures will continue to increase, and there will be changes in the seasonal distribution and amount of rainfalls, more frequent extreme weather events, and increases in the frequency of heavy rainfalls (see first section of the feasibility study for more specific details and citations, based on an extensive literature review). Increases in temperature and erratic rainfall will result in more frequent and intense floods, droughts and heat waves, which will directly threaten wetlands and livelihoods that rely on its healthy ecosystem services. Hydrologic and drainage maps of the project targeted sites (the eastern and southwestern Wetlands Basin) indicate that most of the freshwater inflows pass through the wetlands and natural forests. These systems have played an integral role in maintaining the quality of water over the centuries. However, over the last three decades, climate change impacts, as well as other baseline (non-climate) issues such as excessive sedimentation and non-native species invasions, have resulted in substantial water quality deterioration.

19. Wetland health and resilience can easily be compromised by climate change impacts. Climate change models for Uganda predict that temperatures will continue to increase, and there will be changes in the seasonal distribution and amount of rainfalls, more frequent extreme weather events, and increases in the frequency of heavy rainfalls (see feasibility study for more specific details and citations). Increases in temperature and erratic rainfall will result in more frequent and intense floods, droughts and heat waves, which will directly threaten wetlands and livelihoods that rely on its healthy ecosystem services. Already, changes to current and historical rainfall patterns have led to changes in the hydrological regime, leading to significant changes in water availability for key areas such as domestic use, watering livestock, and irrigation for agriculture.

20. As a result, the water table in both eastern and southwestern Wetlands Basin have experienced and are expected to experience more frequent and sudden drops. Livelihood activities (such as overexploitation of fish and agricultural lands, poaching, and extraction of reeds) in the catchment are already proving unsustainable for the wetland areas. These human stressors are resulting in direct effects and changes in the wetlands that are impeding its ability to provide critical services. For example, in Kabale District, one of the proposed project target areas in Southwestern Uganda, about 58% of wetlands have been drained to establish more arable land for agriculture and other livelihood opportunities (dairy farming, tree growing and fish farming). These communities are searching for this land, since soils along the hillsides are becoming increasingly infertile due to temperature increases and other climatic changes.[9] As a result, the wetland ecosystems have lost their capacity to retain nutrients and store and filter water. This impacts water access for surrounding communities which are dependent on water from wells constructed near the wetlands. In addition, the ability of these wetland ecosystems to adapt to climate change and variability impacts are also grossly compromised, such a flood control, water storage and filtration, and maintaining the microclimate. The project proposes to address these issues by improving the ecosystem services of the wetlands and their associated catchments through reforestation and restoration activities, including water harvesting and aquifer recharge. Restored and reforested wetlands and their catchment will improve the capacity of the ecosystem to regulate extreme weather such as floods and drought, by reducing the impacts of flash floods thanks to absorbing the excess water better. The proposed interventions will also reduce the effects of droughts and desiccation by improving the retention of water in the wetlands and its catchment area, and by recharging ground water. A restored and improved ecosystem is insufficient on its own to address the impacts of climate change on the people living and dependent on the wetlands for their livelihoods. Therefore, the project aims at implementing crop diversification, conservation agriculture techniques, and train farmers in best practices for climate resilient farming. Improvement of value chains, local transformation of agricultural produce, and agri-based income generating activities (e.g. goat rearing, raising chickens, bee keeping, etc) will be promoted. In addition, diversification of income sources through alternative livelihoods in the form of employment and entrepreneurship training will help the vulnerable target population to not entirely rely on agriculture for their livelihood and food security. In order to ensure sustainability, women self-help groups will be set up or strengthened, and access to existing public or private microfinance and revolving funds will be strengthened. Finally, all of these climate change adaptation activities will require more reliable climate information. Without improved weather forecasting adapting to climate change is not possible. The LDCF project is setting the foundation for the improvement of the capacity of the Uganda National Meteorology Authority by increasing

[8] Second National Communication, Uganda (2014)
[9] Barakagira, Alex, and Eliezer Kateyo, "Impacts of Wetland Drainage on Domestic Water Supplies and People's Livelihoods in Kabale distric, Uganda," http://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/1556/Barakagira_109901.pdf?sequence=1&isAllowed=y

the weather and climate observational network, developing tailored products and initiating private sector engagement. This GCF initiative will build on this and complement these efforts, by supporting the development of flood, drought and extreme weather forecasts for the wetlands specifically. Hydromet advisories will be developed and tailored to the needs of the people living in and around the wetlands, as well as the wetland management department.

The three critical barriers that the proposed project will overcome are presented below:

21.***The exact vulnerability of key agro-ecological and hydrological systems of the wetlands is only partially known and not adequately addressed by the various development interventions in the project zone.*** To-date, there is limited engagement with local communities and resource managers in problem identification and solution finding related to improved wetlands ecosystem management for building climate resilience. Awareness of the composite impacts that poor land and resource management have on local livelihoods is insufficient for actions at scale to take place. Weak natural resource governance and control systems, poor understanding of incentive systems, and limited innovations in establishing and utilizing such eco-systems, is prevalent. Understanding of climate change risks and impacts on natural and social assets is also weak. Complicated social systems is also a constraint, including traditional communities that do not fully integrate culturally appropriate engendered approaches, i.e. targeted women's empowerment, and being cognizant of the dynamics of (seasonal) migration on household composition and available work force.

22. The extent to which smallholders receive ***impactful agricultural advice from extension workers*** will affect the extent to which new techniques and adaptation practices are understood and adopted. Capacity constraints of national and sub-national institutions dedicated to extension support translates to an inability to use their planning and support mechanisms and consequently their investment plans, as a guiding tool for driving planned adaptation. The inability to set vulnerability reduction targets on the basis of needs and available (and reliable) funding, to identify adaptive investment actions, and source technical expertise and financial means to implement the plan is also a constraint. Agricultural extension officers and NGOs that are providing agricultural assistance are not only limited in number, but also lack experience and technical skills in providing climate resilient farming techniques. Technical capacity constraints for climate-resilient water infrastructure design and livelihood support. For example, the design standards employed by Agricultural Department Authority officials responsible for designing and constructing rural irrigation work currently do not take into account changes in timing and intensity of rainfall and additional run-off, as well as extreme events such as floods and droughts. Furthermore, limited access to markets restricts farmers' ability to sell goods and to source agricultural inputs such as fertilizers, equipment and extension advice. Information on current market prices is also rarely available, and post-harvest losses are high.

23. ***Limited climate risk information hampers decision makers' ability to make informed policy changes.*** At the farmer-level, planning tools are lacking for the planting and harvesting season. At the national level, strategic decisions on agricultural planning over the medium term are prevented by a lack of national-level long-term projected changes in climatic parameters. Although there is a nascent early warning system (EWS) in place in Uganda, there are a number of key weaknesses, namely: i) a lack of agro-meteorological stations; ii) inadequately equipped forecasting institutions with limited capacity; iii) inadequate communication to stakeholders (such as water managers, extension officers, other agricultural/hydrological stakeholders) and, in particular, farmers (including packaging the information in a format that is not easily understood or accessible); iv) insufficient institutional processes in place to ensure effective distribution of information due to ineffective links between the UNMA and the District authorities; and v) limited capacity to cater for effective adaptation support at all levels (national, district, and local community).

24. To address these challenges, several projects have been implemented in recent years to pilot different approaches for improving sustainable wetland management in the face of the pressures outlined above. Specifically, the Extending Wetland Protected Areas through Community Conservation Initiatives (COBWEB) project clearly demonstrated how to use a given livelihood issue like poverty or water scarcity as an entry point to promote sustainable wetland use and management. Its primary focus was to showcase the direct link between wetland conservation and livelihoods. The approaches focused on the livelihood needs of communities, and worked with them to demonstrate this value. This led to an interest in further engagement of communities and to guard and manage wetland resources not only in the wetland regions but also in the immediate catchment that was under pressure.

25. The project established local committees and groups to manage the Community Conservation Areas (CCA) through implementation of the plans, which provides a valuable model for participatory management to be scaled up and

replicated in other districts and communities. However, the terminal evaluation of the COBWEB project identified a barrier to this replication, namely that there was no link to the private sector and/or development of micro-businesses in these plans, with no economic incentives incorporated. For example, the terminal evaluation recommends that community members should be trained in various agro-based, livestock or fisheries products to establish small businesses. Further, it recognized the lack of guidelines available for communities on undertaking specific management measures, which would help to replicate and scale up different interventions.

26. Responding to this challenge to replication and scaling up of successful community-based sustainable management practices, this project will focus on supporting communities dependent on the wetlands in these targeted areas to introduce new livelihood practices and business opportunities that would use wetland resources sustainably. Alternative livelihood options will also be introduced to help reduce pressures off of the wetlands, and minimize encroachment and draining. Underpinning the ability to sustainably manage these targeted wetland areas is the need for reliable and timely climate-related information to identify climate risks and make informed livelihood decisions. This is also essential in terms of early warning for potential extreme events, such as floods, which as described above will become increasingly common due to the impacts of climate change.

27. The project will build on this context of country commitments and ownership, strong multi-stakeholder engagement, cross cutting sectoral synergies, existing community platforms, key baseline resource assessments, and other information captured in the pre-feasibility assessment, to strengthen the on-going and new activities that demonstrate sustainable wetland management and resilient livelihoods in the context of climate change impacts.

28. The main goal of this project is to restore and sustainably manage wetlands and support target communities in wetland areas of Uganda to reduce the risks of climate change posed to agricultural-based livelihoods. This directly addresses the critical challenge outlined in the baseline scenario: ***climate change will further exacerbate increasingly degraded wetlands in Uganda, which provide valuable ecosystem services for local livelihoods, particularly for those dependent on the wetlands for water availability and agricultural production.*** As such, the approach taken by this proposed project will be three-fold.

29. First, it will address the specific vulnerabilities of the wetland areas themselves, through sustainable management practices and restoration activities that take into account expected climate change risks. It is anticipated that the restored wetlands will also enhance communities' climate change adaptation and resilience, by reducing risk to flooding and drought associated with changing climatic conditions. GCF resources will be used to restore degraded wetland ecosystems whose critical regulatory ecosystem services have either been lost completely or are under immense threat, posing a problem not only to the ecological character of the wetlands, but also to their continued provision of benefits to current and future generations (this is in line with the National Climate Change Policy of Uganda). The Government of Uganda has committed funds under this project to support monitoring of wetland areas – through boundary demarcation, strengthening the wetland information systems, and undertaking economic valuation of the wetland areas. The Government will also support communities to prepare wetland management plans, as well as build capacity at central and local levels within the government to support their implementation. GCF funds will further scale up sustainable wetland management practices and strategies that have been tried and tested in previous projects and through government support. It will focus on two regions, namely eastern and southwestern Uganda (see map in the Annex IX). Specifically, this will include support for improving and increasing water storage and retention facilities, rehabilitating degrading catchment areas, restoring different wetland areas and associated forests which can support reducing impacts of floods and drought, and strengthening wetland management practices overall.

30. Second, through the proposed project, GCF resources will be used to strengthen agricultural practices and identify alternative livelihood options for those living in the wetland catchment areas. These efforts will ensure that livelihoods are more resilient in the face of climate impacts, through introducing climate-smart interventions, technologies and land use practices relevant for the wetland and immediate area. At the same time, project resources will be used to introduce new livelihood options and market-based activities, (e.g. by training on business and entrepreneurial skills, accessing new markets and employability, and introducing micro-credit schemes). In order to avoid failed attempts in this field, a systematic approach of screening the market for gaps and employment opportunities will be done prior to delivering extensive training. Training and business providers will have a placement target of 80% of trainees to help ensure that training leads to employment. These interventions will have transformative impacts such as changing the agricultural practices of subsistence farmers living in and around the wetlands from a single crop to a more diversified agriculture that is more resilient to climate change and transforming the local markets by building a variety of skill sets and

entrepreneurship capacity for beneficiaries employability; changes that Uganda has not yet been able to accomplish. This will allow beneficiaries to become less dependent on wetland areas, thus taking the pressure off of these ecosystems.

31. Finally, underpinning both of these expected results, the project will help strengthen the generation, analysis and dissemination of relevant climate information and early warning systems for the targeted wetland areas. Access to information on climate variability and extreme events will help to enhance livelihood decision-making, for both resilient agriculture-based livelihood practices and alternative livelihoods. It will also strengthen risk reduction, which can help reduce direct impact of floods and droughts on wetland areas which threaten further degradation.

32. These three expected results are inter-related and integrated. Without each of these results realized, the overall project objective cannot be achieved. The theory of change section (in section E.1.2) further outlines the way in which the expected results are inter-linked.

C.3. Project / Programme Description

33. To achieve resilient livelihoods in these communities, three sub-components will be necessary, each outlined in detail below. Given several recognized gaps with regards to further defining the specific feasibility and impact of several activities of the project, each of these sub-components is divided into two phases. The first phase (years 1-2) focuses on scaling up the community plans designed under the baseline project and putting in place the necessary capacities, structures and concrete products to ensure the project reaches its full impact potential. The second phase (years 3-8) builds on this enabling environment and insights reached through various assessments to fully scale up activities.

34. With regards to achieving each of the three project sub-components, this will include support from the GCF, as well as other co-financing sources – namely the Government of Uganda and UNDP. Under each sub-component/output is a short description of the type of support provided by non-GCF sources, and how this will be complemented by GCF resources. Each of the inputs listed specify their funding source(s) in parentheses.

Output 1: Restoration and management of wetland hydrology and associated forests

35. Under this sub-component, at least 760 km^2 of degraded wetlands and its associated catchment will be restored and the lives of 500,000 people will be improved in selected districts of Eastern and South Western Uganda. The overall aim of the intervention is to restore the ecological and hydrological integrity of the wetland and support the development and implementation of a community-based framework for wetland management plans. This will help support climate risk management and resilient livelihoods through enhanced ecosystems services in the area.

36. The Government of Uganda has established a Wetlands Management Department (WMD) under the Ministry of Water and Environment (MWE). This Department is responsible for managing wetland resources, undertaking activities to build capacity of local governments to assess wetland resources, plan and implement activities for their sustainable management. In addition, they have also undertaken a series of data collection exercises to develop District Wetland Inventory Reports (DWIRs) which outline existing wetland resources, their values, threats and possible management options. However, while the WMD has done and will continue to do significant work to maintain wetlands and avoid further degradation, there is still extensive work to be done in restoring those that have already been lost. The Government of Uganda has therefore committed to USD 18.122 million under the MWE budget to support the aims of this project. The GCF resources will be used to scale up appropriate wetland restoration and management paradigms building on best practices and lessons learnt, particularly in selected districts of eastern and southwestern Uganda. Practical activities will demonstrate the direct link between the benefits of wetland conservation and people's livelihoods, with a specific focus on climate change risks and adaptation opportunities of these restored wetlands.

Activity 1.1: Small-scale water storage and detention facilities designed and constructed or rehabilitated in critical waterways for communities to benefit from enhanced ecosystem functioning; (GCF)

37. This activity will scale up community plans (designed under the COBWEB project (see annex VIIIb), including specific activities identified by communities such as small earth dams, ponds, drainage, clearing of waterways etc. The objective is to improve water harvesting and aquifer recharge. Small earth dams, bunding, clearing of small steams and rivulets, ponds, drainage will all be part of this activity. Much more detail will be provided in the feasibility study, on how many of these water harvesting structures will be implemented. See Annex II. The impacts of these interventions is the increase in water captured and stored in the wetlands and in ground water aquafers. This increased water will have a very positive

effect on the health of the wetlands themselves, but will also increase the availability of water for farming activities, for tourism (larger water bodies for boating), and to support the large biodiversity that these wetlands harbor.

Activity 1.2: Improved inlet streams to increase water delivery; (GCF)
38. Under this activity, community plans will be scaled up for increasing tree cover in the Lake Bisina catchment areas (based on plans designed under the COBWEB project). Also, under this activity, GCF resources will be used to implement and scale up recommendations and best practices from the independent terminal evaluation of the COBWEB project (summary in section E.4.6.) such as embankments, desilting of rivulets, water harvesting structures, etc , and the preparation of detailed plans for silt traps, drainage, flood control and maximum water recuperation.

Activity 1.3: Degraded catchment areas rehabilitated and land productivity improved; (GCF, GoU)
39. Scale up interventions identified in the COBWEB terminal evaluation as necessary follow up activities (e.g. replanting and protecting indigenous grasses and herbaceous vegetation resilient to climate variability, promote infiltration, decrease soil transpiration, placement of gabions in areas subject to excessive erosion) (GCF). Boundary demarcation and gazettement of wetlands will also be established (GoU). This activity will also scale up the training of community members and extension workers in sustainable land management techniques (GCF) and provide the necessary investments (infrastructure (earth movers, small earth dams), tools, etc) to scale up successful pilots delivered under the COBWEB project (GCF). Communities will be trained on the sustainable use of wetlands goods like fish (to avoid over-exploitation) and on sustainable land-use techniques (GCF) and raising community awareness on the importance of environmental protection (GCF).

Activity 1.4: Strengthened wetlands management practices (GCF, GoU)
40. Under this activity, the national wetland information system will be strengthened (GoU) and an economic valuation will be prepared for research and development plans (GoU). Institutional capacity will be built at central and local government levels on wetland management by training on technical knowledge about the impact of climate change on wetlands, environmental management and sustainable land management, and mentoring (GoU, GCF) will also be part of this activity, in order to scale up the preparation of community wetland management plans in each targeted area (GoU, GCF), and provide the necessary tools (from maps to earth movers), training and infrastructure to implement wetland management plans (GCF). This activity will also facilitate establishment of communities into committees and groups for management of local wetland areas and implementation of restoration activities (GCF). Formulating and enforcing by-laws, controlling charcoal burning

Output 2: Improved agricultural practices and alternative livelihood options in the wetland catchment

41. Output 2 will target at least 150,000 farmers including those who currently do not have secure access to irrigation, land-poor farmers, women-headed households, and the landless, to make their livelihoods are more climate resilient. Investments in small-scale rural infrastructure (shallow bore wells, drip irrigation, tilling tools) for agricultural purposes, especially on-farm water management infrastructure such as dams, canals, drip irrigation systems, as well as farming best practices and crop diversification will be implemented to realize high economic return given their coverage. In addition, the output will focus on technical skills training for employment in key economic sectors viable in wetland areas, such as tourism, health and construction. Most of the beneficiaries have very low levels of education and no skills that can help them find a job. Beneficiaries will be trained in specific skills with high employability potential (e.g. earth mover, driver, assistant nurse, reception clerk in hotels, desktop publishing). The training providers will have delivery targets to place at least 80% of the trainees in durable jobs. This will ensure that beneficiaries are not only trained but also placed in employment. This will focus on at least 50,000 of the most vulnerable people, particularly on women headed households, subsistence farmers and people identified as very dependent on the wetlands for their food security. Entrepreneurship development training, including business plan development, book keeping, accounting, stock management, access to banking and finance will be provided using GCF resources to 10,000 pre-screened candidates in the target districts. A mentoring programme to accompany the beneficiaries in this new business will be in place to ensure the sustainability of the effort. In order to deliver this output, the proposed project will follow the successfully tried and tested ILO methodology on Training for Rural Economic Empowerment (TREE[10]) and Start and Improve Your Business (SYIB[11]). This methodology has been successfully applied in over 80 countries with tested results on employment and economic empowerment. GCF resources will be used to support most of the activities under this sub-

[10] http://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_159165.pdf
[11] http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---ifp_seed/documents/genericdocument/wcms_159435.pdf

component, with some funding from the GoU. However, it will actively build on existing efforts and replicate good practices emerging from the COBWEB project and UNDP's broader project portfolio, specifically focusing on strengthening climate resilient livelihoods in the targeted wetland areas.

Activity 2.1: Crop diversification and resilient agricultural best practice adopted (GCF, GoU)
42. This activity will scale up the capacity building efforts of agricultural extension officers on resilient agriculture practices (smart agriculture, conservation agriculture) (GCF, GoU), and train farmers at all project sites on the importance of crop diversification and other resilient agricultural techniques as an adaptive measure to climate change (e.g. planting drought tolerant crops, early maturing crops, adopting multiple cropping techniques to spread risks). This includes scaling up established farmer and water user groups and/or agricultural cooperatives to oversee and facilitate the adoption and dissemination of these practices and measures (GCF). This experience and good practice will also be disseminated through farmer to farmer exchanges, training of trainers, demonstration sites and other methods, to replicate and scale up impact (GCF).

Activity 2.2: Economically viable and sustainable agri-based livelihood and income generating interventions introduced, promoted and supported in the wetland and immediate catchment (GCF)
43. This activity will scale up successful livelihood activities in the COBWEB project such as eco-tourism, aquaculture, and dairy products (GCF) and implement the recommendations from the COBWEB terminal evaluation on engaging the private sector for increased eco-tourism (GCF). The ILO methodology will be used to identify gaps, employment needs and income streams that are resilient to climate change (including market viability assessments) (GCF). Based on the findings, this activity will undertake the necessary trainings of identified beneficiaries, and will set up a model and 50 training centres in order to train and place beneficiaries in jobs, while making a profit – this will transform the local economy and raise the skill training capacity of the region (GCF). Under this activity, local groups, cooperatives and committees will be established to implement and manage the process of introducing and disseminating alternative livelihoods (participatory selection of beneficiaries, screening of skills and small and medium enterprises) (GCF). This activity will then undertake the necessary trainings of established groups (e.g. management of plantation of economically important tree species in buffer zones and farmlands, starting a business of plant nurseries, orchard management, sustainable fish production and processing, biodiversity counts, animal husbandry, CBO formation and eco-tourism); support the beneficiaries with the necessary small-scale infrastructure for identified livelihood options (e.g. beehives, fish ponds, fruit processing plants, cold storage); and provide the necessary additional small-scale infrastructure (e.g. renewable energy systems (pumps, biogas), cell phone repair tools) (GCF). All good practices and lessons learned will also be shared through training of trainers, demonstrations, and other methods (GCF).

Output 3: Strengthening access to climate and early warning information to farmers and other target communities to support wetland management

44. This output will focus on strengthening access to reliable climate-related information and scaling up advisories for farmers and other target communities in the two wetland target areas, to improve the adaptation capacity of the entire population in and around the wetlands – around 1,000,000 people. This will include the expansion of networks that generate and process climate-related data into relevant information to the scale and location of local districts, villages or communities, as well as dissemination of climate-related information/services, advisories and early warning to communities. A strong focus of this output will be on delivering actionable climate-related information to communities, taking the form of agro-met advisories for agriculture, as well as the dissemination channels for making information available to the "last mile." The ongoing project "Strengthening Climate Information and Early Warning Systems (SCIEWS) in Africa for Climate Resilient Development and Adaptation to Climate Change," supported by the UNDP, will complement the GCF resources to achieve this anticipated output. Its planned activities will be founded on both the existing pre-feasibility assessments developed by the UNDP project (see Annex II), as well as additional feasibility and capacity assessments undertaken during phase 1 of this proposed project. [In order to adapt to CC, accurate, reliable and locally relevant climate information is key to improving the management of the wetlands. By wetlands it is understood that it includes the people living in and around the wetlands. For policy makers and environmental managers, accurate and reliable climate information is crucial to plan policies and interventions, budget and prioritize scarce resources. For the local farmers and beneficiaries weather information is also crucial to plan their crops, the type of crop (short cycle, drought resistant) and the timing of planting, weeding and harvesting. The user uptake of information is a key step in the information dissemination cycle. The ongoing LDCF funded project on SCIEWS in Uganda, is currently working to develop tailored and packaged information for the target group. The project is also working towards partnering with mobile phone

companies to use SMS for communication of advisories and climate information. Last but not least, awareness and climate/meteorology literacy campaigns are also being conducted under the SCIEWS project. This GCF funded initiative will build on and strengthen further the capacity to deliver relevant climate information to the beneficiaries of this project. Although further work is required to advance this activity, it is ready to start as soon as the funding is approved as much baseline work would have already been completed.

Activity 3.1: Meteorological and hydrological infrastructural investments supported including additional manual and automatic weather stations, lightning sensors, hydrological monitoring equipment, agro-meteorological stations, forecasting equipment, and data archiving systems. (GCF, UNDP)

45. Under this activity, the Uganda National Meteorology Authority (UNMA) database and information management system will be updated and linked to Department of Water Resource Monitoring and Assessment (DWRM) water management and information system (UNDP) and the National Wetland Information System (NWIS) (GCF). Data rescue and digitization processes will be undertaken from existing archives (UNDP), and a protocol and an agreement between the DWRM and UNMA for data collection, data exchange, data processing, data analysis and flood, drought and severe weather risk assessment and warnings will be established (UNDP). This will be complemented by establishing protocols and agreements with agricultural extension services through the National Agricultural Advisory Services Project (NAADS) and the Ministry of Agriculture, Animal Industries and Fisheries (MAAIF) (GCF). 47. An online web platform linked to DWRM and UNMA's official websites and information and management systems (UNDP) will be developed and linked to infrastructure in targeted areas, which will be procured and installed (GCF); infrastructure repairs will be done as needed (GCF), and new systems will be integrated into the existing DWRM and UNMA networks (UNDP, GCF).

Activity 3.2: Capacity building of relevant staff on operation and maintenance of climate monitoring equipment, data interpretation, modeling and forecasting. (GCF, UNDP)

46. This activity will develop an observation network quality control and maintenance toolbox, and establish training materials, approaches and lessons learned, for meteorological and hydrological technicians on technical aspects regarding the operation and maintenance of infrastructure (UNDP). It will also establish operation and maintenance training facilities including demonstration equipment and reference quality sensors at training sites in the project target areas (UNDP, GCF), and train meteorological and hydrological technicians in targeted districts on technical aspects regarding the operation and maintenance of new infrastructure (GCF). Improvement of existing weather and seasonal forecasts will be undertaken through development of statistical downscaling approaches to correct biases in numerical model forecasts, utilizing digitized data to develop model output statistics (GCF).

Activity 3.3: Climate-related information/services provided to target areas, such as early warnings on flash floods and extreme weather, agricultural extension advice for a wide variety of crops, and short- to long-range weather forecasts. (GCF, UNDP)

47. This activity will train UNMA and DWRM forecasters, in collaboration with MAAIF and NAADS staff, to prepare weather and climate forecasts and package hydro-meteorological data and information into suitable format for user-agencies and local community end-users, including those specific to wetland areas (UNDP, GCF). It will also develop early warning products and advisories, utilizing satellite-based measurements of soil moisture and vegetation to enhance the usefulness and extent of these products, as well as SOPs for the target regions and users (UNDP, GCF). Training packages and toolkits will be developed to assist trained meteorologists, agronomists and hydrologists to build the in-house forecast and advisory development (using GIS tools and environmental data) capacities of DWRMA, MAAIF and UNMA and to enhance collaboration between the three departments and mainstream the online platform and integrated data storage management system (UNDP, CGF). This will be followed by the development of weather and climate-related alerts, tailored to the targeted wetland areas, including color-coded advisories for agriculture, watches and warnings for flood, drought, severe weather and agricultural stresses (GCF).

Activity 3.4: Customized ICT, mobile platforms, and other public and private communication channels identified and/or developed to support dissemination of the above information/services to the 'last mile' users to enable timely and urgent responsive action as well as short/medium/long-term planning for climate-dependent activities in sectors such as agriculture. (GCF, UNDP)

48. Co-development of information requirements for end-users will be undertaken through participatory workshops, which will feed into advisory and warning development through activity 3.3. This will include information on indigenous knowledge and local customs, which can help package understandable products in local languages (GCF). Advisories and warnings will be disseminated via radio and SMS-based platforms (UNDP, GCF). A review and proposal for revisions to the current i) cost recovery arrangement between UNMA, DWRM, WMD and CCA to adequately reflect enhanced

services and fee structures; and ii) government reimbursement levels for meteorological services to reflect higher levels of operating expenses and capital costs needed to maintain and operate automated and modernised equipment and retain forecasting skills (UNDP), will be undertaken. Further, an EWS national dissemination toolbox will be developed and operationalized, including a gender-sensitive training manual (UNDP). Community awareness on climate information and interpretation/use will be built. (UNDP, GCF)

C.4. Background Information on Project / Programme Sponsor

49. The executing entity of the project and proposed sponsoring entity is the Ministry of Water and Environment (MWE). The Ministry has significant experience in successfully implementing projects in partnership with UNDP. It has undergone an assessment of its financial procedures and standards and has met the UNDP requirements to manage large amounts of funds. The Directorate of Environment Affairs will provide overall strategic direction and technical backstopping support to the project. Each project output will be coordinated and managed by the relevant departments in MWE and other relevant agencies. The Ministry of Water and Environment has long and substantial experience in handling donor funds with the most recent being the World Bank Supported Water Development and Management Project worth US$135 million. The Ministry is also operating a Joint Water and Environment Sector Support Programme and a Joint Partnership Fund which serves as a basket to which different donors contribute. Financial management systems are fully aligned with the government financial management systems. The Ministry accounts include donor funded project are subjected to annual audits by the Auditor General. UNDP has reviewed the financial rules and procedures of the MWE and it has approved it as an executing entity.

50. The Constitution of Uganda 1995, Part XIII of the National Objectives and Directive Principles of State Policy states that “The State shall protect important natural resources, including land, water, wetlands, minerals, oil, fauna and flora on behalf of the people of Uganda”. This mandates the Ministry of Water and Environment to formulate policies, regulations, strategies, and guidelines, and to monitor and evaluate their implementation and compliance. In addition, it provides backstopping support to stakeholders involved in the development, management and conservation of water and environment resources including weather and climate.

51. In fulfillment of its mandate, the Ministry has established a fully-fledged Directorate of Environment Affairs including a Wetlands Management Department, a Climate Change Department and a Forest Sector Support Department, and the Directorate of Water Resources Management which are key in implementation of the project. The Ministry is also the National Focal Point for the Ramsar Convention on Wetlands of International Importance. Specific policy and on-the-ground action related to wetlands and catchment management undertaken by the Ministry include: formulation and implementation of the National Environment Action Plan (1994), the National Environment Management Policy (1995), the National Wetland Management Policy (1995), The Tree and Planting Act (2003), the National Water Policy (1999), the National Forestry Policy (1999), National Climate Change Policy (2015), as well as development and implementation of national demarcation and restoration strategies and wetland management plans. As a result, 443.3km of wetlands boundaries have been demarcated and 9,400 Ha of wetlands have been restored country-wide, which has contributed to the increment of wetland coverage from 10.9 to 11 Ha of degraded sections of wetlands restored between FY 2011/12 to 2014/15. In addition 83 Community Based Wetland Management plans, which rationalizes the use of wetland resources have been developed. 8 watershed catchment plans have been developed and finalized for implementation.

52. The Ministry of Water and Environment is expected to provide financial, technical and human resources during the implementation of the proposed project. In financial terms the Government through the Executing Ministry of Water and Environment will provide a total of USD 2 million annually and this will be integrated within the Medium Term Expenditure Framework (MTEF) as a commitment by the Government of Uganda. The funds will be used for taxes and other operational costs. On the other hand the Ministry of Water and Environment will provide the required human resources as well as offices to ensure efficient and effective implementation of the proposed project activities. In terms of the equity, the project shall focus on the highly degraded wetland ecosystems in the eastern and southwestern parts of Uganda and the project shall involve all categories of people including the women, children, youth, elderly as well as other vulnerable sections of the community in both rural and urban areas. In terms of management, the project will use existing structures at national, subnational and local government levels such as wetland regional technical support units and the water management zones. In terms of operations, the project will make use of the existing accounting, procurement, auditing as well as administrative procedures as stipulated by the Public Finance Management Act (2015) and Public Procurement and Disposal Act (2014).

53. The project activities, outputs and outcomes will be marketed and disseminated using the existing Ministry of Water and Environment Information, Education and Communication Strategy. In addition to the existing inter-district wetland management committees, Joint Sector Technical Reviews (JSR), Water and Environment Sector Working Group (WESSWG) forum and Annual Joint Sector Reviews will be utilized, as well as the Ministry website and community awareness meetings, among others.

C.5. Market Overview (if applicable)

54. Not Applicable for this project.

C.6. Regulation, Taxation and Insurance

55. The National Climate Change Policy (NCCP) of Uganda "has been prepared and designed within the context of the country's development vision and national development priorities; it provides a clearly defined pathway for dealing with the challenges of climate change within the current socio-economic context of Uganda, and looks ahead to the opportunities and benefits of a green economy." This initiative is fully aligned with the priorities stated in the NCCP and the financial modalities have been derived from the "Costed implementation Strategy of the NCCP."

56. The National Development Plan (NDP) is Uganda's medium-term development strategy for the period 2014/15 to 2020 and serves as a guide for investment planning, budget allocation and social interventions. It includes sector-specific targets to achieve eight objectives with the overall theme of "Growth, Employment and Prosperity for Socio-Economic Transformation." Uganda's National Climate Change Policy (NCCP, 2012) supports the integration of climate change issues into planning, decision-making and investments in all sectors and trans-sectoral themes through appropriate institutional arrangements. In line with the East African Climate (EAC) regional policy, this national policy emphasizes climate change adaptation as the top priority for Uganda. Mitigation efforts are included in the policy as secondary priorities. Among the planned activities of the project there is promotion of private and public partnerships (PPPs) development of small scale water storage facilities, promotion of climate-smart interventions and land use practices, food storage facilities, development of early warning systems.

57. In accordance with the National Environment Management Act Cap 153, the proposed project does not require detailed environmental assessment before implementation. However, in accordance with the wetlands, river banks and lakeshore regulations, the project will require wetland user permits from the National Environment Management Authority in consultation with the Wetlands Management Department for regulated activities such as fish farming, bee keeping, and ecotourism. Water abstraction permits will be needed from the Directorate of Water Resources Management for irrigation activities in consultation with relevant institutions. The project will also be required to comply with the provisions of the Employment Act 2006. The Act consolidates laws governing individual employment relationships and other connected matters. In addition, the project will be subject to the Workers Compensation Act Cap 225, which provides for compensation to workers for injuries suffered and scheduled diseases incurred in the course of their employment. This Act shall apply to workers employed by or under the Government of Uganda in the same way and to the same extent as if the employer were a private person, but the Act shall not apply to active members of the armed forces of Uganda.

58. The Foreign Exchange Act 2004 amended and consolidated the law relating to foreign exchange in Uganda, provided for the exchange of foreign currencies in Uganda and the making of international payments and transfers of foreign exchange and for other related incidental matters. In accordance with the Act, Bank of Uganda may impose restrictions on the importation into or exportation from Uganda of banknotes, coins, traveler's checks and securities denominated in currency of Uganda or in foreign currency, through regulations.

59. In accordance with the Motor Vehicle Insurance (Thirds Party Risks) Act Cap 214, it shall not be lawful for any person to use, or to cause or to permit any other person to use, a vehicle on a road unless there is in force in relation to the use of the vehicle by that person or that other person, as the case may be, a policy of insurance in respect of third party risks that complies with the requirements of this Act. Notwithstanding, subsection (1) shall not apply to a vehicle owned by the Government of Uganda.

C.7. Institutional / Implementation Arrangements

60. The project will be implemented following UNDP's National Implementation Modality (NIM), according to the Standard Basic Assistance Agreement between UNDP and the Government of Uganda, the Country Programme Action Plan (CPAP), and as policies and procedures outlined in the UNDP POPP (see https://info.undp.org/global/popp/ppm/Pages/Defining-a-Project.aspx)

61. The executing entity for this project is the Ministry of Water and Environment. The Ministry of Water and Environment is accountable to UNDP for managing the project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources. The MWE will sign a Memorandum of Understanding (MoU) with Responsible Parties and contractors. These MoUs will specify in details the roles and responsibilities for all Parties. In addition, works, supplies and services will be sourced through a competitive procurement process for which MWE will issue contracts to service providers.

Project implementation and compliance will be done through the following:

- Quarterly reports
- Annual reports
- Annual Performance Reviews
- Annual financial audits
- Mid-term project reviews

Additionally the UNDP standard procedures for project implementation as described under section H2 will apply. The following parties have entered into agreements with Ministry of Water and Environment to assist in successfully delivering project outcomes and are directly accountable to Ministry of Water and Environment as outlined in the terms of their agreement:

- National Forest Authority
- Ministry of Agriculture, Animal Industry and Fisheries
- Private sector
- Department of Water Resources
- Hydropower generating companies
- Non-Governmental Organisations
- Uganda Wildlife Authority
- Uganda Tourism Board

62. The management arrangements for this project are summarized in the chart below.

The **Project Board** is comprised of the following organisations: Ministry of Water and Environment, National Forest Authority, Ministry of Agriculture, Animal Industry and Fisheries; Water Resources Department; Uganda Wildlife Authority Uganda Tourism Board, UNDP, Ministry of Economic Planning and Development, Department of Wetlands Management. The Project Board is responsible for making, by consensus, management decisions when guidance is required by the Project Manager. Project Board decisions will be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case a consensus cannot be reached within the Board, final decision shall rest with the UNDP Programme Manager. The Project Board will meet at least twice a year.

63. The **Project Manager** will run the project on a day-to-day basis on behalf of the Ministry of Water and Environment within the constraints laid down by the Project Board. The Project Manager function will end when the final project terminal evaluation report, and other documentation required by the GCF and UNDP, has been completed and submitted to UNDP. The Project Manager is responsible for day-to-day management and decision-making for the project. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost. Furthermore, he/she will manage identified project risks and advise the Project Board on mitigation plans, maintain and monitor the status of these risks by maintaining a project risk log (NIM Guidelines) and establish internal control processes for the project with oversight from the Project Board/Steering Committee.

The project will be implemented following UNDP's National Implementation Modality (NIM), according to the Standard Basic Assistance Agreement between UNDP and the Government of Uganda, the United Nations Development Assistance Framework (UNDAF) Action Plan for Uganda and policies and procedures outlined in the UNDP POPP. (see https://info.undp.org/global/popp/ppm/Pages/Defining-a-Project.aspx) The national executing entity - also referred to as the national 'Implementing Partner' in UNDP terminology - is required to implement the project in compliance with UNDP rules and regulations, policies and procedures (including the NIM Guidelines). In legal terms, this is ensured through the national Government's signature of the UNDP Standard Basic Assistance Agreement (SBAA), together with a UNDP project document, which will be signed by the Implementing Partner to govern the use of the funds (once the funds are secured).

C.8. Timetable of Project/ Programme Implementation

See Annex X

D.1.Value Added for GCF Involvement

64. The GCF's involvement in this project is critical, given the country's current economic context, the particular need that is not being addressed from other sources, and the potential transformation this initial fund can bring in the form of further investments and long-term financial sustainability. Currently, domestic finance for restoring degraded wetlands and strengthening sustainable management are inadequate. The Government of Uganda has a current debt burden of 7 billion USD, and therefore has limited ability to increase investment in this area. Current ongoing efforts by Uganda need to be urgently complemented with additional finance in order to ensure that early steps are taken to scale up both in terms of coverage as well as impact on reducing the vulnerability of the poor and marginalized. The importance of the GCF support should not be underestimated as there are no other sources of fund to implement this urgent adaptation action for Uganda.

65. Given the rate at which wetland degradation is taking place and considering the scale of financing needed to address this degradation, it is necessary to diversify the sources of funding to support wetland restoration and sustainable management. This proposed project leverages the existing funds that are available from the Government of Uganda on supporting wetlands (USD 18,122,00 million), as well as the existing UNDP funds which have been committed to Uganda (USD 2 million new and additional). However, beyond these funds, there are no additional sources for Uganda to draw upon from UNDP, SCCF or the LDCF. Those that exist, such as the Adaptation Fund, are not accessible to countries until they have their direct access mechanisms in place. While Uganda is working on having this capacity in place, including with support from UNDP, it is not in a position to make use of this option at the moment. The specific activities required to restore and sustainably manage wetland areas in the face of climate change, especially in the context of rural livelihood opportunities, are not financially viable for private sector investment at this time. 72% of the population is comprised of subsistence farmers, and over 80% of the people living adjacent to wetland areas directly use wetland resources for their household food security needs. Addressing their needs will only contribute to reaching sustainable levels of food security and bringing people out of poverty, and will not generate the type of profit that will incentivize private sector engagement.

66. Nonetheless, the activities proposed provide the necessary initial investments to remove the barriers to private sector investment, and ensure long term financial sustainability – thus transforming this sector. Specifically, initial restoration of wetlands and putting in place sustainable management plans (particularly at the local level), will create a market for potential investments in eco-tourism which would further incentivize continued sustainable management of these ecosystems. Currently the potential for eco-tourism is high but prevented by the poor condition of the wetlands and the insufficient facilities. This initiative will improve the quality of the wetland as an attraction for tourists, and improve the local involvement of beneficiaries in this activity. The initial GCF investment is essential given the current financing landscape, but it is also an opportunity to catalyze market forces which will further shift this sector towards a climate-resilient development path.

D.2. Exit Strategy

67. To sustain the project interventions beyond its implementation period, this project will put in place the necessary ownership, capacity and identify financing schemes to ensure continued sustainable management of wetlands, sustained adoption of resilient livelihood practices, and maintenance of the climate information network. With regards to ownership, relevant government departments, as well as local communities (which have been consulted extensively), will be involved in the implementation of project interventions. Integration into existing institutional framework will ensure the continuity of the project, especially given the decentralized nature of governance and on-going projects. The strong commitment of the Government of Uganda to sustainably address climate change and its social, economic, environmental and financial impacts has been evident through several initiatives from the country's leadership. This clear intention is reflected in the country's National Climate Change Policy, Strategy and the establishment of the Climate Change Department in the Ministry of Water and Environment.

68. A participatory approach, which has already been initiated through collaboration and consultations with national government departments and other stakeholders in designing the project, will include capacity building of the lead institutions as well as other stakeholders, including the private sector. Suitable policy and technical, legal and institutional capacity will be established at both the local and the national level to ensure continued sustained engagement in sustainable wetland management and resilient livelihoods. The activities for the implementation of restoration efforts will be conducted at a community level and aim at building an understanding and awareness of the issues at hand while including the communities in the development and maintenance of the restoration efforts. The participation of the targeted communities is, for example, an instrumental part of the wetland restoration and adaptation measures related to flood control and water provisioning during drought periods. Trainings and participatory processes as well as the establishment of local processes and institutions (e.g. wetland management committees) aim to create the local capacity to make informed decisions in regards adapting to climate change-related flooding and water shortages. Further, the project will include a component of "training of trainers," to ensure continued capacity building of both, government staff and communities. Additionally, agreements will be established with individuals trained to ensure that they remain in the relevant government departments for a minimum period after receiving the training. Ensuring sufficient budgetary allocations for the sustainable functioning of both the wetland ecosystem and the climate information network will be an important component of project sustainability, particularly with regards to MWE. As the proposed project will complement existing government initiatives, operations and maintenance work requiring government intervention will be integrated into the existing programs and plans and budgets to ensure sustainability. Importantly, the Ministry of Water and Environment has established a unit to handle operation and maintenance of infrastructure and will be responsible for O&M of infrastructure.

69. Further, the project will develop processes, build capacity to manage infrastructure/resources, and identify financing schemes for enhancing the long-term functionality and sustainability of all three components of the project. This will be done through engaging the private sector, including small and medium sized enterprises. Firstly, to sustain the restoration and sustainable management of wetland areas, the project will strengthen the capacity of the Wetland Management Department to engage with private companies, particularly in the eco-tourism sector, which has incentives to restore and sustainably manage these natural resources. Through support for institutional restructuring of the department, and introduction of further incentives for partnership, this new business model will allow for cost recovery to ensure continued resources for managing the wetlands. Secondly, the project will help strengthen and diversify livelihoods of beneficiaries through skills development for both employability in local companies (e.g. tourism, health care, services) and entrepreneurship, access to micro-finance institutions and establishment of small-scale infrastructure. These activities will help strengthen the long-term financial sustainability of vulnerable beneficiaries who will have new, economically viable livelihoods not dependent on climate-sensitive resources. Finally, the project will contribute to business models being set up as part of the UNDP SCIEWS project, to establish financially sustainable climate information and early warning systems. This project is strengthening the capacity of the UNMA to engage with private companies, such as the civil aviation authority, mobile phone, insurance and tourism companies to charge a fee against the forecasts and products that are being developed. While climate information will remain a "public good," particularly for products used by vulnerable farmers etc, private companies may be prepared to pay a fee to the UNMA for specific tailored information or the raw data if it is spatially detailed and reliable enough to be used for their operations. This cost recovery model will help UNMA invest in the operation and maintenance of the system. The GCF project will further strengthen the public-private partnerships already being established under the existing project, and help ensure financial sustainability of the climate information and early warning systems, as a result of developing products specifically suited for the management of wetlands and agriculture[12], as well as being able to provide new sources of monitoring weather/hydrological data in

these wetland areas. The market for these products will need to be established and promoted throughout the project, but products will potentially be marketable in other wetland areas and beyond. This project, therefore, is using a variety of mechanisms (e,g, setting up public-private partnerships, innovative market-based finance mechanisms, institutional restructuring and cost recovery) to ensure financial sustainability of all three components of the project.

[12] See special issue Agricultural and Forest Meteorology, Volume 103, Issues 1–2, Pages 1-228 (1 June 2000). In particular, Rijks D. and Baradas M.W. (2000) The clients for agrometeorological information. Agricultural and forest meteorology. Volume 103, Issues 1–2, Pages 27–42.

E.1. Impact Potential

Potential of the project/programme to contribute to the achievement of the Fund's objectives and result areas

E.1.1. Mitigation / adaptation impact potential

70. In addition to impacting a large number of direct and indirect beneficiaries (PMF-A core 1, numbers detailed below), the proposed project will also contribute to several other assessment factors to demonstrate contribution to increased climate-resilient sustainable development. First, the project will increase generation and use of climate information in decision-making (PMF-A 6.0) under output 3, by increasing meteorological and hydrological infrastructural investments and the capacity to operate and maintain these investments, strengthening capacity at national, sub-national and community levels to collect and analyze information, develop this information into products and services relevant to the needs of beneficiaries in the wetland target areas, and to strengthen customized dissemination channels (e.g. ICT, mobile platforms) to reach the communities in a timely manner.

71. Second, the project will also contribute to strengthening adaptive capacity and reducing exposure to climate risks (PMF-A 7.0) through activities from all three sub-components. Strengthening sustainable management and restoration of wetland areas will ensure that the adaptation benefits are realized – specifically its ability to moderate the microclimate, and support water storage and filtration. Maintaining healthy wetland ecosystems will also reduce exposure to climate risk, by providing flood control and storm protection. Similarly, strengthening the resilience of existing agricultural practices and introducing new livelihood options less dependent on exploiting the wetlands, will make beneficiaries more adaptive to climate variability and change. Finally, with more accurate and timely climate and early warning information, beneficiaries will have the tools and knowledge to make adaptive livelihood decisions, such as when to plant their crops, which crops to prioritize in a given season, or where the market demands will be. They will also be able to reduce exposure to climate risk through weather projections and early warning systems.

72. Finally, the project will support strengthening awareness of climate threats and risk-reduction processes (PMF-A 8.0). Through support for establishing wetland management plans in output 1, beneficiaries will understand the threats and risks that climate change poses on wetland areas, and what strategies can be done to reduce these risks. Beneficiaries will also gain knowledge on how climate change and variability threaten their livelihoods, and new resilient practices or livelihood options will be introduced.

73. Finally, through more accurate climate information and an increase in tailored climate products to be used by beneficiaries will strengthen understanding of climate impacts on their lives and livelihoods.

74. The process indicators, such as maintenance of lakeshore buffer zones, improved fishing methods, monitoring of biodiversity and increase in number of species, fish size increase and improved income levels through increase of productivity per unit and income being earned from ecosystem activities, indicate that the project will have a high impact on natural resource conservation and livelihoods, which otherwise could have been deteriorated over time. Medium to long-term societal benefits catalyzed by the project will include increased land productivity and yields for both cash and food crops, increased fish catch, recharge of ground water, availability of water resources to livestock throughout the year in places where water is scarce, expanded grazing grounds, increased tourism revenue (where applicable), more varied and expanded availability of forest resources, among others. Considering that resource depleting strategies may make economic sense in the short run under certain circumstances, it will be key for the project's success to not just enforce the pursuit of long-term benefits, but also to create incentives for the realization of these benefits. Under increasingly variable climate scenarios, short-sighted practices that degrade agro-ecological and hydrological systems will make less economic sense and the benefits of maintaining and enhancing resilience will be an increasingly cost-effective adaptation strategy that not only maintains, but also increases socio-economic benefits.

75. This project does not plan to put in place long-lived, high emission or climate vulnerable infrastructure. The main infrastructures that will be installed are automated weather stations that have no environmental impact, no emissions and need to be replaced on average every ten years. This infrastructure is not vulnerable to climate change and extreme weather events.

E.1.2. Key impact potential indicator

Provide specific numerical values for the indicators below.			
GCF core indicators	*Expected tonnes of carbon dioxide equivalent (t CO_2 eq) to be reduced or avoided (Mitigation only)*	*Annual*	
		Lifetime	
	Expected total number of direct and indirect beneficiaries (reduced vulnerability or increased resilience); number of beneficiaries relative to total population (adaptation only)	*Total*	- 300,000 people in the target communities will have access to direct livelihood support - 300,000 people benefit from improved productivity in the catchment - 20,000 people benefit from wetland capture fisheries - 40,000 people benefit from rainwater harvesting - 100,000 people benefit from irrigation water abstracted from wetlands - 20,000 people benefit from apiary farming - 20,000 people benefit from wetland based ecotourism enterprises - 64,370 hectares of wetlands restored and maintained
		Percentage	11% of the vulnerable[13] population of Uganda
Other relevant indicators	• Expected reduction in the number of people affected by wetland ecosystem degradation and related disasters, especially vulnerable groups (women, elderly, etc.) • Expected increase in the area (ha) of habitat or kilometers of coastline rehabilitated (e.g. reduced external pressures such as overgrazing and land degradation through logging/collecting); restored (e.g. through replanting); or protected (e.g. through improved fire management; flood plain/buffer maintenance) • Expected increase in the number (percentage) of households adopting a wider variety of livelihood strategies/coping mechanisms • Expected increase in the percentage of food-secure households (reduced food gaps) • Expected increase in the area (ha) of agricultural land made more resilient to climate change through agricultural practices (e.g. planting times, new and resilient native varieties, efficient irrigation systems adopted) • Evidence that climate data is collected, analysed and applied to decision-making in climate-sensitive sectors at critical times by the government, private sector and men/women. [Core indicator]		

Describe the detailed methodology used for calculating the indicators above.

The identified number of beneficiaries was calculated first based on the population of the targeted areas. This is based on the total population in the targeted districts (between 400,000 – 600,000), as well as the number of counties, sub-counties, parishes and villages and the average population per parish (between 5,000 – 7,000). This population was then assessed based on proximity to the wetlands, as well as the targeted sub-counties affecting and benefiting from the wetlands (with an understanding that 99% of the population live in rural areas, and only 1% in urban areas). Finally, households which are the basis for planning determined the final population of beneficiaries.

Specifically, the different beneficiary numbers correspond to the following criteria:

- Those that will have access to direct livelihood support (300,000): people who are living adjacent to wetlands and survive solely on wetlands, that is, do not have any other land elsewhere; will benefit from diversified livelihoods; include both upstream and downstream communities

[13] http://www.worldbank.org/en/country/uganda/overview

- Those that will benefit from improved productivity in the catchment (340,000): people that have land both in the wetland and in the catchment, as well as those that only have land in the catchment but have become less productive due to poor agricultural practices or because of reduced rains will benefit from climate-smart interventions including small scale water harvesting and irrigation. Furthermore, 300,000 people in the target communities will have access to direct livelihood support.
- Those that will benefit from wetland capture fisheries (20,000): people who are currently engaged in natural fishing of clarias using unsustainable methods like poisoning and other crude methods (exist primarily in western Uganda where they capture clarias and sell to other fishermen who fish only Nile Perch).
- Those that will benefit from wetland based ecotourism enterprises (20,000): communities adjacent to wetlands that are habitats to biodiversity species that are endemic to wetlands (most communities are already organized in groups around wetlands awaiting for support, so are easily identified)
- Those that will benefit from irrigation water abstracted from wetlands (100,000): people who fit into the second category above (benefiting from improved catchment productivity) but also includes those that take care of commercial farms around the wetlands that need increased amounts of water.
- Those that will benefit from apiary farming will be 20,000 people benefit.

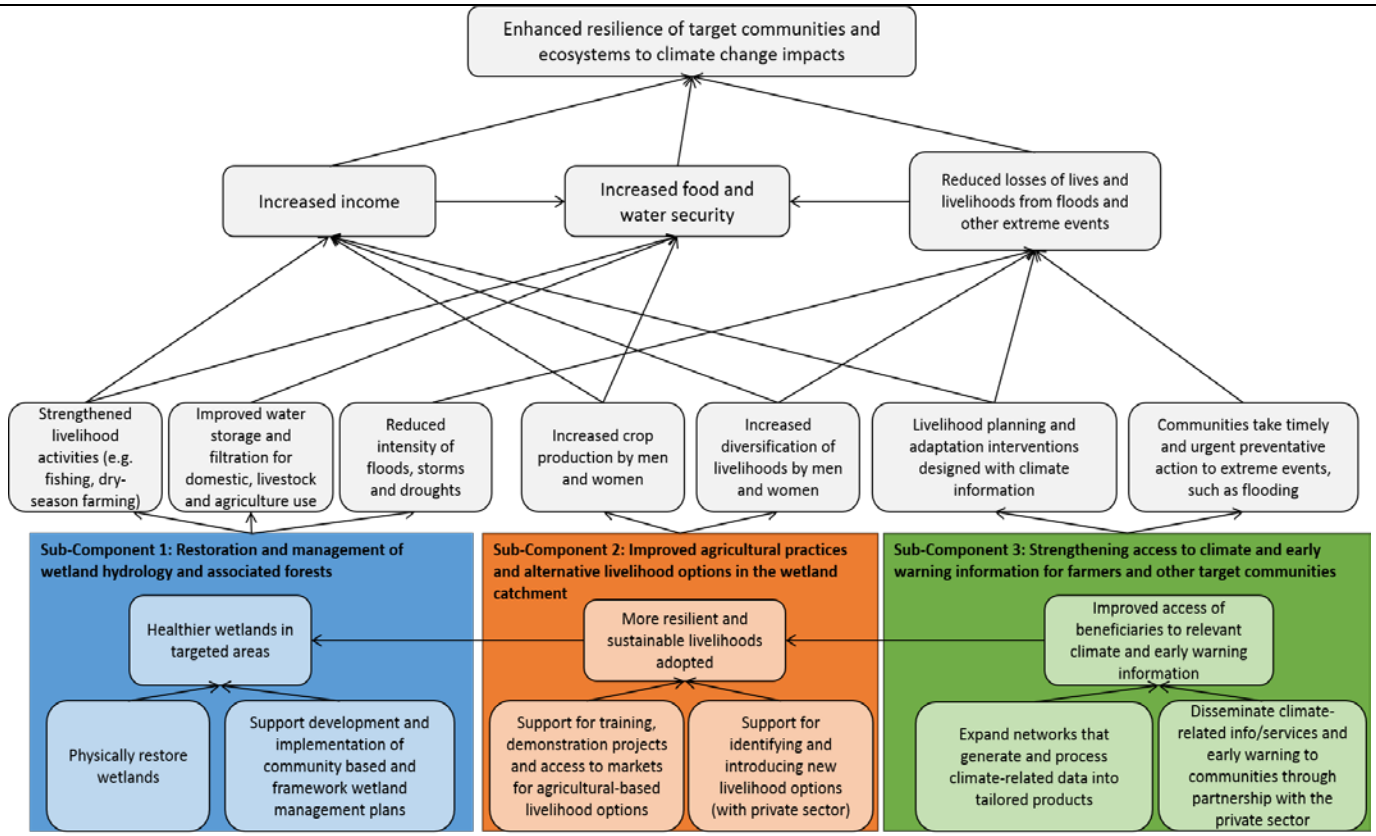
800,000 is the number of direct beneficiaries, with close to 4M indirect beneficiaries.

Describe how the indicator values compare to the appropriate benchmarks established in a comparable context.
A comparable project in Burkina Faso has shown effective impact with 150,000 beneficiaries with a budget of 7M. Similar indicator values were used. This project will have a larger impact because the wetlands ecosystem in Uganda are much bigger and provide ecosystem services to a larger number of people.

E.2. Paradigm Shift Potential

Degree to which the proposed activity can catalyze impact beyond a one-off project/programme investment

E.2.1. Potential for scaling up and replication (Provide a numerical multiple and supporting rationale)



76. This is a single project with one objective. The Theory of Change articulated above illustrates the contribution each of the three output areas will have on the long-term outcome and impact of this project.

77. Under output or sub-component 1, project activities will focus on strengthening the resilience of the wetland areas themselves to climate change impacts to maximize their ecosystem benefits. (i.e. temperature increase, changes in seasonal distribution of rainfalls, more frequent extreme weather events, increased frequency of heavy rainfalls, and infertility of hillside soils and deterioration of water quality – all further examined in the feasibility study). This will include physically restoring wetlands, and putting in place wetland management plans that ensure sustainable and resilient management of these ecosystems. The resulting output of these two activities is healthier wetlands in the targeted areas which will be more resilient to impending climate risks, and also lead to several short-term outcomes. These outcomes relate to the specific services a restored and sustainably managed wetland ecosystem can provide in strengthening the climate resilience of the surrounding communities: strengthened livelihood activities, such as fishing and dry-season farming, water storage and filtration for use by households, livestock and irrigation or agriculture, and protection against floods, storms and droughts. Strengthened livelihoods will contribute to increasing sources of income (and thus increased income generation) and diversification such that income is not susceptible to degrading wetlands and climatic changes. Strengthened livelihoods, as well as improved water storage and filtration, will also contribute to increased food and water security, since surplus agricultural production, water access and income will be available to secure food and water. Reduced intensity of natural disasters, resulting from healthier wetlands to protect against floods, storms and droughts, will lead to reduced losses of lives and livelihoods from these extreme events. Replicating or scaling up the activities under this output area both within these target areas and to other wetlands, will further improve the health of these or other wetlands, which will further multiply the potential short-term outcomes a healthy and sustainably managed wetland can provide.

78. Under output or sub-component 2, project activities will contribute to both strengthen existing agricultural livelihoods by introducing climate-resilient practices, as well as introduce new opportunities for livelihoods that use sustainably managed wetlands. Climate-resilient agricultural practices will be defined and introduced based on communities' needs,

and will include smart agriculture, conservation agriculture, and crop diversification (e.g. planting drought tolerant crops, early maturing crops, adopting multiple cropping techniques to spread risks). Similarly, new livelihood opportunities will be introduced which do not further degrade wetland ecosystems, such as eco-tourism, aquaculture, and dairy products. With new livelihood options, not only will wetland degradation be reduced, but diversification will strengthen resilience of communities (since they will not be so dependent on one livelihood which may be susceptible to changing and uncertain climate conditions). With economically viable and sustainable agri-based livelihoods and more diversified income generation, the output of these activities will be more resilient and sustainable livelihoods adopted. This output also contributes to enhancing the health of the wetlands, (output 1), through reducing livelihood pressures which are exacerbated by climate change. Leading from this result, several short-term outcomes emerge, namely: increase crop production (in the case of resilient agricultural practices) and diversification of livelihoods – both in the context of a changing climate. Scaling up and replicating agri-based activities within the targeted wetland will be done by setting up farmer-to-farmer exchanges and training of trainers. The project will also support agricultural cooperatives to further strengthen organization of farmers and access to a range of necessary rural facilities, including those relating to input and output marketing, and financial services (further elaborated in para 86). This sub-component, therefore, has potential to multiply resilient and sustainable livelihoods within and beyond these target wetland areas.

79. Finally, output or sub-component 3 focuses on strengthening access to climate and early warning information for farmers and other target communities in order to take preventative action against climate-induced extreme events, and strengthen livelihood planning in the face of climate change. The activities under this output focus on expanding networks for generating and processing information that is relevant and tailored to the needs at the local level planning, as well as strengthening dissemination channels to ensure this information reaches the local users (e.g. farmers). These two activity areas will lead to improved access of beneficiaries to relevant climate and early warning information. As a result, beneficiaries will be able to integrate this information into livelihood planning and adaptation interventions, which would increase their resilience – thus also contributing to activities under sub-component 2 and the outcome of increased income. In addition, information particularly on early warning of extreme weather events, would allow communities to take timely and urgent preventative action to these events, such as flooding, and subsequently reduce losses from these events. Putting in place the right systems and testing out the best technologies will provide a model for scaling up in other districts and regions of the country. Through engagement with the private sector, and setting up the necessary enabling environment and incentive structures to engage the private sector, the project will also pave the way for a much greater scale up and replication. Multiplicative impacts in this output area, such that even more beneficiaries have access to relevant climate and early warning information, therefore can also be attained building on the activities proposed in this project. Overall, therefore, this proposed project has the potential for a real paradigm shift by bringing successful activities to the scale required for transformational and significant impact that the previous pilot projects could not achieve.

80. The three outputs are interrelated by addressing the identified barriers and climate related drivers of wetlands degradation. The first output aims at restoring and strengthening the resilience of the physical attributes of the target wetlands by improving reforestation, water flow and storage and indigenous species. This restoration effort will only be effective in addressing climate vulnerabilities if the people living in and around the wetlands have alternative and resilient livelihoods that do not rely on the wetlands and further exacerbate their degradation. Thus, output 2 will provide this alternative by delivering high quality training to improve the skills of the beneficiaries for employment and help subsistence farmers adapt and strengthen resilience of their agricultural practices (including crop diversification) in the face of climatic changes, and improve additional skills for alternative employment to buffer against climate-related shocks. Output 3 will provide reliable and accurate climate information and early warning to improve the resilient management of the wetland and to ensure that beneficiaries have the necessary information that is crucial for resilient farming practices and for reducing risks posed by extreme climate induced weather events.

E.2.2. Contribution to the creation of an enabling environment

81. This initiative will have a strong catalytic effect in ensuring a sustained participation of both the public and the private sector. The proposed measures, for example restoration of the degraded parts of the wetlands and introduction of meteorological equipment to monitor weather variations, will help the communities and other stakeholders mitigate some of the CC impacts. The project will support establishment of farmer-agro-input supplier platforms and linkages to reduce the market distortions associated with middle actors. Collection and dissemination of climate information will use public-private sector model that involves mobile telecommunication companies. The private sector will be actively involved in the development of alternative livelihood enterprises and wetland product value chains. Skill training will be run by private sector companies that will provide the training, ensure the placement of the training, and make a profit out of it. Improving agricultural productivity in wetland catchments requires strong linkages between small-scale farmers and agro-input suppliers. An increase in the value chain will also have a conducive effect on the participation of the private sector because additional profits are going to be made and open up further opportunities for the private sector (for example running and operating transport operations form the farm gates to the markets).

82. Adequate supplies and efficient functioning markets are important to stabilize and improve food security, and higher income levels. To help the rural poor participate in the markets, agricultural output must diversify, quality of produce must improve, and agro-based processing must add value to primary products. Rural agricultural communities must also obtain greater access to credit. GCF resources will provide precisely that, by providing the means for communities to diversify crop production, skills and livelihood options including improving the value chain of particular crops like fruits by transforming the raw fruits into juices, jams, pickles and other such products, vastly increasing the value of the product and also creating a local supply. This initiative has a strong replication potential, it is estimated that this project will cover around 20% of Uganda's wetlands, therefore it has an 80% replication potential. Also, an average doubling of income by the beneficiaries through income generating activities will reduce the pressures on the wetland natural resources. Currently the local agriculture market is 90% based on maize. This initiative will support crop diversification and thereby increase the variety of produce on the markets.

83. The communities will become better organized through cooperatives and local groups established and scaled up by the project (see activities 2.1.5 and 2.2.6), which can help provide a range of necessary rural facilities, including those relating to input and output marketing, and financial services. Cooperatives provide a good linking mechanism, allowing farmers to collectively access the marketplace, both to market their crops and to access credit and farm inputs at reasonable rates. Agricultural co-operatives play an important role in supporting small agricultural producers and marginalized groups such as young people and women. Using cooperative models in the targeted project areas will ensure empowerment of their members economically and socially and would create sustainable rural employment through business models that are more resilient to economic and environmental shocks. GCF resources will foster such a change and increase income levels of farmers but also of the entire household by involving women in income generating activities through skills development and training. Investment in the agricultural sector and creation of employment opportunities generating income are essential for food security. Since the majority of Ugandan rural people rely on agriculture, livestock and related services for their livelihood, investment in this sector will create employment opportunities that will enable people to have income that will be used for food purchases in associated markets.

E.2.3. Contribution to regulatory framework and policies

84. Implementation of programmes and projects in Uganda is guided by a 5 year National Development Plan which aims at addressing climate change impacts on peoples livelihoods. The proposed project will feed into the existing strategies and support implementation of the National Climate Change Policy (NCCP) including the NAPAs and other climate responsive programmes. Uganda's Vision 2040 commits the Government to develop appropriate adaptation and mitigation strategies on climate change. Similarly, the Uganda's National Five-year Development Plan II calls all sectors to mainstream climate change adaptation and mitigation at all levels. The Uganda National Climate Change Policy and its Costed Implementation Strategy was developed with the overarching goal "to ensure a harmonized and coordinated approach towards a climate-resilient and low-carbon development path for sustainable development". The National Biodiversity Strategy also puts emphasis on supporting the designing, implementation and scaling up of ecosystem based adaptation (EBA) to climate change. The Ministry of Water and Environment, Climate Change Department in collaboration with the National Planning Authority has begun the process of developing the National Low Emission Development Strategy (LEDS) which, among others things, will guide national low emission strategic interventions and support the implementation of the Nationally Appropriate Mitigation Actions (NAMAs). The proposed project activities will therefore, feed into the existing NCCP framework on addressing adaptation and mitigation strategic interventions and support the implementation of the NCCP. This will result in increased community and ecosystem resilience to climate change as well as exploring possible mitigation co-benefits derived from conservation and sustainable utilization of wetlands and forests such as enhancing the GHG sinks and storage for low – carbon development paths and green growth.

E.2.4. Potential for knowledge and learning

85. Each of the three sub-components (outputs) of this project contributes to creating and strengthening knowledge, particularly of the beneficiaries. With regards to output 1, knowledge on sustainable wetland management practices and the value of wetland ecosystem services will be shared with local communities, as well as other relevant sub-national and national stakeholders (governments, NGOs, private sector, etc.) (See activity 1.4). This knowledge will be substantiated through the comprehensive analyses done under phase one, aiming to further understand the specific ecosystem services being provided, and being lost, in the two project sites. This information will be used to inform the training and awareness raising above, as well as brought directly to policy makers to inform policies and decision-making for these areas. Output 2 is founded in the creation and dissemination of a wide range of knowledge on new adaptive practices, crop diversification and agricultural best practices, understanding of local market conditions and factors affecting prices etc (see activities 2.1 and 2.2). Beyond simply sharing information with beneficiaries, through trainings, practical application, extension services, etc., beneficiaries will also be engaged in collective learning, such as farmer-to-farmer exchanges, demonstration sites, training of trainers, and other methods (see activities 2.1.10 and 2.2.11). Finally, output 3 will also have a strong knowledge creation and dissemination aspect. Climate information producers (hydromet officers) will be targeted for strengthening knowledge in how to generate and analyze this information, as well as how to develop tailored information products (see activities 3.2). Information users (communities) will be targeted through the dissemination of these tailored products coupled with strengthening knowledge on how to use this information to make resilient livelihood decisions (see activities 3.4 and 3.5).

86. Further, one of the priorities for phase one of this project is to undertake comprehensive assessments in the two target areas, to better understand the ecological, social and economic dynamics of the target areas and generate detailed maps of the areas. This process will not only help identify specific practices and livelihood opportunities to be supported under phase 2 of the project, but it will also provide a baseline for better understanding the impact of the project activities themselves. Beyond collecting the specific indicators under the project results framework, the project will also undertake a mid-term and final assessment (as part of the mid-term review and final evaluation) which will return to the same assessment criteria examined under the initial phase one studies. Comparing these assessments over time will provide insight into the impact of different project activities, such that knowledge can be generated and shared on what types of activities are successfully leading to impact.

87. Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.

E.3. Sustainable Development Potential

Wider benefits and priorities

E.3.1. Environmental, social and economic co-benefits, including gender-sensitive development impact

88. The proposed project will make it possible for targeted communities in the two regions to realize and benefit from alternative livelihoods and economic and social benefits. Ecosystem based approaches to protect communities and ecosystems against climate change impacts are shown to be effective in reducing loss of life and property from floods and drought. Functioning ecosystems and well informed accurate weather, climate and hydrological forecasts can reduce losses in the short and long-term. As this will strengthen the overall framework and infrastructure for climate monitoring and tailored products for the agriculture sector, women and men engaged in agriculture based livelihoods will be able to plan for and adapt to variable climate conditions. This helps increase crop yields through healthier ecosystems, strengthened agricultural practices, and reduced crop losses. It is expected that crop yields will increase by at least 100%, thereby also raising income by similar ratios. Ultimately, this will contribute towards enhanced food security and resilient livelihoods and ecosystems. The project will also yield environmental benefits through strengthened ecosystem resilience and improved soil and water quality. The shift to a demand-based and multi-stakeholder network for climate information and services will attract private sector investment. Livelihoods improvements will include enhanced agricultural and farming output and income, as well as income generating activities for beneficiaries that will increase income by at least 100%. Many empirical studies on valuating different ecosystems services in different regions in the world have been conducted. They helped revealing the relative importance of several ecosystem services especially those, which are not traded in conventional market such as the regulating services. For example the economic assessment of the ecosystem services provided by a coastal wetland in North Sri Lanka (Emerton and Kekulandala 2003) revealed the most substantial benefits that accrue to a wide group of the population as well as to economic actors are related to the regulating services such as the flood preventing capacity of the native wetland (1907 US$ per hectare and year) and the industrial and domestic wastewater treatment (654 US$ per hectare and year), whereas the several provisioning services such as agriculture, fishing and firewood, which directly contributed to the local income presented only 150 US$ per hectare and year. Coastal wetlands in the USA are estimated to currently provide US$ 23.2 billion per year in storm protection services alone, whereas large areas of such wetlands have already been lost. A loss of one hectare of those wetlands is estimated to correspond to an average increase in storm damage of about US$ 33,000 (Constanze et al. 2008).

89. This project will put women at the center of the initiative (please see below the section on gender mainstreaming). The project will focus on gender sensitive planning and implementation to ensure full sustainable development potential. At least 50% of the project beneficiaries will be women, especially within the agriculture sector where women often make up the majority of smallholder farmers and are most vulnerable to climate shocks and variability. Gender-sensitive methods, including household surveys that take into account gender sensitivities and target both men and women, will ensure that women are beneficiaries of climate information and early warning systems established. Women would also need to be able to access climate information as easily as men – even if it is through differing media – otherwise there is the risk of the information either not being used at all or not being fully understood by women. Therefore, the communication channels will be developed with special attention to the needs of women.

Environmental Impacts of the proposed project

90. In the long term, the expected outcome and impact of the project is that ecosystem functions and associated hydrological and ecological benefits of wetlands will be fully restored. The project is expected to yield positive environmental impacts that will contribute to Uganda's obligations as a contracting party to several environment protocols and conventions, including the Ramsar Convention on wetlands. Key environmental processes such as nutrient re-cycling, vegetation succession, water levels and flow patterns, climate modulations, carbon sequestration, climate change adaptation and mitigation, and biodiversity conservation will be enhanced.

Gender mainstreaming and other special impact assessment

91. Gender issues will be mainstreamed at all levels during the project implementation in order to ensure promotion of gender equality and women empowerment. With respect to the gender element, it is worth noting that women are a very important group under this project; so is their role in the management and protection of natural assets (water, forests, fish and wildlife). Furthermore, women, children and the elderly are frequently amongst the more vulnerable of the poor. In the face of climate change, their vulnerability will likely be exacerbated. Hence, women will not only be a key beneficiary of adaptation measures under this project, but they will also play a leading role in promoting the mainstreaming of adaptation measures into the local economy. Furthermore, as previously explained, project indicators will be

disaggregated by gender where applicable and gender concerns incorporated in the planning of specific activities. Women will be involved in all aspects of the project, and will benefit more specifically from:

- Improving wetland management skills: Although women have limited access to information and education, they are often knowledgeable in the management of natural resources. The project will further improve their management skills and identify and address any wetland management skills gaps.
- Increasing water availability: GCF funds also aim to increase water storage and promote sustainable water use through the construction of small-scale water storage and detention facilities. In addition, beneficiaries will benefit from rainwater harvesting. This will particularly benefit women beneficiaries by reducing their workload, specifically related to fetching water for household consumption and irrigation.
- Strengthening of alternative livelihoods: GCF resources will offer an equal number of men and women skill training for employability in tourism, health and construction, etc. Training in managerial and entrepreneurial skills for small-scale wetland enterprises will also be provided. These training programmes will diversify the livelihoods of communities and reduce their vulnerability to climate change.

Expected socio-economic impacts

92. It is expected that there will be increased value addition to wetland goods and services. This will not only enhance societal livelihood but also increase the participation by all gender groups, in turn leading to enhanced and resilient livelihoods. Practical income generating activities and adding value to wetland products, for instance through trademarks or improved market access, will be promoted. This will be accompanied by community training in managerial and entrepreneurial skills for small-scale wetland enterprises. Livelihoods improvements will include enhanced agricultural and farming output and income, as well as income generating activities for beneficiaries that will increase income by at least 100%. Many empirical studies on valuating different ecosystems services in different regions in the world have been conducted. They helped revealing the relative importance of several ecosystem services especially those, which are not traded in conventional market such as the regulating services. For example the economic assessment of the ecosystem services provided by a coastal wetland in North Sri Lanka (Emerton and Kekulandala 2003) revealed the most substantial benefits that accrue to a wide group of the population as well as to economic actors are related to the regulating services such as the flood preventing capacity of the native wetland (1907 US$ per hectare and year) and the industrial and domestic wastewater treatment (654 US$ per hectare and year), whereas the several provisioning services such as agriculture, fishing and firewood, which directly contributed to the local income presented only 150 US$ per hectare and year. Coastal wetlands in the USA are estimated to currently provide US$ 23.2 billion per year in storm protection services alone, whereas large areas of such wetlands have already been lost. A loss of one hectare of those wetlands is estimated to correspond to an average increase in storm damage of about US$ 33,000 (Constanze et al. 2008).

E.4. Needs of the Recipient

Vulnerability and financing needs of the beneficiary country and population

E.4.1. Vulnerability of country and beneficiary groups (Adaptation only)

93. Uganda, is a low income economy (as listed in the GCF paper on Level of Concessional Terms for the Public Sector) and is classified as a least developed country. Uganda has an urgent need for wetland restoration considering the current reduction in the ecosystem services provided by wetlands. There is also limited capacity of the local communities to adapt to climate change impacts using advanced technology, hence these communities mainly rely on natural ecosystems. The current assessments for Uganda illustrate the need for financing support to expand on the area planned for restoration. Uganda's approved budget for 2009/10 was USD 2.1 billion with a projected budget of USD 2.02 billion for 2010/11. 2.6% was allocated to the water and environment sector in the 2009/10 budget and there was a 3.4% projected increase in the 2010/11 budget. The allocation of 3 billion Ugandan shillings to the wetlands management department within the Water and Environment Ministry is below 0.04% of the budget and less than 0.008% of the GDP for that year. Some of the most vulnerable people live around the wetlands and benefit from various ecosystem services, such as water, reeds, fish, etc. With increased variability in weather due to climate change, subsistence farming is becoming increasingly challenging and the dependence on functioning ecosystem services more and more important for food security and basic survival.

94. In this regard, GCF will provide resources for restoration of critical wetland systems in eastern and southwestern Uganda. Catchments restoration activities (such as reforestation, improved agricultural practices, and sustainable land management) will improve the health of the wetlands by increasing the amount of water collected in the catchments. GCF funds will also contribute to identifying and supporting alternative livelihoods for communities that are adjacent to

the wetlands, which is not feasible under the national budget. In addition, the project will address the capacity gaps and institutional issues related to sustainable wetland management. This project is critical for the beneficiaries to adapt to climate changes impacts.

E.4.2. Financial, economic, social and institutional needs

95. This project aims to improve the income opportunities of subsistence farmers (men and women) as well as increase the skill set of vulnerable communities to access employment or engage in income generating activities. The gender balance between men and women, will benefit the entire segment of the communities living in and around the wetlands. By helping the beneficiaries diversify their crops, improve their skills, access micro-credit and start micro and small enterprises, GCF resources will contribute to reducing food insecurity, but also to the general economic and social development of the target beneficiaries. It must be noted that without this intervention subsistence farmers in and around the target wetlands will not be able to implement crop diversification, and diversify their income to adapt to climate change risks and impacts.

96. The National Climate Change Policy prioritizes the need for strengthening the institutions and implementation capacity, but also the ability for the individual sectors and ministries to integrate climate change risks and impacts into their routine development planning, budgeting and execution. UNDP, through this initiative, will continue to build the capacity of the Ministry of Water and Environment and the Ministry of Agriculture by providing technical skills for better understanding the risk and opportunities from climate change. Standard operating procedures to strengthen the financial accountability and delivery mechanism, as well as accountability will also be provided to the concerned institutions.

E.5. Country Ownership

Beneficiary country (ies) ownership of, and capacity to implement, a funded project or programme

E.5.1. Existence of a national climate strategy and coherence with existing plans and policies, including NAMAs, NAPAs and NAPs

97. The project's thematic areas are in line with the priorities outlined in Uganda's National Climate Change Policy, the Strategic Plan, National Adaptation Programme of Action (NAPA), as well as its emerging National Adaptation Plan. In addition, the project is aligned with the existing functions and expectation of the Wetlands Management Department in Uganda as well as line Ministries such as Agriculture, Animal Industry and Fisheries and Directorate of Water Resources Management. Further, the process for developing this detailed project proposal included a series of in depth consultations conducted between 24th June and 20th July 2015 with target stakeholders (see E.5.3 below for more details).. Due to this comprehensive consultation process, this initiative has the greatest support possible in Uganda, with the Ministry of Water and Environment spearheading the project. Time and resources in the form of consultative workshops have demonstrated that the Government of Uganda owns this project at the highest level. Further, the National Designated Authority attended both of the national consultation workshops, and was deeply involved in the planning and design of the project proposal.

E.5.2. Capacity of accredited entities and executing entities to deliver

98. UNDP is one of the world's largest brokers of climate change grants for developing countries, with a current portfolio of USD 1.34 billion in mitigation and adaptation grant-financed projects in over 140 countries, supported by co-financing of USD 6.7 billion. This proposed project is aligned with UNDP's comparative advantage in the area of ecosystem restoration, capacity building, technical and policy support as well as expertise in project design and implementation. Specifically, the GCF project will build upon UNDP's comparative advantages which includes experience working with governments and communities in Uganda and globally in: i) establishing and strengthening institutional, policy and legislative mechanisms; ii) building capacity; iii) undertaking risk assessments; iv) mainstreaming climate change adaptation, disaster risk reduction and early warning systems into development planning; and v) harnessing best practices and community-based approaches across different thematic areas for climate change adaptation and disaster risk reduction. This includes experience with initiatives focused on transferring knowledge and technology via south-south cooperation.

99. The UNDP country office in Uganda is well placed to oversee the implementation of the GCF project. This is because it has built close connections with the MWE including Uganda National Meteorology Authority (UNMA), and Directorate of Water Resources Management (DWRM), Wetlands Management Department and National Environment Management Authority (NEMA), through implementation of many natural resources management and climate change

adaptation initiatives including climate information and early warning systems project support in the country. UNDP also leads the United Nations Country Team (UNCT) Task Force on disaster risk reduction (DRR) to promote collaboration on DRR issues among various UN agencies. The approach ensures synergies on DRR issues between different agencies and facilitates support to the national government in a coordinated manner. In Uganda, UNDP has facilitated the review of the National Environment Management Policy to integrate climate change and the inclusion of DRR and early warning system aspects into the National Development Plan (NDP) as well as contributed towards the development and subsequent approval of the National Disaster Risk Reduction and Management Policy. In addition, UNDP supported piloting community based wetland protected areas in the Wetlands of lake Opeta-Bisina and Lake Nakivale ecosystem. This pilot resulted in integration of wetland areas into the wider protected area systems of Pian Upe in North Eastern Uganda and Lake Mburo National Park. Through this initiative, community wetland Management action plans and a community environment fund model was developed. These two models have now been scaled up in River Rwizi wetlands and catchment as a mechanism for providing economic incentives towards responsible environmental management behavior at community level.

100. More recently, UNDP has been focusing its efforts on supporting ecosystem based adaptation approaches in Mt. Elgon System, strengthening a territorial approach to climate change in Mbale region, development of a national Wetlands Atlas in collaboration with UNEP as a decision making tool for improved wetland management in Uganda, Low Emission Capacity Building support, and strengthening climate information and early warning systems. Through the UNDP supported project on strengthening natural resources, climate change, public-private sector partnership models have been developed on Nakayiba and Lubingi wetland systems including development of management plans. These UNDP supported projects and programmes focus on building resilient communities and wetland ecosystems and align well with the GCF project and strong links will be achieved between the projects to share lessons learned on how to improve and expand livelihood options that increase community resilience while at the same time protecting wetland ecosystems services and goods in Uganda.

101. UNDP's strategic positioning on natural resources and climate resilience building Uganda is informed not only by its comparative advantage but also by its global leadership position – in particular South-South cooperation – on sustainable land management and strengthening natural resources management as a critical element in increasing climate change resilience. UNDP has a high level of experience in managing climate resilience and ecosystems management projects in the region, in particular those with disaster management, early warning and climate change adaptation components. It is also informed by UNDP's working principles of optimising resources and capacities through multi-sectoral and multi-stakeholder driven partnership approaches. This is the approach UNDP has been using in Uganda in particular through its DRR and natural resources management projects. The country office in Uganda has a fully-fledged Environment and Energy Team comprising of a Team Leader with an MBA and MSc, a Programme Analyst, a Programme Officer, a Programme Associate as well as two dedicated SGP programme staff and additional project level coordinators supported by Regional Technical Advisors at UNDP offices in Addis Ababa, as well as by policy, adaptation, economics and climate modelling experts in New York and Bangkok.

102. The project will build on Uganda's extensive track record in implementing early warning systems and enhancing livelihoods (including ongoing UNDP supported projects). The project will be implemented by national institutions using UNDP's National Implementation Modality, which is designed to ensure domestic systems are used for accountability. The interventions through this project will be compliant with the Fund's social and environment assessment and with stakeholder consultations. UNDP's work programme in Uganda directly contributes to this sub-component. This is illustrated in the most recent Country Programme Document (CPD), which prioritizes two areas under its inclusive economic development portfolio: (a) natural resources management, adaptation and developing resilience to climate change and disaster risk, and (b) green growth, expanding livelihood and employment opportunities including supporting the integrated approach to fostering sustainability and resilience for food security.

E.5.3. Engagement with civil society organizations and other relevant stakeholders

103. This project has undergone comprehensive stakeholder input (see Annex VII) including approval by the Joint Water and Environment Sector Working Group meeting as required by the government policies and procedures for approving development Projects. The Sector Working Group consists of both development partners and government agencies in the sector. Following the Sector Working group endorsement of the project concept, a draft proposal was prepared and presented to the multi-stakeholder GCF workshop on 24th June 2015 in Kampala. This workshop discussed the project concept in detail, with stakeholders providing inputs for project proposal development, as well as

endorsement of the project concept. The multi-stakeholder workshop was organized by the Ministry of Water and Environment in collaboration with Ministry of Finance, Planning and Economic Development with support from UNDP. The stakeholders consisted of development partners such as DFID, EU, World Bank, French Development Agency, Royal Netherlands Embassy and GIZ; civil society, private sector and government agencies. Following this workshop, a situational analysis was done in South Western and Eastern Uganda, covering at least 16 districts. During this analysis, a series of consultations were undertaken in each of the target districts with community members and representatives, district political, administrative and technical staff, as well as representatives from sub-counties in these districts. The consultations introduced the proposed project to district stakeholders, while also seeking views on social and environmental issues to be considered by the project. As part of the process, specific needs were captured from the different districts to identify the priority activities to be included in the project proposal. Finally, a follow up consultative workshop was held 9-10 July, 2015 for district political and technical officers from the target districts to discuss the draft proposal. A final Wetland Advisory Group and Local Partner Advisory Committee meeting was held on 20th July to endorse the project for submission.

104. This GCF funded initiative will build on the on-going National Wetlands Management project. The development of this full project proposal involved detailed consultation and stakeholder engagement. Consultations were attended by national operational focal points, government departments, NGOs, and civil society organizations. The stakeholder retreat was attended by government departments that were identified as key stakeholders in the wetlands. An extensive consultation process was undertaken from 24th June, 2015 to 20th July, 2015. This included a GCF Stakeholder Consultation (24 June, 2015), a district-level situation analysis and consultation done in South Western and Eastern Uganda, covering at least 16 districts (28th June – 4th July) where beneficiary communities and representatives from the district were consulted, and a Consultative workshop for district political and technical officers from the target districts (9-10 July, 2015), and a combined Wetlands Advisory Group and Local Partner advisory Committee consultation (20 July, 2015). Communities within and adjacent to the proposed project area were mobilized and engaged in discussion with the intention of giving them chance to bring out their concerns. The engagement process was intended to secure the buy-in from the communities and other stakeholders prior to the proposed restoration of degraded wetland areas.

Areas that were tackled during the engagement include;

- Increasing awareness of the local communities and local leaders of the need to restore degraded wetland in the two project areas in order to enhance both the community and environmental benefits in conformity with existing policies and legislation;
- Averting the possibility of future conflicts related to the restored wetland areas.
- Preparing the local leaders and communities for their active participation in project implementation
- Building synergies and paving way for the smooth implementation of the project

A participatory approach was used where the members were given a chance to make their comments and ask questions. This was carried out at the proposed project sites in all the districts. However it should be noted that community engagement is a dynamic and continuous process that takes place even during project implementation.

The “high” level of risk factor 5 – lack of commitment from local communities, was a mistake in the original project proposal. Given the active engagement by local stakeholders in the project development phase (illustrated through the above-mentioned consultations) as well as the expected participation in the design, implementation and monitoring of the project activities, this is not considered a high risk factor. There are extensive sensitization and public awareness activities also built into the project to ensure community engagement will not pose any risk to project implementation. The risk level will be reduced to low. This has been adjusted in section G.2.

Again, the consultation process ensured country ownership as part of this project design process, including review and endorsement by the Water and Environment Sector Working group. The NDA specifically participated in these consultations, which discussed details of the project proposal.

E.6. Efficiency and Effectiveness

Economic and, if appropriate, financial soundness of the project/programme

E.6.1. Cost-effectiveness and efficiency

105. The proposed project entails grant financing in the amount of USD 25.3 million. The funding is adequate for the scope of the project, for establishing infrastructure, capacity and an enabling environment (addressing institutional barriers) for generations, and for the use of effective, reliable, and sustained interventions and services for resilient ecosystems and livelihoods. The funding estimate is calculated based on previous projects including JICA (USD 5 M, IDRC; USD 350,000, COBWEB; 800,000).

106. The project contributes to aversion of economic and financial losses related to the consequences of wetland degradation, such as floods and drought. These losses can significantly impact the GDP of the country. The project facilitates the establishment of revenue streams for the Wetlands Management Department, hence ensuring financial viability and efficiency of service delivery. The project will also mobilize additional stakeholders and partnerships to create viable business models for efficient and effective market-based delivery of climate information and services (such as insurance and finance products).

107 Projects are said to be **economically efficient** when the value of economic benefits flowing from their implementation (i.e. project economic benefits) are judged to be at least as great as the value of what society has to give up for their implementation (i.e. project economic costs).

108. To estimate the value to society of a project designed to restore degraded wetlands, two main classes of benefits could potentially be considered, where benefits are defined as the value of ecosystem services (ESS) society enjoys from functional wetlands. The first class consists of economic benefits society derives from provisioning ESS. The per hectare value of provisioning ESS from Uganda wetlands were estimated by Emerton, Iyango, Luwum and Malinga (1998) at Uganda Shillings (Ushs.) 12,348,756 per ha pear year distributed as follows: sugar cane production (1,800,000 Ushs./ha/year), coco yam production (785,500 Ushs./ha/year), cassava production (785,800 Ushs./ha/year), mirror carp production (1,868,819 Ushs./ha/year), tilapia production (319,232 Ushs./ha/year), papyrus production (4,285,714 Ushs./ha/year) and brick-making (2,500,000 Ushs./ha/year). The second class consists of economic benefits society derives from intermediate ESS. Emerton, Iyango, Luwum and Malinga (1998) also provide per hectare estimates of the following intermediate ESS provided by Uganda wetlands: water treatment and purification, sewage treatment, and water channel outflow.

109. It is generally recognized in the environmental economics literature that relative to provisioning ESS, the modeling of intermediate ESS is not only very complicated but the methods used for their measurement are contentious. The literature also recognizes that the modeling of provisioning ESS is relatively straightforward and the values deriving from their measurement much less contentious. It is for this reason that in evaluating the economic efficiency of this project, we conservatively limited project benefits to wetlands provisioning ESS.

110. The economic net present value of the proposed investment project has been estimated to reach approximately US$61.4 million and to yield an economic internal rate of return of approximately 22.6%. This is expected to be an under-estimate as assumptions made in the economic analysis are conducive to under-estimating the true economic value of the proposed investment project. Sensitivity analysis shows the NPV to be robust to both increases in estimated economic costs and decreases in estimated economic benefits. As such, the proposed investment project is deemed to be economically efficient.

111. An objective approach to assessing the cost-effectiveness of the proposed project is to ask: "*suppose the project is not implemented. What would it cost wetland dependent communities in Uganda to obtain the following welfare enhancing provisioning ESS, assuming they are not to be relocated? Sugar cane, coco yam, cassava, mirror carp, tilapia, papyrus and mud for brick-making?*" Recall the BCA of Section F1 only considers provisioning ESS, which underestimates the true value of the benefits society receives from rehabilitated wetlands. To be objective we must also ask the same question about intermediate ESS: "*suppose the propose project is not implemented. What would it cost wetland dependent communities in Uganda to obtain the following welfare enhancing intermediate ESS assuming they will not be relocated? Water treatment and purification, sewage treatment, and water channel outflow?*"

112. If wetland dependent communities were to be relocated, it is easy to qualitatively appreciate why the proposed project is likely to be cost effective. If the communities were not to be relocated, the likely alternative sources of supply for the provisioning ESS would be importation (locally or abroad) over the 50 years the proposed project is projected

to be in existence. Alternatives for the intermediate ESS would involve investing expensive capital equipment that has to be maintained over 50 years. The TEEB for National and International Policy Makers (Box 9.3: cost-effectiveness of protection over engineered solutions: example of a US watershed) provides a compelling case to the effect that it is very expensive to substitute reproduced for natural capital. It is also easy to qualitatively appreciate why the proposed project is likely to be cost effective in the event the wetland dependent communities are not relocated.

E.6.2. Co-financing, leveraging and mobilized long-term investments (mitigation only)

117. N.A.

E.6.3. Financial viability

113. The GCF grant resources being sought for this project help remove the barriers to support investments that due to the primarily public good nature do not entail revenue generation or cost recovery during the project duration. The financial and technical barriers in Uganda that prevent setting up of an enabling environment for wetlands restoration, physical restoration of degraded wetlands and strengthening access to reliable climate and early warning information in the country can only be removed by public investment financed by grant resources from international development institutions. As such, the public goods nature of this project's outputs doesn't entail revenue generation or cost recovery from the project's direct and indirect beneficiaries during the project duration. Hence, a detailed financial analysis of this project isn't deemed pertinent.

114. Uganda's private sector that is directly affected by wetlands degradation and/or has direct incentives for restoration of wetlands ecosystems and obtaining early warning information currently comprises mainly of individual farmers from vulnerable communities or micro- small and medium-sized enterprises (MSMEs). It is difficult to envisage generating revenues or recovering project investment costs or co-financing from these groups for this project. However, the project does plan to engage with the agricultural communities (Sub-component 2) farming in the wetlands areas that are to be restored, by imparting improved agricultural practices, climate-smart technologies, developing entrepreneurial skills and providing access to micro-credit and revolving funds. These project activities, while strengthening these communities' and the wetland ecosystem's resilience, will also enhance livelihoods and income generation capacities of these vulnerable communities, thereby increasing their willingness to pay for such ecosystem services at a later time, perhaps beyond this project's implementation duration. The project also aims to engage with the private sector in disseminating climate and early warning information by engaging with the country's ICT/telecom industry (Sub-component 3), which is private sector driven. This might stimulate demand for climate information-based value added products and services from agricultural communities and MSMEs in the project's target area in future, which, in turn, might generate revenues and co-financing from them in the medium- to long-term, thereby supporting the project's financial sustainability beyond its proposed duration, which is also mentioned in the project's 'Exit Strategy' (Section D.2). Nonetheless, such revenues from the private sector are highly speculative at this point and hence, in accordance with the UNDP's Guidelines for Financial and Economic Analysis of projects, a financial analysis of this project isn't included.

E.6.4. Application of best practices

115. This project is up-scaling the best practices, lessons learned and community plans of the COBWEB project implemented in southwestern and northeastern Uganda. Some of the best practices incorporated from the COBWEB project include:

- **Community based approaches**: Community based approach and involvement of all the stakeholders are the preferred approaches for the success of such a project. Stakeholders, particularly local communities (subsistence farmers, pastoralists, and commercial farmers), are the primary wetland users and the primary beneficiaries of sustained wetland ecosystems. Getting communities involved in project activities is a lesson learnt in order to promote the sustainability of project wetland conservation activities. In addition, the proposed project will work with the GoU and the private sector to increase tourism revenue (where applicable) and create opportunities for communities to benefit from wetland based eco-tourism enterprises. Hence, the project will develop relationships with the Uganda Tourism Board (UTB) and the Uganda

Community Tourism Association (UCOTA). Furthermore, involving government institutions is recommended so that lessons learnt and best practices are included in policies, plans and strategies.

- **Wise-use of biodiversity**: Wise-use interventions that have livelihood benefits are quicker to promote for adoption by communities. It has been shown in the COBWEB project that ecotourism undertaken by communities is a best practice to protect wetland habitats and biodiversity. This best practice involves communities guiding visitors to watch birds, take canoe rides, do sport fishing, scenery viewing, and biodiversity research. These wise-use activities have minimal to no impact on biodiversity and generate additional income for participating communities. This project will scale up these activities and ensure that the implementation of sustainable use strategies and the maintenance of biodiversity are positively correlated. Further, the project will rely on the contribution of communities towards monitoring and patrolling of lakes to increase community involvement and reduce conservation costs. It has been shown that communities demarking their own conservation areas and formulating management guidelines is a best practice to guide wise-use of wetland resources.
- **Increasing income opportunities at the household level**: At the household level, the project will increase communities' income levels by increasing fish yields with the use of the right sized nets and by improving food production via soil and water conservation measures. It has been reported that at Lake Nakivale CCA, Banana production has been increasing due to soil and water conservation measures in combination with improved farming practices (COBWEB project). The proposed project will also ensure the protection of wetland sections known as major fish breeding grounds. It has been shown that the construction of boats to monitor illegal fishing and encroachments in these areas has improved conservation efforts. However, apprehending fishermen involved in illegal fishing has proven to be a difficult task for communities. Hence, it is recommended that local police be sensitized to biodiversity conservation to take proper action against illegal fishermen and thieves.
- **Mainstreaming gender:** By ensuring women participation in community-based organizations in all conservation areas, the COBWEB project empowered women and in turn helped improve their family's socio-economic status. It has been shown that most women spent their income on their children's health and education. Likewise, the proposed project will empower women by ensuring their participation in training related to various agro-based, livestock and fisheries products to establish small businesses.

E.6.5. Key efficiency and effectiveness indicators

GCF core indicators	Estimated cost per t CO_2eq, defined as total investment cost / expected lifetime emission reductions (mitigation only)
	N.A.
	Expected volume of finance to be leveraged by the proposed project/programme and as a result of the Fund's financing, disaggregated by public and private sources (mitigation only)
	N.A.

Other relevant indicators (e.g. estimated cost per co-benefit generated as a result of the project/programme): N.A.

F.1. Economic and Financial Analysis

Programming of wetland restoration target

116. The degradation of wetlands and their associated ecosystem services in Uganda is negatively affecting the livelihoods of the people living in and around the wetlands – around 4,000,000 people. Over 80% of the people living adjacent to wetland areas in Uganda directly use wetland resources for their household food security needs.[14] This project seeks to support the Government of Uganda to take climate change issues into account in the management of critical wetlands. The barriers that need to be overcome are:

- the limited technical knowledge on the agro-ecological and hydrological systems of the wetlands;
- insufficient extensions services for resilient agriculture and livelihoods; and
- Inadequate climate information and early warning systems.

117. This project will restore wetlands and their eco-system services with sustainable land management practices and reforestation, will support resilient agricultural practices and alternative livelihoods to reduce the pressures on the wetlands, and finally will strengthen the climate information and early warning systems to communities. Under a set of reasonable assumptions, the economic analysis demonstrates the social desirability of the proposed project even in circumstances where the true net economic value of the proposed project is expected to be under-estimated.

Basic Approach and Methodology

118. The total benefits of the proposed investments as outlined in the project proposal can be categorized into:

- **Provisioning ecosystem services (ESS).** The economic benefits society will derive from provisioning ESS include the use of rehabilitated wetlands areas to support agriculture (e.g. production of sugar cane, coco yam and cassava), fisheries (e.g. production of mirror carp and tilapia), papyrus and the brick-making industry.
- **Indirect ESS**. The economic benefits that society will derive from indirect **ESS** include (but are not limited to) the role of rehabilitated wetlands in water treatment and purification, sewage treatment, and water channel outflow control. In the language of the Millennium Ecosystem Assessment, these indirect ESS include regulating services, cultural services, and supporting services.[15]

For purpose of conducting the economic analysis of this investment project, we solely include the economic value of protecting and/or restoring the provisioning ESS provided by rehabilitated wetlands. In the environmental economics literature, such value is categorized as direct consumptive use value and its estimation is generally simple, unlike the estimation of the economic value of indirect ESS.

Ignoring the economic benefits of restoring indirect ESS, the estimated benefits of the investment project included in the economic analysis are expected to significantly under-estimate the true benefits of the investment project.

119. The economic analysis of the proposed project was carried out in accordance with the Guidelines for the Economic Analysis of Projects of United Nations Development Program (UNDP 2015). The economic efficiency of the investment was determined by computing the economic net present value (NPV) with an assumed 10% discount rate and economic internal rate of return (IRR). All proposals supported by UNDP have opted to use a 10% discount rate, in line with the existing practice of multilateral development banks.

[14] Kakuru, Willy, Nelson Turyahabwe, and Johnny Mugisha. 2013. *Total Economic Value of Wetlands Products and Services in Uganda*, *The Scientific World Journal*, Volume 2013.
[15] Millennium Ecosystem Assessment. 2005. *Ecosystems and Human Well-Being: Wetlands and Water Synthesis*. World Resources Institute, Washington, DC.

120. Economic values (costs and benefits) are all measured in real terms of 2014. Economic costs of the project are net of taxes, duties, and price contingencies. Furthermore, the analysis assumes a shadow wage rate of 1.00 for unskilled and semi-skilled labor in Uganda. Provided that the economic cost of labor in Uganda is expected to be lower than the market wage rate (financial cost), we expect this assumption leads to significantly over-estimating the economic cost of the project, and under-estimating the true net economic value of the project. For example, in a recent cost-benefit analysis of road investment projects in Uganda, a shadow wage factor of 0.83 was used for unskilled and semi-skilled labor. [16] Similarly, in a 2006 procedural guidelines, Uganda's Ministry of Works, Housing and Communication then estimated a shadow wage factor of 0.78 for semi-skilled labor in Uganda.[17]

121. As is common when undertaking the economic analysis of investment projects, numerous assumptions were used to delineate the "with project scenario" from the "without project scenario". These assumptions are presented and discussed in Annex XII of this proposal. Assumptions were made so as to under-estimate the true net economic value of the proposed investment project.

Net Present Value and Sensitivity Analysis

122. The project's economic net present value (NPV) over a 25-year period is estimated to be US$61.4 million with an economic internal rate of return (IRR) of 22.6%.

123. Results from sensitivity analysis suggest the conclusion that this project is socially desirable is robust. For example:

- If we assume a 20% increase in costs over the base case, the project's NPV is US$56.0 million and its IRR is 20.4%.
- If we assume a 20% decrease in benefits over the base case, the project's NPV is US$43.7 million, with an economic IRR of 19.9%.
- If we assume a simultaneous 20% increase in costs and 20% decrease in benefits, the project's NPV is US$38.4 million and its economic IRR is 17.9%.

Other Benefits

124. Some benefits of this project were not included in this analysis due to lack of data. These benefits include among others, (i) the intermediate services of wetlands including the role of rehabilitated wetlands in water treatment and purification, sewage treatment, and water channel outflow control, (ii) increased skills for employability and entrepreneurship capacity to start new businesses, and (iii) accurate and reliable climate information which will have a transformational impact on people's lives in the targeted areas.

Project Beneficiaries and Distribution of Benefits

125. While the results and impacts of the proposed project are expected to eventually spread countrywide, the proposed project is expected to improve the lives of some of the most vulnerable people in Uganda dependent on subsistence agriculture and wetlands for their livelihoods.

126. This follows from the observation that the areas targeted by the proposed project are South Western Uganda (6 districts of Kabale, Kisoro, Kanungu, Rukungiri, Greater Bushenyi and Ntungamo) and Eastern Uganda (10 districts of Pallisa, Kibuku, Bukedea, Namutumba, Butaleja, Budaka, Tororo, KaliroNgora and Mbale) with a total population of 3,946,366 people and land area of 13,000 Km2. At least 800,000 people in and around wetlands will directly benefits from the proposed investment.

[16] Crossroads. 2014. *Building the Evidence Base for more Labour-Intensive Road Work Contracts and Increased Employment Opportunities for Women*. Prepared by M&E Associates.
[17] Republic of Uganda. 2006. *Procedural Guide to Economic Road Feasibility Studies.* Ministry of Works, Housing and Communication, Road Agency Formation Unit.

F.2. Technical Evaluation

127. For output 1, an integrated sustainable land management approach will be adopted, which include reforestation of indigenous species, erosion control, and drainage and water storage for ground water recharge. The management plans for the wetlands will be developed through a participatory process with the local stakeholders in order to maintain the biological diversity and productivity of the wetlands and to allow wise use of their resources by human beings. The structure of the plans will be developed according to Ramsar guidelines for the development of management plans. In order to achieve an overall agreement between the various stakeholders and decision makers, an iterative step by step approach will be carried out to finalize the plan for the 16 districts. The next step will be the preparation of the management plan on the basis of regular workshops with the relevant local and regional stakeholders. The members of these working groups will discuss the content and focus of the management plan and develop it in further detail. In addition public presentations and hearings took place. As a final result concerted management plans for each project area covering a period of five years will be presented to the public and handed over to the competent administrations with the demand to approve the management plan officially and to start the implementation. The constructed wetland buffer zones with autochthonous plants, mainly bulrush and reed species will be implemented, which will quickly develop into an attractive wildlife habitat. Plantations of various indigenous species because these plants are perfectly adapted to the climate conditions in the wetlands will play a crucial role on limiting soil erosion and water retention. A very important target of the project is the exchange of experience between the partners and stakeholders in the two project areas and the MWE. The exchange of know-how will be extended to include other organizations involved in management of wetlands and lakes in Uganda.

128. For output 2, a detailed market study will be conducted that identifies the opportunities for employment as well as for entrepreneurship leading to small and micro enterprises. This market study will inform the project on the skills training that will lead to employment and the type of products and services that have potential for small businesses. Beneficiaries will be organized in self-help groups to facilitate the access to microfinance and promote women empowerment. Beneficiaries will be screened between those willing and capable of receiving training on business development including business planning, accounts, stock management, etc; while the others will receive employable skills such as cell phone repair, assistant nursing, construction work. Value chains will be identified and improved by transforming agricultural products into higher value items such as jams, juices, floor, pickles, etc.

129. For output 3, a systematic approach to project design will be used, starting from the types of services which are envisioned and required by farmers (assessed through local consultations and assessments). Particular attention will be paid to the content, presentation and ability to interpret key messages and information, including use of language and simple non-technical visualizations. A key requirement will be to ensure that all weather/climate information is contextualized with other relevant social and environmental information (e.g. current market prices, crop status, access to markets and storage facilities etc), as well as constrained where necessary by scientific limitations on predictability and scale. Areas where observations are currently sparse and limit the ability to provide the basic weather/climate data required to build services/warnings and information products will be identified. The benefits of placing extra equipment (e.g. automatic weather stations, hydrological water level/flow sensors) in these areas will be evaluated, and if suitable (taking into account operations and maintenance costs and the capacity of UNMA to service equipment), new equipment will be installed. In areas where flooding and short-term extreme rainfall can be dangerous and lead to loss of life, assets and/or crops, the introduction of community-based automatic reporting stations (sending directly to village and community leaders) will be undertaken. If rainfall intensity monitoring is required with short-lead times (hours or less), lightning sensors and derived products will be considered as alternatives to weather radar (being expensive to operate and maintain) in order to identify severe weather which may lead to flooding and loss of life. The applicability of the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and Flash Flood Guidance System (FFGS) will be assessed and access to relevant data ensured, as well as its integration into other decision support systems and tools.

F.3. Environmental, Social Assessment, including Gender Considerations

130. This project is compliant with UNDP's social and environmental screening procedure (see SESP attached as Annex VI). UNDP's Social and Environmental Standards were reviewed by the GCF accreditation panel and deemed sufficient to accredit UNDP to submit low and medium risk projects. The overall social and environmental risk category for this project is low as highlighted below. Specific project risks are listed in Section G below. Appropriate mitigation measures are included within the following section.

Environmental Impacts

131. A terminal evaluation of the "Extending Wetland Protected Areas through Community Conservation Initiatives (COBWEB) was conducted in 2013. The evaluation investigated previous works that were undertaken that are suitably similar in nature to allow a comparison with the potential environmental impacts associated with this project.

132. The project will have a number of environmental impacts which will be temporally restricted. During rehabilitation, it will be necessary to undertake earth works to re-stabilize the degraded wetlands. The earth works will remove sediment that is currently impacting on the wetlands operating effectively. These earth works will be limited to access into the wetlands and any movement of sediment. Additional artificial wetlands will also be created. To ensure that the sediment is not mobilized through either wind or more specifically rain events, it will be necessary to prepare an erosion control sediment plan. The plan should contain aspects including but not limited to the installation of sediment curtains to reduce sediment movement, covering sediment where practicable and using sediment for other works. There will be a cut and fill balance and therefore no additional soil etc. will need to be transported into the areas of works. All works should be undertaken in the dry season. Consistent with the project, rehabilitation works around the wetlands will also take place. All banks should be battered to ensure they are compacted and will not slump when inundated. Any additional sediment that is not required should be used within the existing catchment as topsoil as it is likely to be richer in nutrients than the existing topsoil.

133. Alternative cropping is also planned as part of activities for farmers. There is the potential for pest species to be brought in within seeds. Further, there is the potential for new crops to invade habitats in proximity to the farms through wind borne movement. To mitigate this impact, all alternative crops will be local provenance thereby mitigating adverse impacts. Weeds may affect the wetlands following construction. As no additional soil will be moved to the site, there is unlikely to be an additional impact as a result of non-native plants growing in the wetlands. To ensure that the rehabilitated wetlands do not "choke" through weed infestation, a weed control and maintenance plan will be developed to remove weeds and ensure the rehabilitation is effective. Overall, it is expected that the project will have limited environmental impacts and these can be mitigated effectively through appropriate management measures. The project will have significant environmental benefits in the short to long term through the improvement of water quality and a reduction in sediment movement. The social and environmental impacts of setting up a few automated weather stations will be very limited. The only environmental impacts associated with the installation of meteorological and hydrological infrastructure will be digging small (<100mm diameter) to place posts that will hold the infrastructure. The posts will be surrounded by a fence that will be 4 meters by 4 meters. To ensure no impacts occur such as erosion runoff, the installation will be undertaken during the dry season, thus reducing any potential loss of sediment into water courses as a result of rain. All meteorological stations are proposed to be constructed on land currently owned by the Government of Uganda. As such, there is no requirement for any form of land acquisition.

Social Impacts

134. There are limited social impacts associated with the project. Importantly, no people will be displaced or relocated. There will be a reduction in the availability of land for crop production through the construction of the wetlands; however carefully planning and stakeholder consultation will be undertaken prior to the construction and development of any new wetlands and the rehabilitation of existing wetlands. There will potentially be an impact on what farmers currently utilize being converted back into wetlands. To ensure there is limited impact on people, crop diversification is planned. This will improve the livelihoods overall of people working in and around the wetlands and increase their income potential. Where available, local people will be employed to undertake construction and

maintenance of the wetlands, thereby providing a social benefit to the community. Further, the wetlands will act as a buffer during flood and therefore reduce the potential loss of lives and assets.

Grievance Redress Mechanism

135. The project has developed a Grievance Redress Mechanism to ensure any complaints or concerns are fully addressed. The project allows those that have a compliant or that feel aggrieved by the project to be able to communicate their concerns and/or grievances through an appropriate process. The Complaints Register and Grievance Redress Mechanism set out in the Environmental and Social Management Plan and to be used as part of the project will provide an accessible, rapid fair and effective response to concerned stakeholders, especially any vulnerable group who often lack access to formal legal regimes. The Grievance Redress Mechanism utilizes existing frameworks that have been proven to work in Uganda through a two tier structure.

F.4. Financial Management and Procurement

136. The financial management and procurement of this project will be guided by UNDP financial rules and regulations available here: https://info.undp.org/global/documents/frm/Financial-Rules-and-Regulations_E.pdf.

Periodic financial reviews of project expenditures will be conducted to ensure funds were used for the purpose intended in the approved proposal. The project will apply international accounting financial reporting standards for the project reporting. Further guidance is outlined in the financial resources management section of the UNDP Programme and Operations Policies and Procedures available at https://info.undp.org/global/popp/frm/Pages/introduction.aspx. UNDP has comprehensive procurement policies in place as outlined in the 'Contracts and Procurement' section of UNDP's Programme and Operations Policies and Procedures (POPP). The policies outline formal procurement standards and guidelines across each phase of the procurement process, and they apply to all procurements in UNDP. See here: https://info.undp.org/global/popp/cap/Pages/Introduction.aspx

137. The project will be implemented following the National Implementation Modality (NIM) following NIM guidelines available here:
https://info.undp.org/global/documents/_layouts/WopiFrame.aspx?sourcedoc=/global/documents/frm/National%20Implementation%20by%20the%20Government%20of%20UNDP%20Projects.docx&action=default&DefaultItemOpen=1
UNDP has ascertain the national capacities of the executing entity by undertaking an evaluation of capacity following the Framework for Cash Transfers to executing entities (part of the Harmonized Approach to Cash Transfers - HACT).

138. The project will be audited in accordance with UNDP policies and procedures on audits, informed by and together with any specific requirements agreed in the AMA currently being negotiated with the GCF. According to the current audit policies, UNDP will be appointing the auditors. In UNDP scheduled audits are performed during the programme cycle as per UNDP assurance/audit plans, on the basis of the executing entity's risk rating and UNDP's guidelines. A scheduled audit is used to determine whether the funds transferred to the executing entity were used for the appropriate purpose and in accordance with the work plan. A scheduled audit can consist of a financial audit or an internal control audit.

G.1. Risk Assessment Summary

139. Several risks, probability of occurring and mitigation measures have been identified in the below table. The risks range from delay in the implementation of baseline projects to the lack of commitment from communities. The overall assessment of risk is low to moderate. Each individual risk has been evaluated and a mitigation measure to reduce the incidence of the risk on the project has been identified. The mitigation measures will focus on building awareness and sensitization, but also on building capacity at various levels of governance, all the way down to extension officers and communities. A participatory approach will be adopted in order to ensure community buy-in.

G.2. Risk Factors and Mitigation Measures

Selected Risk Factor 1

Description	Risk category	Level of risk	Probability of risk occurring
Delayed implementation of baseline projects by the government and donors negatively affects GCF project outcomes.	Technical and operational	Low (<5% of project value)	Low

Mitigation Measure(s)

Continuous sensitization of the policy makers based on evidence from the pilot sites to secure cooperation and commitment.

Selected Risk Factor 2

Description	Risk category	Level of risk	Probability of risk occurring
Installed hydro-meteorological equipment fails because it is vandalised or not maintained.	Social and environmental	Medium (5.1-20% of project value)	Medium

Mitigation Measure(s)

Awareness raising activities will be undertaken in target communities to highlight the importance of the installed equipment. In addition, the equipment will be housed within a secure fence.

Selected Risk Factor 3

Description	Risk category	Level of risk	Probability of risk occurring
Climate shocks occurring during the design and implementation phase of the GCF project result in disruptions to restoration activities and severely affect communities, prior to the EWSs being established.	Social and environmental	Low (<5% of project value)	Low

Mitigation Measure(s)			
Disaster mitigation and response activities will be prioritized at the target communities whilst the EWS is being established.			
Selected Risk Factor 4			
Description	Risk category	Level of risk	Probability of risk occurring
Variation and limitation in technical capacity will reduce the efficiency of the project implementation.	Technical and operational	Medium (5.1-20% of project value)	Medium
Mitigation Measure(s)			
Local communities and district environmental officer around the pilot sites will be trained in the design, planning and implementation of NWRP Project interventions. International experts will be engaged to assist local authorities in implementing NWRP Project interventions where national expertise is not available. Existing inter-ministerial climate change technical committee will be engaged to facilitate knowledge sharing and capacity building.			
Selected Risk Factor 5			
Description	Risk category	Level of risk	Probability of risk occurring
Lack of commitment from communities where restoration activities, alternative livelihoods and EWS are established undermines the effectiveness of the GCF project demonstrations.	Social and environmental	Medium (5.1-20% of project value)	Low
Mitigation Measure(s)			
Please describe how the identified risk will be mitigated or managed. Do the mitigants lower the probability of risk occurring? If so, to what level? The GCF project will avoid a 'top down' approach and seek to create community ownership of the project through community training and encouraging participation in project activities.			
Selected Risk Factor 6			
Description	Risk category	Level of risk	Probability of risk occurring
Political instability	Other	Low (<5% of project value)	Low
Mitigation Measure(s)			
A system of installments and disbursements against measurable outcomes and deliverables will be put in place to ensure that the funding is secure and any political instability does not affect the project impact.			

** Please expand this sub-section when needed to address all potential material and relevant risk*

H.1. Logic Framework.

Please specify the logic framework in accordance with the GCF's Results Management Framework and Performance Measurement Framework.

H.1.1. Paradigm Shift Objectives and Impacts at the Fund level[18]

Paradigm shift objectives	
Increased climate-resilient sustainable development	Please elaborate on the paradigm shift objectives to which the project/programme contributes.

Expected Result	**Indicator**	**Means of Verification (MoV)**	**Baseline**	**Target**		**Assumptions**
				Mid-term (if applicable)	Final	
Fund-level impacts						
A4.0 Improved resilience of ecosystems and ecosystem services	4.1 Area (ha) of habitat or kilometres of coastline rehabilitated (e.g. reduced external pressures such as overgrazing and land degradation through logging/collecting); restored (e.g. through replanting); or protected (e.g. through improved fire management; flood plain/buffer maintenance) 4.2 Area of agroforestry projects, forest-pastoral systems, or ecosystems – based adaptation systems established or enhanced	IE reports and ongoing project M&E documentation. Field impact surveys. Remote sensing images	483 ha (south western), 141ha Eastern) of wetland restored. 5000 ha of catchment restored 2000 ha of agroforestry	20,000 ha restored wetland 5,000 ha restored catchment 10,000 ha	64,370 ha restored wetland 11,630 ha restored catchment 35,000 ha	
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	1.2 Number (percentage) of households adopting a wider variety of livelihood strategies/coping mechanisms 1.4 Area (ha) of agricultural land made more resilient to climate change through agricultural practices (e.g. planting times, new and resilient native varieties, efficient irrigation systems adopted)	Field impact surveys, end of project independent evaluation reports. FAO statistics. Food security reports. Satellite remote sensing images.	150 hs (52% female) 30 ha	15,500 hs - 10% of hs (52% female) 4000 ha	75,000 hs - 50% of hs (52% female) 12,500 ha	

H.1.2. Outcomes, Outputs, Activities and Inputs at Project/Programme level

Expected Result	**Indicator**		**Baseline**	**Target**	

[18] Information on the Fund's expected results and indicators can be found in its Performance Measurement Frameworks available at the following link (Please note that some indicators are under refinement): http://www.gcfund.org/fileadmin/00_customer/documents/Operations/5.3_Initial_PMF.pdf

		Means of Verification (MoV)		Mid-term (if applicable)	Final	Assumptions
Project/programme outcomes	**Outcomes that contribute to Fund-level impacts**					
A7.0 Strengthened adaptive capacity and reduced exposure to climate risks	7.1 Use by vulnerable households, communities, businesses and public-sector services of Fund-supported tools, instruments, strategies and activities to respond to climate change and variability	IE reports and ongoing project M&E documentation. Field impact surveys.	1000 hs (52% female)	15,500 hs - 10% of hs (52% female)	75,000 hs - 50% of hs (52% female)	
	7.2 Number of males and females reached by [or total geographic coverage of] climate-related early warning systems and other risk reduction measures established/ strengthened		1300 females and 1650 males	30% of the target population receives accurate and actionable climate information and EW	70% of the target population receives accurate and actionable climate information and EW	
Project/programme outputs	**Outputs that contribute to outcomes**					
1. **Restoration and management of wetland hydrology and associated catchment**	Wetlands and natural grasslands rehabilitated	Local adaptation plans and monitoring results reviewed as part of APRs/PIR	525 ha	64,370 ha Wetland		Assumptions: Communities are willing to engage in EBA activities and see net benefits from it
	Surface areas restored, rehabilitated or enriched with grassed, herbaceous and wooded vegetation, reducing loss of top soil, protecting riverbanks and improving infiltration in critical areas	Project's periodic reports, validated by independent evaluations and reviews. Satellite remote sensing images.	7000 ha	11,630 ha Catchment		
2. **Improved agricultural practices and alternative livelihood options in the wetland catchment**	Percentage increase in agricultural incomes and alternative livelihoods in the project sites.	Field impact surveys, end of project independent evaluation reports	Determined during year 1 through field survey.	100% increase in agricultural incomes. 50,500HHs		Farmer acceptability of risky adaptation measures may limit project implementation.
	Number of women involved in livelihoods and employability interventions in the project sites.			At least 50% of the people involved in the interventions at each site are women (this includes management committees).		Commitment from the community

3. **Strengthening access to climate and early warning information to farmers and other target communities**	% of population with access to improved climate information and drought, flood and severe storm warnings (disaggregated by gender).	Review of agricultural practices and plans to validate incorporation of risk, weather and/or climate information Gender-sensitive field surveys undertaken within identified priority sites, representative of the Ugandan population; consultant reports.	Currently climate information and early warning are not provided to the majority – 3,950 people	70% of men and women in the project area have access to improved climate information and flood, drought and severe weather warnings	Awareness raising activities, and the demonstration of the advantages of responding to the information provided through the established EWS, will ensure the commitment of the communities in participating in the GCF project.

Activities	**Description**	**Inputs**	**Description**
1.1. Small-scale water storage and detention facilities designed and constructed or rehabilitated in critical waterways for communities to benefit from enhanced ecosystem functioning	Increased water retention and percolation for enhanced ground water recharge and availability.	1.1.1 Construct 100 trenches in the catchments 1.1.2 Erect gabions along gullies created by excess erosion 1.1.3 Develop community based catchment management plans 1.1.4 Support the establishment of community based/local institutions to monitor the implementation of interventions (5 community institutions) 1.1.5 Construct small earth dams with bundings 1.1.6 Rehabilitation of existing water harvesting structures 1.1.7 Desilting of clogged water ways 1.1.8 Conduct EAIs to guide activities during the rehabilitation of water harvesting structures.	Rehabilitation of water storage areas, building of water storage and technical assessments
1.2 Improved inlet streams to increase water delivery; (GCF)	Desilting and clearing of inlet streams for improved water delivery and recharge	1.2.1 Demarcate and mark boundaries along streams feeding into main wetlands (400 km) 1.2.2 Procure Plant species including grevelia and ficus species to be used for marking boundaries along streams (50,000 seedlings) 1.2.3 Support construction of cattle watering points to avoid animals going direct to the streams 1.2.4 Mobilize and sensitize livestock keepers (10 farmer groups) 1.2.5 Prepare detailed plans for silt traps,drainage,flood control and maximum water recuperation (engage 2 firms)	Improvement of water recuperation from inlet streams and training
1.3: Degraded catchment areas rehabilitated and land productivity improved	Reforest and revegetate catchment areas with indigenous species to reduce soil erosion and improve the retention of water.	1.3.1 Support the replanting/vegetating of bare catchment to enhance infiltration (50 ha) 1.3.2 Demarcate boundaries to protect indigenous grasses and herbaceous grasses from extinction (150 km)	Rehabilitation of catchment areas with reforestation and raising community awareness

		1.3.3 Support establishment of climate change resilient plant species especially elephant grass, Napier grass and coriander that can also act as fodder for livestock during drought (50 ha) 1.3.4 Engage NGOs, CBOs and consultant to train community members and extension workers in sustainable land management techniques 1.3.5 Organize exposer/exchange visits for local communities to learn from each other 1.3.6 Procure consultancy services (10 groups) 1.3.7 Mobilise and sensitise the beneficiaries (30 groups) 1.3.8 Establish and operationalise community committees to oversee the reforestation process (30 committees) 1.3.9 Procure and supply seedlings to the beneficiaries for establishment of woodlots and reforestation 1.3.10 Organize exchange visits for learning experiences 1.3.11 Stakeholder mobilization and sensitization (20 groups) 1.3.12 Mapping and zoning (1000 km) 1.3.13 Physical restoration and rehabilitation (25,000 ha) 1.3.14 Set up operational and maintenance committees (20 district/village level committees) 1.3.15 Construct the necessary infrastructure (embankments, reservoirs, ponds, etc.) identified for increasing water storage in wetlands (10 sites) 1.3.16 Train beneficiaries in water storage technology and mechanisms (5 groups)	
1.4 Strengthened wetlands management practices	Capacity building of Govt and communities for improved wetland management practices. Training on the latest knowledge in science on wetlands, climate change. Management techniques and best practice in wetland management.	1.4.1 Procure consultant services (1 firm) 1.4.2 Procure consultant services (1 firm) 1.4.3 Procure consultancy services (1 firm) 1.4.4 Procure consultancy services (5 plans) 1.4.5 Procure equipment (2 units) 1.4.6 Carry out community mobilization and sensitization (5 groups) 1.4.7 Establish and operationalise committees to oversee the management of protected sensitive areas (5 committees)	Training to improve management of the wetlands
2.1 Crop diversification and resilient agricultural best practice adopted	Smart agriculture and conservation agriculture practices to change the way farmers farm their land to become more resilient to climate change.	2.1.1 Procure consultancy services (Hire 2 training firms, each covering all extension officers in 1 region) 2.1.2 Engage 10 NGOs at local level 2.1.3 Procure 2 training firms 2.1.4 Engage 2 training consultancy services 2.1.5 Undertake 10 stakeholder consultative meetings	Improve farmers capacity to do resilient agriculture and farming best practices

		2.1.6 Establish and operationalise 10 farmer and water user committees at local level 2.1.7 Procure assorted seed varieties of beans, maize, Irish potatoes (215,500 kg) 2.1.8 Procure assorted herbicides for 30 farmer groups 2.1.9 Procure assorted hoes, pangas and fork hoes for 30 farmer groups 2.1.10 Set up 10 nurseries of improved varieties (coffee, Irish potatoes, rice) 2.1.11 Set up 4 farmer schools at community level 2.1.12 Procure water pumps, sprinkler and drip irrigation systems for 20 farmer groups to facilitate small scale irrigation 2.1.13 Engage 4 NGOs and CBOs operating at the local level 2.1.14 Construct ponds, canals and water supply facilities for livestock and irrigation	
2.2 Economically viable and sustainable livelihood and income generating interventions introduced, promoted and supported in the wetland and immediate catchment	Alternative livelihoods are strengthened and diversified, with focus on high growth sector and employability.	2.2.1 Fish farming, ecotourism (20 groups) 2.2.2 Engage 10 groups of NGOs/Consultants 2.2.3 Undertake stakeholder consultative meetings 2.2.4 Establish and operationalize farmer and water user committees at local level 2.2.5 Procure assorted beehives for 30 farmer groups 2.2.6 Procure small scale fruit processing equipment for 30 farmer groups 2.2.7 Procure cold storage equipment for 20 farmer groups 2.2.8 Procure solar panels 2.2.9 Procure biogas equipment (10 farmer groups) 2.2.10 Procure equipment to support drip irrigation initiatives for 20 farmer groups	Provide skill training and organize the community in order to receive inputs for improved livelihoods
3.1 Meteorological and hydrological infrastructural investments supported including additional manual and automatic weather stations, lightening sensors, hydrological monitoring equipment, agro-meteorological stations, forecasting equipment, and data archiving systems.	Ensure equipment and observations are available to develop more accurate and localized climate and weather observations, improving monitoring and warning capabilities, as well as enabling the long-term development of more accurate forecasts.	3.1.1 Weather Observatory suitable site surveying and Identification 3.1.2 Procurement of analysis software (ArcGis) 3.1.3 Visit to the rain gauge sites and service the rain gauges in catchments of the targeted districts 3.1.4 Calibration of meteorological equipment in the targeted districts and catchment areas (to improve observational data quality). 3.1.5 Hiring 5 people for data entry for 1 year and carryingout data entry staff competence assessment. 3.1.6 Collection of hardcopies of meteorological data from observatories in targeted areas to head office (including postage and courier services) 3.1.7 Procure desktop computers, printers and UPS	Installation of hydromet infrastructure, tailored to the needs of users in wetland areas. Ensuring that data communication streams are functioning and provide data in time to be useful.

		3.1.8 Procure servers for manual observations and automatic data archival 3.1.9 Procure lap top computers 3.1.10 Procure telephone and internet facilities for weather observatories in the targeted districts for dissemination of observations 3.1.11 Procurement of specialised equipment (Scanners - 20, Cameras - 4) for data rescue + 5 GPS for positioning new stations 3.1.12 Procurement of specialised equipment (Scanners - 20, Cameras - 4) for data rescue + 5 GPS for positioning new stations 3.1.13 Procurement of specialised equipment (Scanners - 20, Cameras - 4) for data rescue + 5 GPS for positioning new stations 3.1.14 Transform climsoft data to clidata data for targeted wetland area catchments including refresher training of data entry staff in use of climsoft 3.1.15 Procuring Clidata software for data archival. 3.1.16 Procuring a consultant to train UNMA staff on use of clidata 3.1.17 Training of data entry staff in use of clidata 3.1.18 procure a consultant 3.1.19 Procuring Weather observatories 3.1.20 Installation of the new weather observatories 3.1.21 Procure specialised stationary (e.g rainfall cards, sunshine cards) for the new weather observatories in target areas 3.1.22 Validation of Automatic weather against manual instruments in the target areas 3.1.23 Seminar for presentation of findings of the study in 3.1.22 to all stakeholders (UNDP, DWRM, WMD etc) 3.1.24 Procuring assorted equipment to upgrade existing weather observatories in the proximity of the targeted areas 3.1.25 Upgrading weather observatories in the targeted area	
3.2 Capacity building of relevant staff on operation and maintenance of climate monitoring equipment, data interpretation, modelling and forecasting.	Training on operations and maintenance (O&M) of equipment. Developing schedules and forward planning for future O&M.	3.2.1 Capacity needs assessment for meteorological and hydrological technicians in the targeted districts and refresher training 3.2.2 Training (30) staff in use of data analysis software (ArcGis, Python, CDO andGraDs) once per year 3.2.3 Acquisition of Bi-annual synergie licences for satellite data reception system 3.2.4 Procure servers to archive satellite imagery and analysis charts to aid forecasting for the targeted districts 3.2.5 Support training of staff in seasonal weather forecasting	Train UNMA staff for the operation and maintenance of infrastructure and associated communications systems. Develop forward planning materials and training for budgetary planning

		3.2.6 Supportthree (3) senior staff to attend Greater Horn of Africa Climate Outlook Forum meetings twice per year 3.2.7 UNMA Staff training in statistical techniques of downscaling of the season weather forecast of the targeted wetland areas 3.2.8 Training of meteorological and hydrological technicians at sub-national level to collect and analyse data 3.2.9 Support senior meteorologists and hydrologists to conduct training workshops for water management officers and weather observers in targeted wetland areas. 3.2.10 Dissemination of daily weather forecasts and early warning alerts to targeted wetland communities 3.2.11 Workshops to develop and review of operational manuals and competence assessment of staff in targeted districts 3.2.12 Acquisition of 4 mechanical toolkits, 4 dust blowers, 15 assorted personal protective wear. 3.2.13 Training of technicians in the targeted districts	
3.3 Climate-related information/services provided to target areas, such as early warnings on flash floods and extreme weather, agricultural extension advice for a wide variety of crops, short- to long-range weather forecasts.	Tailored products (bulletins, advisories and warnings) provided to beneficiaries and stakeholders, based on improved weather and seasonal forecasts.	3.3.1 Training weather forecasters in Numerical model product downscaling techniques and running of numerical weather forecasting models (WRF model) for the targeted wetland areas 3.3.2 Regional Training Centre training to enhance technical skills of forecasters in generation of tailored products for the targeted districts 3.3.3 Conduct stakeholder needs assessment on weather and climate products and formats 3.3.4 Design appropriate weather info dissemination platforms and strategies based on 3.4.1.3 3.3.5 Assessing the targeted area specific Indigenous Knowledge (IK) of targeted communities in relation to weather extremes such as floods, droughts etc 3.3.6 Workshops for forecasters to harmonise IK and scientific weather forecasting for targeted districts 3.3.7 Conduct baseline surveys to understand weather hazards affecting different targeted communities 3.3.8 Assessment of high impact weather events in historical data of the targeted wetland districts. 3.3.9 Stakeholder (targeted communities', emergency response organisations, Local authorities, NGOs, Social scientists, academia) workshop to design and refine severe weather warning system for targeted districts 3.3.10 Seminars for local FM radio stations' staff on weather and climate information dissemination 3.3.11 Facilitate a resource person from UK Met Office and seminars for	Tailored products are communicated according to sectors and needs

		twenty (20) meteorologists and hydrologists to develop training packages. 3.3.12 Support weather forecasters in monitoring interannual modes of rainfall variability (El Nino, Indian Ocean Dipole) with focus on targeted areas 3.3.13 Assessing the performance of the short, medium and long term forecasts of the targeted districts 3.3.14 Studies to establish atmospheric dynamics associated with high impact weather in the targeted regions so as to improve weather and climate predictions 3.3.15 Seminar for presentation of findings of 3.4.4.3 to stakeholders especially academia, numerical weather modellers.	
3.4 Customized ICT, mobile platforms, and other public and private communication channels identified and/or developed to support dissemination of the above information/services to the 'last mile' users to enable timely and urgent responsive action as well as short/medium/long-term planning for climate-dependent activities in sectors such as agriculture.	SMS-based and traditional communication systems are used to reach recipients and users of weather and climate information and warnings. Develop private sector	3.4.1 Procurement of a consultant 3.4.2 Procurement of a consultant 3.4.3 Developing and printing operational manuals for weather forecaster and observers 3.4.4 Workshops to operationalize operational manuals at local and national level 3.4.5 Workshops/seminars for weather and Climate information use with communities in target areas (start of every season). 3.4.6 Assessing the utilisation of weather forecasts by the targeted communities twice per year in each region 3.4.7 Conducting radio talk shows on seasonal forecast updates on Local FM radio stations twice per year/region 3.4.8 Seasonal Weather forecast impact assessments twice per year/region 3.4.9 Seminars for building capacity of agriculture extension staff on use of weather and climate information for farm level planning 3.4.10 Documentation of past and on-going climate and climate change research in the targeted areas 3.4.11 Engaging telecom company for internet band costs for the weather stations 3.4.12 Procure an ICT consultant 3.4.13 Training of UNMA staff in use of the SMS-based alert 3.4.14 Downscaling of seasonal weather forecast workshops involving local communities, and all stakeholders in each of the targeted regions conducted at district level 3.4.15 Translation of the weather forecasts into languages of local communities in the targeted wetland areas.	Improve users platform for dissemination and for short term action. Support UNMA with financial sustainability

		3.4.16 Printing and binding booklets forthe seasonal forecasts in different languages of the targeted communities. 3.4.17 Dissemination of the seasonal forecast booklets to targeted communities (twice per year/region) 3.4.18 Consultancy within UNMA to test systems	

H.2. Arrangements for Monitoring, Reporting and Evaluation

140. Project-level monitoring and evaluation will be undertaken in compliance with the UNDP POPP and the UNDP Evaluation Policy. The primary responsibility for day-to-day project monitoring and implementation rests with the Project Manager. The Project Manager will develop annual work plans, which gets approved by UNDP, to ensure the efficient implementation of the project. The Project Manager will inform the Project Board and the UNDP Country Office of any delays or difficulties during implementation, including the implementation of the M&E plan, so that the appropriate support and corrective measures can be adopted. The Project Manager will also ensure that all project staff maintain a high level of transparency, responsibility and accountability in monitoring and reporting project results.

141. The UNDP Country Office will support the Project Manager as needed, including through annual supervision missions. The UNDP Country Office is responsible for complying with UNDP project-level M&E requirements as outlined in the UNDP POPP. Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP Regional Technical Advisor as needed. The project target groups and stakeholders including the NDA Focal Point will be involved as much as possible in project-level M&E.

142. A project inception workshop will be held after the UNDP project document has been signed by all relevant parties to: a) re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project implementation; b) discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms; c) review the results framework and discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E plan; d) review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; e) plan and schedule Project Board meetings and finalize the first year annual work plan. The Project Manager will prepare the inception report no later than one month after the inception workshop. The final inception report will be cleared by the UNDP Country Office and the UNDP Regional Technical Adviser, and will be approved by the Project Board.

143. A project implementation report will be prepared for each year of project implementation. The Project Manager, the UNDP Country Office, and the UNDP Regional Technical Advisor will provide objective input to the annual PIR. The Project Manager will ensure that the indicators included in the project results framework are monitored annually well in advance of the PIR submission deadline and will objectively report progress in the Development Objective tab of the PIR. The annual PIR will be shared with the Project Board and other stakeholders. The UNDP Country Office will coordinate the input of the NDA Focal Point and other stakeholders to the PIR. The quality rating of the previous year's PIR will be used to inform the preparation of the next PIR. The final project PIR, along with the terminal evaluation report and corresponding management response, will serve as the final project report package. An independent mid-term review process will be undertaken and the findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the final MTR report will follow the standard templates and guidance available on the UNDP Evaluation Resource Center. The final MTR report will be cleared by the UNDP Country Office and the UNDP Regional Technical Adviser, and will be approved by the Project Board. The final MTR report will be available in English. An independent terminal evaluation (TE) will take place no later than three months prior to operational closure of the project. The terms of reference, the review process and the final TE report will follow the standard templates and guidance available on the UNDP Evaluation Resource Center. The final TE report will be cleared by the UNDP Country Office and the UNDP Regional Technical Adviser, and will be approved by the Project Board. The TE report will be

available in English. The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan, and will upload the final terminal evaluation report in English and the management response to the public UNDP Evaluation Resource Centre (ERC) (www.erc.undp.org).

144. The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure in order to support ex-post evaluations. A detailed M&E budget, monitoring plan and evaluation plan will be included in the UNDP project document.

145. Given the nature of the project, the focus on community livelihoods and the large-scale areas of wetlands to be rehabilitated, a further 2 sets of activities will added to the M&E work. These activities will facilitate both a more rapid and extensive evaluation of catchment and wetland rehabilitation (using remote sensing), as well as more in-depth knowledge on the impacts of the project on people's livelihoods (using impact surveys). The latter has already been undertaken in Uganda through the LDCF EWS project, the results from which have been used in the feasibility study. For this project a similar set of impact surveys will be undertaken, based around a redesigned survey instrument which assesses the extent to which the impact and targets of this project are met. The remote sensing work will be overseen by the M&E specialist within the project management unit, and the generated data and information (both from remote sensing and the impact surveys) will feed into the NWIS, enabling the information to be easily accessed and used.

I. Supporting Documents for Funding Proposal

☒ NDA No-Objection Letter Annex I

☒ Feasibility Study Annex II

☒ Integrated Financial Model Annex III

Not applicable: The public good nature of the project does not entail revenue generation during the lifetime of the project; hence a financial model is not deemed applicable for this proposal.

☒ Confirmation Letter (Co-financing letter) Annex IVa and Annex IVb

☒ Term Sheet Annex V

☒ Environmental and Social Impact Assessments Annex VI

☒ Appraisal report or Due Diligence Report Annex VII

☒ Evaluation report of the Baseline Project Annex VIIIa and Annex VIIIb

☒ Map Annex IX

☒ Timetable of Project Implementation Annex X

☒ Project/ programme Confirmation Annex XI

Additional Information

☒ Economic Analysis Annex XII

☒ Additional Background Details Annex XIII

Not Applicable.

☒ Responses to GCF comments on Concept Note Annex XIV

Not Applicable.

☒ Additional Supporting Documents Annex XV

** Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.*