ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY Regular Size Full Proposal

Country/Region: **Uganda**
Project Title: **Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda**
Thematic Focal Area: **Water management**
Implementing Entity: **Ministry of Water and Environment (MWE)**
Executing Entities: **Directorate of Water Resources (MWE) and Global Water Partnership Eastern Africa**
AF Project ID: **UGA/NIE/Water/2019/1**
IE Project ID:
Requested Financing from Adaptation Fund (US Dollars): **2,249,000**
Reviewer and contact person: **Dirk Lamberts**
Co-reviewer(s): **Claudia Maria Lasprilla Pina**
IE Contact Person:

Technical Summary	The project "Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda" aims to strengthen the resilience of communities and fragile ecosystems to climate change impacts through promoting appropriate water infrastructure investments and nature-based solutions. This will be done through the four components below: Component 1: Strengthening the capacity of key grass root stakeholders for climate change adaptation (USD 301,826). Component 2: Promoting appropriate water storage technologies for increased water and food security (USD 603,196). Component 3: Supporting nature-based enterprises for sustainable socio-economic development (USD 775,540). Component 4: Knowledge management and information sharing (USD 238,000). Requested financing overview: Project/Programme Execution Cost: USD 181,064 Total Project/Programme Cost: USD 2,086,996

	Implementing Fee: USD 162,004 Financing Requested: USD 2,249,000 The initial technical review raises several issues, such as limited information on project activities and the use of Unidentified Sub-Projects, compliance with the Fund's Environmental and Social Policy and Gender Policy, the budgets and the role of the Implementing Entity in project execution, as is discussed in the Clarification Requests (CRs) and Corrective Action Request (CAR) raised in the review.
Date:	13 May 2021

Comments	Responses to AF
Yes.	
Yes. Communities in the target area experience a range of climate change risks including drought, flooding and soil erosion.	
Yes. A duly signed Endorsement Letter dated 22 April 2021 has been provided.	
No. The proposal is 95 pages long and has 195 pages of annexes. Much information in the proposal document is presented more than once, and in some cases several times. **CAR 1:** Please adjust the proposal (length of annexes) to meet the page limitations.	Corrected. The number of pages of the proposal have been reduced to include 99 pages for proposal body and 98 pages for the Annexes.

Unclear. Most of the project interventions are described in rather generic and unspecific terms that do not allow to appreciate if or to which extent they will build climate change adaptive capacity and resilience. Apart from the training activities, none of the project activities or target communities or organisations have been identified. Some of the activities appear to have an inherent risk of exacerbating the problems they are intended to address e.g. by diverting water from wetlands. **CR 1:** Please provide specific information on the envisaged activities to demonstrate how relevant adaptive capacity will be built for climate change adaptation and resilience and how they will not lead to maladaptation. The description of the components and the activities is strongly focused on community resilience rather than that of fragile ecosystems as stated in the project goals. **CR 2:** Please clarify the mechanism by which the proposed interventions will contribute to achieving the goal of enhancing the resilience of the fragile ecosystems in or near which they will take place. The 'nature-based' activities of component 3 are essentially agriculture activities "bee keeping, commercial fruits and tree nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass" with little or no described base in nature and specifically the protection, management or restoration of ecosystems (as per the definition of nature-based solutions).	**Clarified** **Paragraph 64:** included IWRM approach to enable the conservation of the fragile ecosystems, and communities to access adequate and sufficient water to ably engage in productive agricultural activities **Activities:** **Activity 2.1.1.1 edited** …*address the challenges of water scarcity* **Activity 2.1.1.2 edited …***soil and water conservation* **Activity 2.1.1.3 edited …***in line with the national water policy (1999) chapter 4*: water resources management, that provides management arrangements right from the national to local level where under sub section 4.5 (v) highlights that water user groups will manage operate and maintain point water sources, and that community associations may also be formed for the purpose of managing resources such as wetland area, a fishpond or an irrigation scheme when such need arises. The existing Local councils and local government chiefs will play a role in setting local priorities and enforcing byelaws, monitoring and mediating in water management; The National Irrigation Policy (2017) that promotes sustainable irrigation development to enhance food and livelihood security and reduction of poverty. Under sub section 1.6 of this policy, it is clearly stated that the irrigation policy serves as an overarching instrument for regulation of irrigation development in the country. It's mission is promotion of irrigation development and management to enhance water use efficiency for increased and sustainable agricultural production and productivity and profitability to ensure food security and wealth creation Section 2.6 of the policy provides the guiding principles to be followed amongst which is supporting Integrated water resources management (IWRM); the water resources regulations (1998) that provide for application for a water permit by someone who wishes to construct, own, occupy or control any works on or adjacent to which there is a motorized pump that pumps water from a borehole or water way, there is weir, dam, tank or other capable of diverting or impounding an inflow of more than 400 cubic meters in any period of 24 hours, there are works for non-consumptive uses; and other related regulatory frameworks to address aspects of water scarcity/stress in a sustainable way. **2.1.1.4 edited…** *and degradation of the landscape* **3.1.1.1 Edited…** *Establish nature-based enterprises such as bee keeping, commercial fruits and tree nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass through collaborative natural resources management approaches. Such nature-based enterprises aim at promoting both ecosystems and communities' resilience to the impacts of climate change. In bee keeping conservation of natural bee habitats that provide bee forage comprising of natural vegetation will be promoted. Commercial fruits and tree nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass will focus on promoting restoration hence resilience of catchment*

CR 3: Please clarify how these activities meet the definition of nature-based solutions, how they are different from "business-as-usual" agricultural development activities and how they will specifically addressing climate change impacts. The proposal contains unidentified sub-projects (USPs) throughout, e.g. the activities of Outcome 3.2 "Enhanced ecosystem health" have not been identified, and those of Component 4 are only described in generic terms. Paragraphs 74-76 provide the criteria for the selection of beneficiaries for the activities of Component 3. However, the justification for the use of the USP approach is lacking; the information on which the identification of the USPs will be based is currently available. The particular importance of identifying the project activities only during project implementation is not demonstrated. **CR 4:** Please clarify why it is not possible and what the specific benefits are from not fully identifying the project activities during project formulation to the extent that adequate ESP risks identification is possible.	*ecosystems, whilst improving community livelihoods.* . Activity 3.2.1.1. Edited….Through Collaborative Natural Resources Management Approaches such as Integrated Water Resources Management, Collaborative Forest Management, Forest Landscape Restoration, Farm Managed Natural Regeneration, to enhance the resilience of the ecosystems and communities. **Corrected.** All project activities have been fully identified.

Unclear. While the activities that the project considers engaging in have an inherent potential to generate benefits, the economic and environmental benefits are unproven and the likelihood of such benefits materializing is not demonstrated. Further, these are dependent on a large number of external conditions not described in the project context (such as availability and accessibility of land, which is one of the problems described for the project area). The environmental benefits claimed are dependent on activities that are not included in the project. E.g., the activities of Outcome 3.2 on enhanced ecosystem health lack credibility, and the related milestones, targets and indicators presented are not related to or supported by other information in the proposal. **CR 5:** Please clarify the economic and environmental benefits the project will provide whilst also presenting supporting information and key assumptions.	The activities proposed on ecosystem health restoration have been modified and redefined to provide direct and tangible benefits especially through wetlands and riverbank restoration, reforestation, enrichment planting, opening of boundaries of fragile ecosystems and promotion of collaborative natural resource management approaches such as Integrated Water Resources Management, Collaborative Forest Management, Forest Landscape Restoration, Farm Managed Natural Regeneration) to enhance the resilience of the ecosystems and communities The economic benefits will primarily be on income generated from nature-based enterprises and enhanced resilience of ecosystems that will provide enhanced ecosystem goods and services. These are vital for livelihoods and enhanced productivity. These will be achieved on assumption that communities will ably adapt and there will a conducive enabling environment, socially and politically.

Unclear. The information in the relevant section of the proposal does not address the cost-effectiveness of the project activities and outcomes but rather the suitability of the IE to execute the project in a cost-effective manner. **CAR 2:** Please demonstrate in the proposal that the project is cost effective, including a clear description of alternative options and a comparative analysis with other possible interventions that could have taken place to help adapt and build resilience in the same sector, geographic region, and/or community; with quantitative estimates where possible.	The interventions selected (e.g. nature-based enterprises) are expected to generate income thereby adding to the cost-effectiveness of the project. The project proposes an approach that utilises appropriate local adaptation practices within the following: rainwater harvesting, agri-waste biomass, catchment restoration, and riverbanks restoration as well as mini irrigation schemes. Other adaptation measures that demonstrate cost-effectiveness include: incorporation of adaptation actions in by-laws for implementation by the targeted communities. Moreover, considering that the project targets about 20,852 beneficiaries with a total financial investment of USD 2,249,000 million, it is expected that the benefits will accrue socially, economically and environmentally from interventions, especially those that involve income generation. Such monetary benefits will inevitably lead to improvements or enhancements in peoples' resilience to climate change impacts, their wellbeing and improved ecosystems. Such benefits will lead positive benefit/cost ratios that reveal a profitable/cost-effective project investment. Thus, the project has adaptation components to be undertaken within a broader set of activities, hence the cost effectiveness is based on the comparison made relative to a business-as-usual project without adaptation components. The construction of water storage structures, for example, without giving attention to the catchment, would compromise the hydrology of the catchment. Hence, there is an inherent subjectivity and we have used expert judgment in defining the hypothetical alternatives. The components of the project (1. Strengthening capacity of key grass root stakeholders; 2 Promoting appropriate water storage technologies; 3 supporting nature-based enterprises for sustainable socio-economic development; and 4 Supporting knowledge management and information sharing have adaptation co-benefits that will help facilitate autonomous adaptation or increase adaptive capacity as a by-product. The project thus aims to increase productivity through improved water efficiency in the Katonga Catchment that is already drought prone and water-scarce. This is an element of cost-effectiveness. However, there is uncertainty regarding the economic value of the non-market benefits of the project. Climate variability and change, and responses to them, are aspects of uncertainty to the cost-effectiveness of the project, even over a medium-term particularly related to the underlying physical or ecological processes. Longer-term climate change impacts thus remain uncertain because some of them (e.g. greenhouse gas emissions) are unknown, as they depend on global efforts. Information for projecting the long-term scenario within the Katonga Catchment remains sparse regarding how climate changes and socioeconomic changes might interact, even though individual and institutional responses are critical determinants of climate change

	damages. Component 4, Supporting knowledge management and information sharing, is designed to address to loop hole in the long run, in a cost-effective manner. Determining the damages avoided or mitigated through adaptation in the Katonga Catchment is certainly a major benefit of the project that adds to cost effectiveness. However, there is the challenge of tracing through the impacts of interventions, particularly those related to soft investments, for example, in Component 1) Strengthening capacity of key grass root stakeholders; and Component 4) Supporting knowledge management and information sharing whose benefits are realized by a range of changes in private behaviour. However, we have considered the value of changes in tangible resource availability, such as water, as aspects of cost effectiveness. The adaptation measures of the project (e.g. in Water Storage) are aimed at sustaining rural development in the context of risks from a changing climate. However, many, of the recommended project interventions (or investments and other activities) will also bring benefits, irrespective of how much the climate changes. Actions that we have identified as good risk management strategies for adaptation to climate change will be valuable parts of broader strategies that benefit livelihoods and mitigate other risks. The adaptation investments could increase resilience to current climate variability, while also preparing for a future increase in variability due to climate change. The project responses will have benefits beyond managing climate risks (e.g., improving water-use efficiency in areas that are already water-scarce due to non-climatic pressures, such as increased water demand from different sectors). These adaptations are "no-regret" investments. They include: i) Improving land management and other production factors, which can help farmers improve overall production and better manage risks from droughts and floods; ii) Enhancing resilience of the resource base to extreme climate events through practices that protect soils against runoff and erosion, promote biodiversity and conserve water; iii) Improving Water Storage systems, which can increase water-use efficiency, bring greater flexibility to water delivery for agriculture, and help farmers diversify to better manage climate risks; iv)Improving restoration of critical/fragile ecosystems which is needed for managing both current risks and for building the capacity to cope with an expected increase in risk with climate change; and v) Creating opportunities for rural livelihood diversification (through IGAs), which can lead to increased economic security and less reliance on climate-sensitive agricultural activities. Project responses whose benefits stem mainly from addressing climate change risks, such as infra- structure interventions designed to respond to projected changes in runoff/flooding. As climate change is expected to affect water availability (i.e., runoff) and demand, water storage infrastructure will be built and/or water reallocated among

	users. Thus, the water-harvesting infrastructure is considered a “hard” adaptation investment, while the water reallocation is a “soft” adaptation investment via modified institutions and incentives. These add to the cost effectiveness of the project. Another aspect of cost-effectiveness is to ensure that there is no duplication of project interventions by other partners in the catchment. The relevant partner projects have been identified and evaluated to avoid duplication.
Yes. The project is in line and consistent with the mentioned major relevant national strategies and programmes. In addition, the project will also address key components of the National Climate Change Policy and Implementation Strategy of 2013.	

Unclear. The relevant section of the proposal includes only national technical standards related to environmental safeguarding and water management. There is no mentioning of agriculture standards or standards applicable to the other activities such as food production, tree nurseries etc. Some of the policies and regulations mentioned in tables 6 and 7 are relevant but not mentioned in the preceding section D - consistence with national sustainable development strategies. **CAR 3:** Please list all the national technical standards that apply to the project activities, and show how the project will meet those standards.	**National technical standards that apply to the project have been incorporated in the revised full proposal (Please, refer to Paragraph 102, Tables 6 and 7. The standards include:** 〉 Uganda Food and Nutrition Policy, 2003: The overall objective of the policy is to promote the nutritional status of the people of Uganda through multi-sectoral and coordinated interventions focusing on food security, improved nutrition, and increased incomes. Section 2.4 of the policy lays down strategies for achieving this overall objective amongst which is strategy 2.4.1 that focuses on creating a mechanism to ensure that the entire food chain from food production to consumption, is efficiently managed within the overall development strategy; through building capacities at all levels (Households, Communities, lcal councils, sub counties, district levels) for adequate action to improve household food security; 2.4.8 on enforcing environmental protection regulations that apply to the food chain; . Components 2 of the project activities contribute this objective with their expected outcomes of increased water and food security, and increased income for improved stakeholder livelihoods respectively 〉 National Forestry and Tree planting regulations 2016: Section 4 of the National Forestry and Tree planting regulations (2026) provides principles for sustainable forest management of which key to RECOFE project includes; a) conservation of ecosystems, habitats and biological diversity and their health and vitality; c). promoting participation of stakeholders in the planning and management of forests; Promoting participation of stakeholders in the planning and management of forests; d). promoting fair distribution of the economic, social and environmental benefits at the local, district and National levels; e) conservation of watersheds and other natural resources including soil and water; k). improvement of livelihoods and reduction of poverty, m). efficiency in forest management practices. The principles will be crucial in implementation of majorly component three of the project that looks at supporting nature-based enterprises for sustainable socio-economic development including bee keeping and reforestation related initiatives by the project.

Unclear. Further information is required. The proposal states previous and current initiatives that the project complements or to which it provides synergies within the catchment area. In addition, it is mentioned that the AF project under implementation by OSS and executed by MWE is providing lessons learned and best practices, while it is not specified which are the lessons learnt that will be considered for the implementation of this project. **CR 6:** Please specify how this project will build on and integrate results and lessons learned from the OSS implemented project. In addition, there are other projects that have not been mentioned but that can be beneficial to consider, due to best practices or complementarities available, including the following: • *Agricultural Value Chains Development Project* by MAAIF (component 3); • *Building Resilient Communities, Wetland Ecosystems and Associated Catchments in Uganda* by GCF (component 3); • *The PREPARED Community Climate Change Adaptation Assessment (C3A2)-toolkit* (component 1); and • *Adapting to Climate Change in Lake Victoria Basin Countries: Burundi, Kenya, Rwanda, Tanzania and Uganda*, UNEP with AF funding (component 4). **CR 7:** Please assess how the project complements the initiatives mentioned above or can draw lessons therefrom.	**Additional information on Projects has been incorporated in the full proposal document. Refer to Table 8. The corresponding detailed information are:** › Enhancing Resilience of Communities to Climate Change through Catchment Based Integrated Management of Water and Related Resources in Uganda (EURECCCA Project): Documented lessons learned from implementation of the OSS project, coupled with field excursions to promote peer-to-peer learning will enhance implementation of component 3 of the RECOFE project most especially for activities such as Activity 2.1.1.2: Facilitate development of simple biophysical water harvesting technologies for crop and animal production; Activity 3.2.1.1 Undertake ecosystem restoration activities (wetlands and river bank restoration, Reforestation etc.) and Activity .3.2.1.2 Sensitize stakeholders in sustainable utilization of natural resources › Agricultural Value Chain Development Project (AVCP) Lessons from component 3 of the AVCP will contribute to implementation of: Activity 3.1.1.4 Establish value chains for key agreed upon nature based enterprises activity 3.1.2.3; Facilitate establishment and operation of a market information system; 3.1.3.1; Facilitate registration of small-scale businesses 3.1.3.2; Train entrepreneurs in business management skills; & 3.2.3.3; Develop business plans for translation into functioning businesses › *Building Resilient Communities, Wetland Ecosystems and Associated Catchments in Uganda* Lessons from the project will inform and guide in implementation of Component 2 of the RECOFE project activities that promote innovative multi-stakeholder water storage technologies. Activity 2.1.1.1 Construct /Rehabilitate agreed upon low cost and appropriate water storage facilities; Activity 2.1.1.2 Facilitate development of simple biophysical structures; Activity 2.1.1.3 Facilitate construction of micro-irrigation schemes › *Planning for resilience in East Africa through policy, adaptation, research and economic development (PREPARED):* The 14 regional climate change adaptation tools developed, tested or adopted will be used in implementation of RECOFE project to enhance the resilience of the ecosystems and communities › *Adapting to Climate Change in Lake Victoria Basin Countries: Burundi, Kenya, Rwanda, Tanzania and Uganda*, › Lessons will be drawn to inform the implementation of component 2 and 3 of the RECOFE project

Yes. The project has a dedicated knowledge management component, which entails the organisation of learning events in climate change adaptation, documenting lessons learned, case studies and dissemination of good practices for replication and upscaling. The proposal includes the idea of having demonstration sites that will be established as learning centres.	

Yes. A consultative process has taken place. The proposal describes the consultations that were held. The annexed consultations report mentions that marginalized and vulnerable stakeholders were explicitly targeted during the consultations but does not provide substantiating information. Similarly, the gender considerations are not reflected. It is unclear if or to what extent the outcome of the consultations has been incorporated in the project design. **CR 8:** Please clarify how marginalized and vulnerable stakeholders were identified and meaningfully involved in the consultations. **CR 9:** Please clarify that gender considerations were taken into account in the consultations and how these are reflected in the consultations findings and subsequently used in the project design. The lack of clearly identified project intervention locations (USPs) does not allow to appreciate the appropriateness and comprehensiveness of the consultations process in the target area. **CR 10:** Please clarify how the consultations process is comprehensive and relevant to the eventual project beneficiaries and stakeholders.	**More information has been provided in the proposal. Refer to Paragraphs, 113, 114, 117 and 118.** During mobilisation, we targeted 30% women representation at all selected areas where consultations were held. Consultations were held in the afternoons to allow women participate in the consultations after attending to their gardening chores where they particularly earn a living. Local languages such as (Luganda, Rutooro, Runyankole) spoken in the selected sites were principally used to allow participants to freely express their views, seek clarities and make inquiries with the consulting team. While consulting, specific questions on livelihoods, sources of income and access t**o** land and other resources were tailored towards women because that's where they derive a living. This was done during focused group discussions where women were consulted differently from men on varied issues in a way that offered easy expression and articulation on issues with comfort. Youth groups and councils structures do exist, youths representatives such as the chairpersons, vice chairpersons, secretaries were selected to participate and represent the views of their group members. The major intention of involving youth representatives in consultations process was to capture issues that are particular to youth. District women representatives were widely consulted and they facilitated during the meetings in some selected sites. They helped in the selection of consultation venues that were within the reach of the participants and allowed for easy and uninterrupted participations with all the participants. The District leadership in the selected project sites were instrumental in pointing out hotspots where major degradations are taking place, and that formed basis of selecting beneficiaries of the project. The process of identifying stakeholders was aided by the use of the local government structures District, County, Sub-County, Parish and Villages in consultation with leaders at each level of governance. Information on the vulnerable group was made available by leaders at all levels via available documents such as District devilment plans and reports. Communities living within and communities adjacent the degraded parts of the catchment were considered and special focus was put on women, youths, men and PWDs because they are particularly affected by impacts of climate change within the catchment.

	A specific gender analysis and action plan was conducted **(Annex 5)**. In addition, to promote gender equality, representation and empowerment, the project has been deliberately designed to ensure that women play a prominent part in the four components of the project i.e. capacity enhancement including governance, adaptation actions under water infrastructural development and nature-based enterprises and knowledge management by deliberately targeting 50% of the beneficiaries/participants being women. The Uganda Gender Policy 2007 will guide the implementation of the gender action plan. The ability of men and women, boys and girls to enjoy the same status and have equal opportunity to realize/ harness their potential to contribute to development agenda of the country at large will be **o**f key f**o**cus.
Unclear. In general, the proposal does not demonstrate that the interventions will achieve the stated objectives (apart perhaps those from components 1 and 4). This is in particular the case for those activities that aim at addressing larger-scale problems such as ecosystem degradation. **CR 11:** Please clarify that the requested financing will help achieve the project adaptation objectives, in particular for the issues requiring a larger-scale approach.	Corrected. For interventions that aim at addressing larger-scale problems such as ecosystem degradation, additional activities that will likely indicate achievement of project adaptation objectives have been incorporated in the proposal document under activities 3.2.1.1 and 3.2.1.2. Activity 3.2.1.1.is on undertaking ecosystem restoration activities. Restoration activities include wetlands and riverbank restoration planning and demarcation, reforestation, enrichment planting and opening of boundaries of fragile ecosystems. Promotion of collaborative natural resource management approaches such as Integrated Water Resources Management, Collaborative Forest Management, Forest Landscape Restoration, Farm Managed Natural Regeneration) to enhance the resilience of the ecosystems and communities will also be involved in aiding ecosystem restoration. Activity 3.2.1.2 is about sensitizing stakeholders in sustainable utilisation of natural resources for instance helping communities to appreciate the importance of the natural ecosystems. In addition, the budget has been realigned to ensure that more financial resources for ecosystem restoration are provided. Therefore, the requested financing is adequate to achieve the project adaptation objectives. Furthermore, the section on cost effectiveness has been re-written to clarify the cost effectiveness of the proposed project.

For activity 3.1.1.5 (“Identify and establish probable Sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, People With Disabilities-PWDs) to scale -up nature-based enterprises.”), it is unclear if this will require additional financing. **CR 12:** Please clarify the nature of the activities envisaged under 3.1.1.5.	Revised Activity 3.1.1.5 has been revised to match the earlier purpose of supporting vulnerable communities to scale up the nature-based enterprises. The activity currently focuses on providing inputs to selected vulnerable communities (women, elderly, youth, PWDs) to scale -up beekeeping, tree and fruit nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass production.
Partially. An explanation of the proposal alignment with the AF Results Framework has been included but presents some inconsistencies. It is important to ensure consistency of alignment at both project objective and project outcomes level. For instance, the project objective is aligned with outcome 4, but this is not currently reflected at output level, as no outputs pertaining of AF outcome 4 are included. Similarly, at output level, outputs 7 and 8 are considered, but these are not aligned with the outcomes mentioned above. **CR 13:** Kindly clarify which policies will be introduced or adjusted that are mentioned for Output Indicator 7.1.	Correction made. Out indicator 7.1 has been deleted. Out indicator 7.2 on No. of targeted development strategies with incorporated climate change priorities enforced, focus on the Activity 1.2.1.4 Develop and strengthen the

CR 14: Please clarify what would be the innovations mentioned as part of Output Indicator 8.1. **CAR 4:** Kindly adjust output numbers (Output 2 should be Output 2.1)	governance and leadership frameworks (Bye-laws, ordinances, guidelines) to improve natural resources governance. Output adjusted to Output 2.1
Unclear. Statements with respect to sustainability of the project outcomes generally lack substantiation. The project refers to and builds on the AF-funded EURECCA project, implemented by OSS and executed by MWE, which has been subject to a mid-term review. That review has identified a number of concerns, in particular with respect to sustainability, gender and governance. **CR 15:** Please clarify how the lessons learned from that review have been taken into account in the identification and design of the current project, in particular with respect to, but not limited to, sustainability and functional capacity of SCMCs to coordinate stakeholder engagements and equal gender participation. The project will support the establishment of resource user groups (component 3), in addition to providing support and capacity building for numerous other community groups. It is unclear how these groups and their activities will be sustained beyond the period supported by the project.	As correctly mentioned, the EURECCCA mid-term review highlighted a number of issues related to sustainability, gender and governance. RECOFE project has critically analysed these issues with aim of ensuring that they are adequately addressed in the project design to benefit the project stakeholders. First, on sustainability, the RECOFE project has provided for strengthening of the Katonga Catchment Management Committee and formation of Sub- Catchment Management Committees as a strategy for sustainability. As already learnt from EURECCCA Project, these will greatly minimized the risk of sustainability, since these committees encompass leaders representing both men and women from all crosscutting sectors; water, natural resource, environment, media, politics, L.G, among others. Furthermore, there is high participation on women, youth and disabled people when mobilized for activities. Furthermore, the mid-term review of EURECCCA Project noted the need for wide consultations and active participation of the multi-sectoral stakeholders in project design and implementation. Thus, the design of RECOFE project ensured that there was wide consultations and active participation of the multi-sectoral stakeholders at national and catchment (local governments/sub-national and community level). During project development, the views of the stakeholders on how they wish to be involved in project interventions were clearly documented and action will be taken in this regard. The project has proposed harmonised enhanced sustainable resource utilisation of all stakeholders i.e. community leaders, technical teams and politicians in the catchment. Secondly, the project has been designed to be gender inclusive and transformative. The project will prioritise gender in resource allocation, which will ultimately contribute to

CR 16: Please clarify and substantiate the sustainability of the resource user groups the project will support to establish and operate.	gender transformation within the project. Further, the project will not only acknowledge systemic and systematic inequalities between men and women, but also address the root causes of these inequalities and address them at the project start. This will be in addition to providing regular capacity building programmes and training on gender transformative approaches at all levels. For governance, the leadership structures in the catchment exist, and the project will ensure they are strengthened to serve the purpose they were created. The project will train the members of the Catchment Management Committee, Sub- Catchment Management Committees and relevant stakeholders in leadership skills and accountability. To sustain the resource user groups beyond the project period, there will be initiation of enterprise development (to enable the groups acquire income); training in leadership and innovative small-scale businesses for income generation. To activate sustainability for the resource user groups, the project will cascade nature-based enterprises e.g honey production- ensuring the whole value chain from production to marketing and record keeping.
Not adequately. The environmental and social risks that have been identified and listed in section II.K of the proposal include risks for the USPs, which by the very nature of USPs is premature at this stage. **CR 17:** Please clarify the ESP risks identification presented to be limited to the fully identified activities. **CAR 5 :** Please identify all the project activities to the point where adequate comprehensive environmental and social risks identification is possible and update the proposal accordingly. Specific issues in the risk assessment presented in the proposal: • the risks identification for compliance with the law stipulates that for the USPs their compliance with technical standards should	Yes, ESP risks identification presented is limited to the fully identified activities. All project activities have been identifieded to a point where adequate and comprehensive environmental risk identification is possible an dthe proposal updated accordingly. Activity 3.1.1.1: details of changes specifically included: Through collaborative natural resources management approaches, establish nature-based enterprises namely bee keeping, commercial fruits and tree nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass to enhance both ecosystems and communities' resilience to the impacts of climate change. Establishing bee keeping will be aimed at promoting the conservation of bee habitats; commercial fruits and tree nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass will promote restoration hence resilience of catchment ecosystems, whilst improving community livelihoods. Activity 3.1.1.4 Establish value chains for bee keeping, tree and fruit nurseries, , mushroom growing, incense sticks production, bamboo and agri-waste biomass

be considered, whilst these standards have not been adequately identified (**please see CAR 5**) • marginalised and vulnerable groups in the project area have only been identified in generic terms (women, youth, disabled). Refugees are also mentioned, in similar terms, without specific information on their numbers or vulnerabilities. • (worst forms of) child labour are not mentioned, while this is a widespread problem in Uganda, particularly in the agriculture sector. • inconsistencies, e.g. with respect to involuntary resettlement, Table 9 states there is no risk while the risk is acknowledged in paragraph 138. • the risks findings for natural habitats and biodiversity are not based on a description of such elements in the project area that may be at risk but mostly built on intended project outcomes • please correct the term 'afro-toxines' (paragraph 147) • the absence of identified risks for the ESP principles on heritage and lands and soil conservation lacks justification. • the interpretation of what constitutes a USP (paragraph 150) is not in line with the ESP or related guidance.	production(including production, processing, handling/storage, packaging/ eco-labelling Activity 3.1.1.5 Provide inputs for selected vulnerable communities to scale up bee keeping, tree and fruit nurseries, , mushroom growing, incense sticks production, bamboo and agri-waste biomass production Paragraph 150 under unidentified sub projects has been edited as follows: and now reads: During implementation, in the event any USP is identified, more detailed E&S assessment will be conducted to identify activity-specific E&S management measures that need to be incorporated into the specific project. The process will be governed by the Risk Management Procedure of the AF; AFB.B32 33.7 Compliance with ESP update of PRR, and guidance for USPs-revised; the National Environment Act 2019 and as well the National Environment (Environmental and Social Assessment) Regulations, 2020 Unidentified Sub-Projects (USPs) in the RECOFE Project (Paragraph 156) has been deleted from the proposal Table 9 under Marginalized and Vulnerable Groups, paragraph edited to read as follows: The main focus of the project is to increase the resilience of grass root stakeholders mainly the marginalized and vulnerable groups. The females as one of the marginalized and vulneral groups in the catchment are estimated to be 1,524,887 (50.5% of the total catchment population). 1The proportion of other marginalized and vulnerable groups (and their vulnerabilities) in the catchment that include the youth, elderly, People With Disabilities, as well as the absolute poor (live on less than USD 1 per day) is to be determined at the onset of the project. The project will ensure that at least 50% of the project beneficiaries are representatives of the vulnerable groups. Stakeholder mapping and consultations have ensured that all the marginalized and vulnerable groups in the project area have been identified and incorporated in the project design and this ensured most of their issues in respect to the project have been captured and incorporated. Special attention shall also be given to refugees living in a refugee settlement in Kyegegwa District to ensure that those will participate and benefit from Project activities The total population of refugees in the target settlement of Kyaka is 123,086, of which females and children are 96,702 (79%), the elderly 3,061 (2%) and youth between 12 and 24 years 25934 (21%).. 2 The project monitoring system is also be based on desegregated data to enable tracking of the participation by these groups during project implementation.

[1] UBOS 2014. Statistical Abstract 2014
[2] UNHCR Uganda – Refugee statistics February 2020 -Kyaka II

CR 18: Please ensure that the updated risks findings following CAR 5 addresses the issues listed above.	Table 9 under Core labour rights, paragraph has been edited to include child labour Paragraph 138 reviewed to remove the inconsistences and now reads: The project will not result in involuntary resettlement of communities in the project area in regard to eviction or people involuntarily leaving their homes or even losing their land use rights. Project activities shall be undertaken on land belonging to willing beneficiaries Table 9. risks findings for natural habitats and biodiversity principles. Under protection of natural habitats, the paragraph has been edited and now reads: The rates of forest and wetland degradation in the catchment is high. For the period between 2005-20010, at least 70,065 hectares of forests were deforested and 29,132 hectares were degraded. Over 53% of wetlands in the catchment have been degraded. The project activities mainly under component 3 will lead to restoration and protection of these natural habitats. Under Conservation of Biological Diversity, the text has been edited as follows: Katonga catchment is known to have viable Sitatunga (*Tragelahpus spekei*) population inhabiting in the Katonga wetland system. Within the catchment is also the Katonga Wildlife Reserves that habours high populations of Waterbucks, Hippos, Elephant, Buffalo, Bushbuck, Reedbuck among others and Birds. In 2015, about 60 impalas and 5 Zebras were successfully translocated to the reserve in order to restock and boost animal populations for tourism. The population of Impalas now stands at 300 individuals. The current bird checklist is over 150 including species specific to wetlands, savannah and forests. Project activities under component 3 will contribute to restoration of these habitats and thus enhance the conservation of biodiversity. The term Afro-toxins has been corrected to Aflatoxins The absence of identified risks for the ESP principles on heritage and lands and soil conservation has been corrected to include justification as follows: Population trends in the Katonga catchment suggests that the population could double by 2040 with more than half of the population below the age of 14. This could pause threats of encroach to cultural and heritage sites such as the Nakayima tree in Mubende district, and Bigo Byamugyenyi in Ssembabule district. Although the project activities shall not be undertaken in sub-counties hosting these cultural sites, some of the cross-cutting project activities including environmental education shall promote the conservation of these sites. Under soil and land conservation, risks have been identified and edited as follows: Soil erosion is extreme in the cattle corridor in the country with predictable erosion rates of over $10 tha^{-1} yr^{-1}$. The recent population explosion outmatches farmers' ability to find

	arable land with the consequence that continuous tillage is the norm. Most of the Katonga catchment is highly degraded (62%), and only 1% is classified as lowly degraded. Soils will also further be exposed to erosion and contamination during the construction of the water infrastructure. Hence, soil and water conservation is one of the key issues to be addressed by the project especially through activities Activity 2.1.1.2 Facilitate development of simple biophysical water harvesting technologies for crop and livestock production and Activity 3.2.1.1 Undertake ecosystem restoration activities (wetlands and river bank restoration, Reforestation etc.). The project will enhance the conservation of water and soil resources and no further assessment is required in this regard.
Yes. The current request for funding is within the balance of the previous US$10 million cap of funds that the country had available. The last project for Uganda was approved more than 4 years ago, and in compliance with country cap decision B36/41 US$12,249,000 is available under the current country cap, with a maximum of US$10 million per project.	
Yes. The IE fee is below 8.5%. Nevertheless, the numbers should be revised for the disbursement schedule (Table 17), currently there is a difference of US$ 1 in the sum. **CAR 6**: Please correct Table 17.	Addressed The disbursement schedule in Table 17 has been revised to match the figures.
No. The current project execution costs (8.7%) are below the 9.5% cap. However, MWE as IE is also providing execution services which in exceptional circumstances and when duly justified can be allowed, in compliance with AF Board decision B.18/30. In such case, project Execution Costs are capped at 1.5%. The required justification is not provided. **CAR 7:** Please update the proposal to comply with AF Board decision B.18/30 by providing a clear	Addressed.

justification for the exceptional circumstances requiring the IE to provide execution services, and by capping Execution Costs for MWE at 1.5%. Please also see **CAR 6.**	In compliance with AF Board decision, B.18/30 that confirms as a principle on the separation between implementing and execution services, the project execution costs have been revised 1.5% and the IE costs maintained at 8.5%. The budget figures have been revised accordingly.
Yes.	
Unclear. The role of the Global Water Partnership Eastern Africa (GWPEA) as an executing entity is listed in rather generic terms and will only be detailed during project implementation (paragraph 160). Table 10 includes a number of additional organisations or groups, including the project beneficiaries, as executing entities. **CAR 8:** Please include a clear description of the roles and responsibilities of the implementing entity as well as any executing entity or organisations/stakeholders that are involved in the project.	The project will be implemented by the Ministry of Water and Environment (MWE). As an accredited National Implementing Entity (NIE), MWE will be in charge of all financial, monitoring and reporting aspects to the Adaptation Fund. MWE will also provide administrative and management support to the project, including to the executing entities and will be responsible for reporting project related information to the Adaptation Fund. In MWE, the executing focal point will be the Directorate of Water Resources Management (DWRM) and the project will be executed in partnership with the Global Water Partnership Eastern Africa (GWPEA). The MWE through DWRM is executing an Adaptation Funded project entitled Enhancing Resilience of Communities to Climate Change through Catchment Based Integrated Management of Water and related resources in Uganda (EURECCCA)" worth USD$7.7Million. GWP Eastern Africa is a partner to the EURECCCA project, providing technical support to the capacity building and knowledge management component. The role of GWPEA in the RECOFE project will be to: provide technical support to the project, mobilize GWP's extensive experience in practical demonstration of water related adaptation actions, documenting the lessons and best practices as well as creating linkages of the knowledge generated at the catchment level and the national level processes. In addition, GWPEA will support the monitoring component and specifically, ensure that the project activities are on track as planned in the project work plans. These roles (of GWPEA) will be elaborated and formalized through a Memorandum of Understanding with the Ministry of Water and Environment.

Yes. Financial and project risks have been identified and are listed together with mitigation measures. The 'medium' rated risk of 'Project financial management and accountability' will be mitigated by "Ensuring strict adherence to separation of roles in financial management and audit". **CR 19:** Please clarify how this mitigation will be effective with the IE also being the executing entity of the project.	The financial transactions of all ministries are overseen the Ministry of Finance Planning and Economic Development which is the National Designated Authority (NDA). The NIE is fully accountable to the NDA.
No. The project contains USPs but does not provide the required justification for their use, i.e. that it is impossible or otherwise detrimental to identify these activities before submission of the funding request. The IE will also execute the project, which affects the oversight role of the IE. The IE requested and obtained a Technical Assistance Grant for ESP that was used for the development of the present project proposal, suggesting that the IE may not have adequate capacity to comply with the ESP requirements. The proposal does not specify how the IE will adequately supervise the application of the ESMP, particularly with respect to the USPs. **Please see CAR 5.** The proposed grievance mechanism seems fit for purpose.	

No. A total amount is presented for the IE Management Fee but a detailed budget of cost per item is missing. **CAR 9:** Please include a detailed budget for the IE fee. **CAR 10:** Please remove decimals from the budget.	Addressed. Detailed budget for the IE management fees has been provided. Addressed. Decimals have been removed from the budget. Also in other sections of the proposal.
No. A total amount is presented for the execution cost but a detailed budget of cost per item is missing. **CAR 11:** Please include a detailed budget for the execution cost.	Addressed. The budget for the execution cost is provided.
Yes. A detailed budget is included. Nevertheless, various discrepancies need revision. **CAR 12:** Please provide an accurate budget and ensure that all budget figures are matching in all tables presenting budget figures.	Addressed. An accurate budget that matches budget figures provided.
Yes. The proposal states in paragraph 168 that "the Victoria Water Management Zone (VWMZ) staff will undertake the evaluation and prepare annual reports." **CR 20:** Please clarify the role of executing entity VWMZ staff in the project evaluations.	The role of the VWMZ staff is lead project implementation at field level. In terms of M&E they will produce quarterly progress and monitoring reports to inform both internal and external evaluations.
Yes. **Please see CAR 9.**	

Yes. The proposal currently aligns with outcomes 2, 3, 4, 5, and 6 of the AF's results framework. In addition, it includes an estimation of the number of direct beneficiaries for the project and proportion of degraded ecosystems that are restored or conserved.	
Yes. A disbursement schedule is included with time-bound milestones. However, it should be revised to ensure consistency with Table 17. **CAR 13:** Please revise the disbursement schedule to ensure consistency with Table 17 and to align the calculation for components 3 and 4 with the total presented of US$ 2,249,000.	Addressed. The disbursement schedule has been revised to ensure consistency with Table 17 and budget figures for components 3 and 4 align well with the total budget of USD 2,249,000/=.

ADAPTATION FUND

PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category:	**REGULAR**
Country/ies:	**UGANDA**
Title of Project/Programme:	**ENHANCING RESILIENCE OF COMMUNITIES AND FRAGILE ECOSYSTEMS TO CLIMATE CHANGE IN KATONGA CATCHMENT, UGANDA**
Type of Implementing Entity:	**NATIONAL IMPLEMENTING ENTITY (NIE)**
Implementing Entity:	**MINISTRY OF WATER AND ENVIRONMENT**
Executing Entity/ies:	**DIRECTORATE OF WATER RESOURCES MANAGEMENT (IN THE MINISTRY OF WATER AND ENVIRONMENT) IN PARTNERSHIP WITH GLOBAL WATER PARTNERSHIP EASTERN AFRICA**
Amount of Financing Requested:	**USD 2,249,000**

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ACRONYMS

AF	Adaptation Fund
CBMS	Community Based Management System
CBOs	Community Based Organisations
CC	Climate Change
CCD	Climate Change Department
CDO	Community Development Officer
CFRs	Central Forest Reserves
CMC	Catchment Management Committee
CMO	Catchment Management Organisation
CMP	Catchment Management Plan
CSOs	Civil Society Organisations
DAO	District Agriculture Officer
DDP	District Development Plan
DEA	Directorate of Environmental Affairs
DEO	District Education Officer
DLGs	District Local Governments
DNRO	District Natural Resources Officer
DPO	District Production Officer
DRDIP	Development Response to Displacement Impacts Project
DWRM	Directorate of Water Resources Management
EE	Executing Entity
EIA	Environmental Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESP	Environment and Social Policy of the Adaptation Fund
EURECCCA	Enhancing Resilience of Communities to Climate Change through Catchment Based Integrated Management of Water and related resources in Uganda
FAO	Food and Agricultural Organization
FEWS NET	Famine Early Warning Systems Network
GoU	Government of Uganda
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
GWPEA	Global Water Partnership Eastern Africa
HHs	Households
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
ICPAC	IGAD Climate Predictions and Application Centre
IGAD	Intergovernmental Authority on Development
IGAs	Income Generating Activities
ILO	International Labour Organisation
INDC	Intended Nationally Determined Contributions
IPCC	Inter-governmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
IWRM	Integrated Water Resources Management
KAPs	Knowledge, Attitudes and Practices
KCMP	Katonga Catchment Management Plan
LC III	Local Council III
LCV	Local Council V
MAAIF	Ministry of Agriculture Animal Industries and Fisheries
MGLSD	Ministry of Gender, Labour and Social Development
MoFPED	Ministry of Finance Planning and Economic Development
MoUs	Memorandum of Understanding
MTWA	Ministry of Tourism, Wildlife and Antiquities
MWE	Ministry of Water and Environment

NAADS	National Agricultural Advisory Services
NACOPART	Nature Conservation Partners
NAP	National Adaptation Plan
NAPA	National Adaptation Programmes of Action
NCCAC	National Climate Change Advisory Committee
NDA	National Designated Authority
NDC	Nationally Determined Contributions
NDP	National Development Plan
NDP	National Development Plan
NEMA	National Environment Management Authority
NEMP	National Environment Management Policy 1995
NFA	National Forestry Authority
NGOs	Non-Governmental Organisations
NIE	National Implementing Entity
NPA	National Planning Authority
NSC	National Steering Committee
NWSC	National Water and Sewerage Corporation
OSS	Sahara and Sahel Observatory
PWDs	People with Disabilities
RCP	Representative Concentration Pathways
RECOFE	Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment Project
SDGs	Sustainable Development Goals
UBOS	Uganda Bureau of Statistics
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
UNMA	Uganda National Meteorological Authority
USPs	Unidentified Sub-Projects
UWA	Uganda Wildlife Authority
VWMZ	Victoria Water Management Zone
WFP	Water for Production
WMD	Wetlands Management Department
WMZs	Water Management Zones
WSDF	Water and Sanitation Development Facility
WUWS	Western Umbrella for Water and Sanitation

1. Project Background and Context:

1.1 Climate change rationale

1. Uganda lies within a relatively humid equatorial climate zone, but the topography, prevailing winds and water bodies cause large differences in rainfall patterns across the country. The average annual rainfall ranges from 800 mm to 1500 mm[1], and average daily temperature is around 28 ºC, but varies with altitude[2].
2. The country is endowed with significant portions of the world's most spectacular biodiversity and rich natural resource base, which deliver numerous ecosystem goods and services that are shared by millions of people across the country. With a total land area of 241,038km^2, about 30% of Uganda's land is suitable for agriculture. Uganda's economy, therefore, fundamentally depends on the careful management of a delicate balance between safeguarding the integrity of the environment and natural resource base and meeting the increasing economic needs of land users particularly the rural vulnerable poor.
3. Striking this balance amidst a changing climate coupled with other stresses such as the increasing human population and a multitude of anthropogenic pressures presents an enormous challenge that undermines and threatens their capacity to provide ecosystem goods and services for local communities.
4. Currently, Uganda experiences significant impacts of climate change manifested in form of changing weather patterns, drop in water levels, increased frequency of extreme weather events such as floods, and droughts, whose social economic impacts render communities highly vulnerable[3].
5. Uganda's second national Communication 2014 presents IPCC models and Representative Concentration Pathways (RCPs) 4.5 and 8.5 that reveal temperature rises in all the Climatologically Homogenous Zones (CH) of Uganda[4]. From these models maximum temperature ranges of between 1-1.5°C, 1.7-2.2°C; 1.7-2.1°C, 3.2-3.9°C for RCP4.5 (moderate emission) and RCP8.5 (high emission) for the 2050s and 2100s respectively are projected. Similarly, minimum temperature ranges of between 0.8-1.8°C, 1.7-2.5°C; 1.4-2.1°C, 1.2-2.3°C for RCP4.5 (moderate emission) and RCP8.5 (high emission) for the 2050s and 2100s respectively are projected.
6. Majority of these and other models predict an increment in rainfall with varied magnitude of precipitation increase throughout Uganda. The ensemble means show an increment for all the CHR zones with mean rainfall amount predicted to increase significantly and consistently for the western shores of Lake Victoria and central western region; Mount Elgon region; and to the zone extending from Mount Rwenzori to the southern parts of Lake Kyoga. The greatest change in the intensity and frequency of extreme weather events is likely to take place between the current and the mid-century period (Anonymous, 2021).
7. The expected changes in rainfall patterns will lead to a potentially less favourable rainfall distribution over the year. The warming trend is projected to continue with increases of more than 2ºC by 2030, and between 1.4 ºC and 4.2 ºC projected for the end of the century. Consequently, the warming trends, lead to increases in the frequency of extreme events (e.g. heavy rainstorms, flooding, droughts, etc.). For instance, Uganda has experienced an increase in the frequency and intensity of droughts and floods in recent years. The percentage of rainfall coming in the form of heavy precipitation events is anticipated to increase, which would escalate the risk of disasters such as floods and landslides. Such disasters cause extremities leading to economic losses of crops and animals depriving communities of a better livelihood. From these scenarios, extreme climate events such as droughts, floods and landslides are increasing in frequency and intensity with various sectors including agriculture, water, health and human settlements particularly affected[5].
8. In Uganda, Katonga catchment is among the most climate-vulnerable regions. The catchment traverses' part of the dry Ugandan cattle corridor, which is affected by a wide range of climate change effects. Climate change is expected to exacerbate the impacts of existing threats to the catchment's

[1] USAID, 2013. Uganda Climate Change Findings. USAID, ARCC brief, 2013 https://www.climatelinks.org/resources/uganda-climate-change-vulnerability assessment-report and USAID Climate Change Adaptation Plan, June 2012 https://www.usaid.gov/sites/default/files/documents/1865/Agency%20Climate%20Change%20Adaptation%20Plan%202012.pdF

[2] Climate Service Center Germany (2015). Climate-fact-sheet. Uganda. Updated version 2015. http://www.climate-service-center.de/products_ and publications/fact_sheets/climate_fact_sheets/index.php.en

[3] Uganda Climate Action Report, 2016. Resilience and Economic Inclusion Team. Irish Aid 2017.

[4] Anonymous 2021. https://climateknowledgeportal.worldbank.org/country/uganda/climate-data-projections?variable=pr

[5] GoU, 2015. The Government of Uganda Intended Nationally Determined Contributions (INDC), 2015.

inhabitants and ecosystems.

9. Within the catchment, there is high variability in precipitation timing coupled with intermittent droughts that often alter available soil moisture and scotch pastures for livestock thereby altering crop and livestock production. With growing population pressure, droughts associated with climate change are not only increasing food and water stressors, but also stimulate population scale water insecurity catchment-wide[6]. Other climate effects in the catchment include, more extreme and frequent periods of intense rainfall, erratic on-set and cessation of the rainy season as well as more frequent episodes of drought.
10. The mean annual rainfall in Katonga catchment ranges between 800mm-1300mm (based on data measured in the period 1950-2004) (MWE, 2018). The monthly rainfall patterns in the catchment portray two wet seasons that occur from March to May, and September to December. The maximum rainfall is recorded during April and October- November, while the driest months are observed during July-August and January-February. Based on CHIRPS data, there has been unpredictable annual rainfall trends in the catchment in past 20 years (Figure 1). The rainfall patterns are variable in both time and spatial distribution. As heavy precipitation events are anticipated to increase, the risk of disasters such as floods is expected to escalate.
11. The Katonga population thus lives in uncertain weather circumstances, which sometimes cause extremities leading to economic losses of crops and animals, depriving communities of a better livelihood due to variabilities in temporal and spatial distribution of rainfall over the catchment (Figure 1)[7].

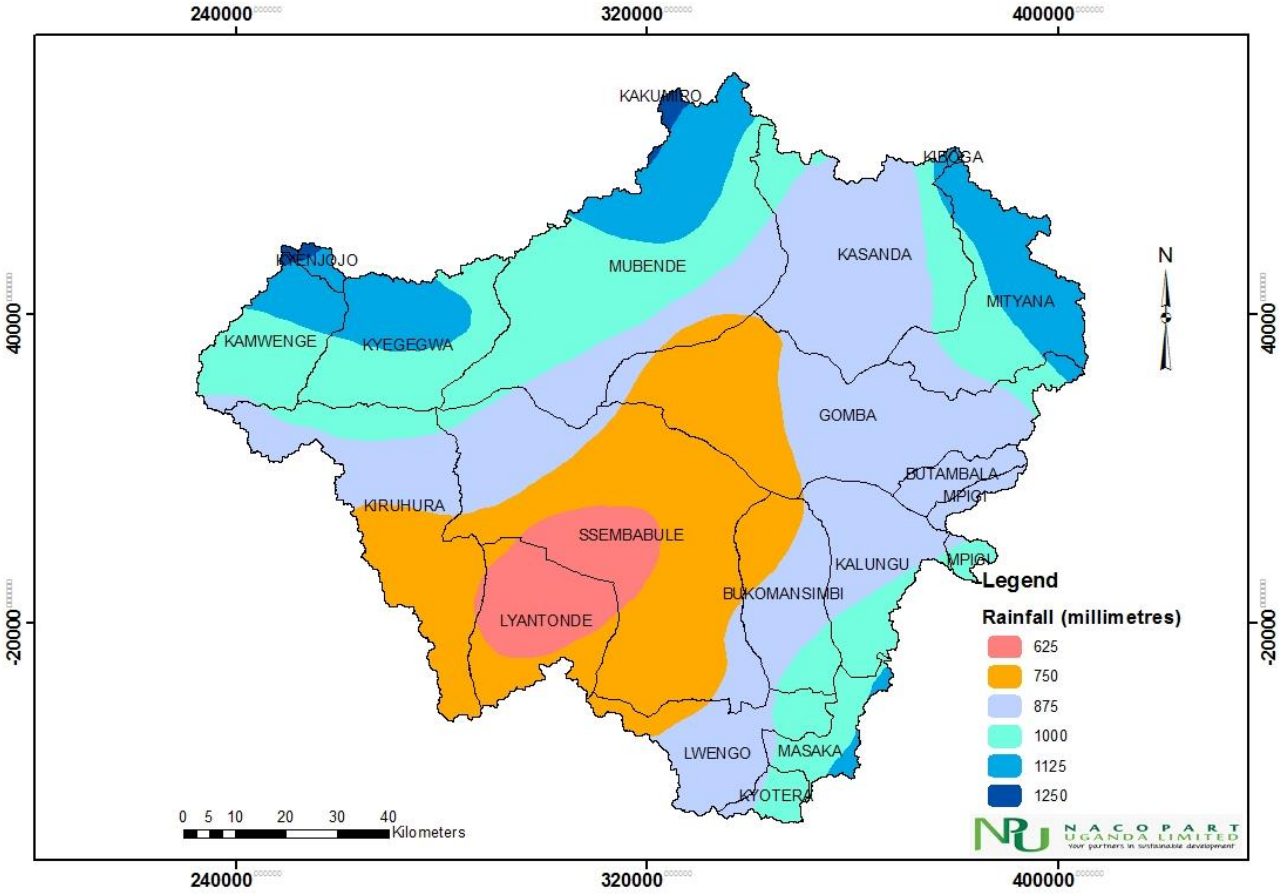


Figure 1: Amount of rainfall in Katonga Catchment

12. Within the Victoria Water Management Zone (VWMZ), the mean annual minimum temperature is projected to substantially increase by 1.3 – 4.5°C and warming in the colder season (June to September) by 1.7 – 2.9°C under RCP 4.5, and 4.9°C and RCP 8.5 by 2085. Based on temperature data sourced from the USGS FEWSNET for general, projects, the mean annual maximum temperature is projected to increase throughout the Lake Victoria Basin (LVB) from 1.0 –1.5°C by 2030, and 1.2–1.8°C by the year 2050. Similarly, the mean annual minimum temperature is projected to increase over the basin from 1.2–1.9°C by the 2030s, and 1.5 –2.4°C by the year 2050 (Lydia et al. 2019).

[6] Ministry of Water and Environment, (2018). Katonga Catchment Water Resources Development and Management Plan
[7] ICPAC, 2015. Climate Prediction and Applications Centre.

13. Specifically, Katonga catchment temperature data (MODIS) retrieved for the period 2000-2020 conforms to the warming trend described (Figure 2). Within this period, the variance in mean annual temperatures was unpredictable. Due to the warming trend, there is a potential for an increase in the frequency of extreme events (e.g. heavy rainstorms, flooding, droughts, etc.).

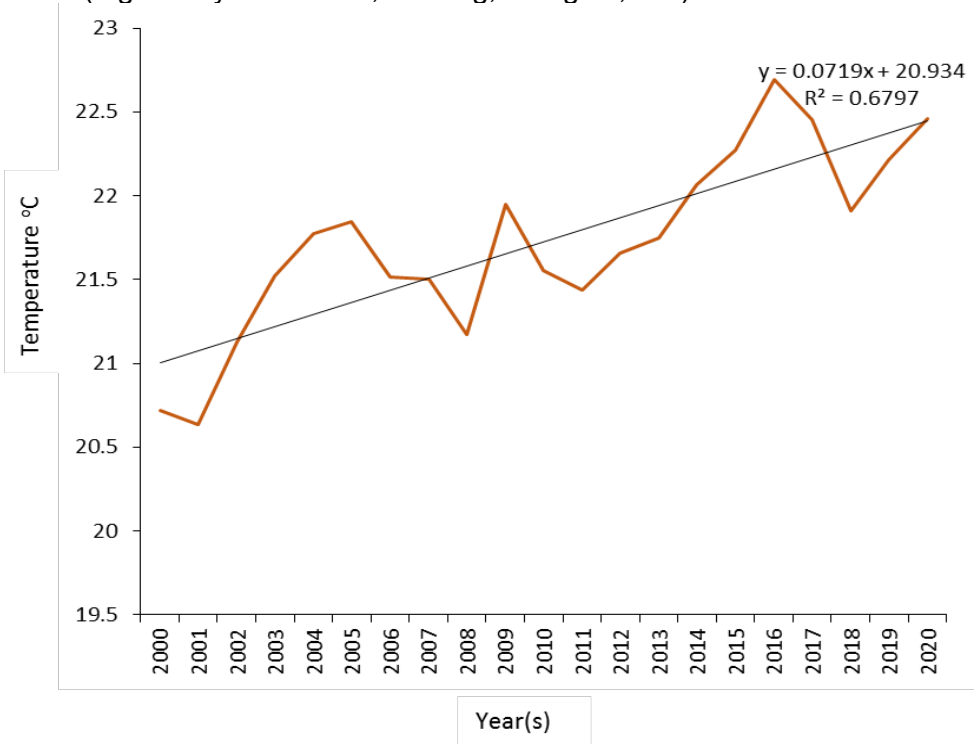


Figure 2: Katonga Catchment mean annual temperature over time

14. At a broad scale, Uganda is facing drastic reduction in woodland and tropical high forests at an alarming rate, due to deforestation, forest degradation and unsustainable agricultural farming practices. For instance, pitsawing/logging, burning to access high value timber, and to create more land for agriculture, industrial development and settlements are the most common human activities that contribute to ecosystems degradation[8].
15. Uncertainties in crop production for humans and forage production for livestock have put water at the intersection of most issues in the catchment, and pushed the desperate population further into wetlands and forest reserves for crop production and livestock grazing, thereby exacerbating the complexity of the problems. Stakeholders have since observe that the timing and duration of crop growing seasons have changed which has reduced the reliability and yields of food production (MWE, 2018).
16. With such a plethora of issues, admittedly, water lays at the intersection of all the challenges in Katonga catchment. Paradoxically, while improved agricultural productivity implies improvement in the quality of life, the current climate change related challenges demonstrate an increased strain on the environment and already scarce water resources especially considering that agriculture is the economic mainstay in the catchment.
17. Water stress is widespread in the catchment, although the extent of severity differs between and within sub-catchments. For instance, stakeholders in Bubanda Parish, Kigando Sub-County reported having spent 3 years without rain. According to the Water Supply Atlas, only 45% (18,798) of the population of 41,943 in Madudu Sub-County, Mubende district have access to safe water. What is clear is that the catchment faces severe climate change effects, associated with declining agricultural production and severely scarce water and environmental resources that either individually or collectively undermine prospects of long-term stability and sustainable growth.
18. Climate change continues to exacerbate the impacts of existing threats on the catchment's communities and ecosystems with water stress mostly rooted in prolonged droughts. Results from water resource assessment revealed that the wet months (March–June) have well sustaining water flows to averagely meet the domestic and Industrial water requirements (MWE,2018). Furthermore,

[8] MWE, IUCN. 2016. Forest Landscape Restoration Opportunity Assessment Report for Uganda. Xi+ 41pp.

over 80% of the domestic water demand is met for most of the sub-catchments most of the time in a year except during the dry season. The situation in sub-catchment hotspots also shows that the current domestic water demand deficit is widespread. Most crucially, agriculture water demand is the most severely affected by water stress.

1.2 Socio-economic context

19. Uganda faces several developmental constraints, including high population growth (3.3%), post-conflict conditions in the north, soil erosion and degradation, among others. Population growth projections reveal the highest population growth (946,483) in areas of Mubende and lowest population growth (26,159) estimated for areas within Kyenjojo District. These trends suggest that the population could even double by 2040 with more than half of the population below the age of 14 years[9]. Increasing variability in rainfall and rising temperature will present an additional stress on development in the country, especially with its high dependency on rain-fed agriculture[10].
20. In addition, the rising living standards, together with rapid population growth, are creating new trans-boundary challenges to the catchment in terms of water and river basin management, livelihood options and sub-national migration flows. There are currently major initiatives being implemented and planned throughout the Katonga Catchment to promote further regional economic growth and employment. Such initiatives include the development of more roads, railways, dams (mainly for hydropower) and other infrastructure, particularly in areas previously dominated by natural resources and agriculture-based livelihoods.
21. The increase in the population and upcoming developments is triggering pressure on natural resources reflected in deforestation and ecosystems degradation such as degradation of wetlands for food and water. With a young population, pressure on water and related resources is likely to escalate. The effects of agricultural expansion coupled with intensive land fragmentation, unsustainable crop farming practices, overexploitation of natural resources in Katonga catchment, has led to: i) increased competition and costs for resources and land; and ii) a growing number of ecological constraints. Consequently, agricultural livelihoods and food security in the Katonga catchment are threatened.
22. Similarly, the amount of water required for food and energy production, as well as for domestic and industrial use, is increasing exponentially. The overexploitation and degradation of ground and surface water sources are also common. Such transformations in the food-water-energy relationships worsen the livelihood challenges for the agrarian communities throughout the catchment.
23. In addition, about 25.5% of the Katonga catchment population live in poverty, majority of which are small-scale farmers with land holdings ranging between 0.5ha and 1ha. Annual crops grown include mainly millet, maize, beans and sweet potatoes. Land fragmentation is common due to high population density especially in hilly areas thus, leading to severe degradation of shallow soil areas.
24. Overall, the catchment population depends on the natural environment for their livelihoods and most especially for food and biomass energy. Communities have also drained wetlands in some areas for cultivation and thickets especially in drier areas for charcoal burning. Some activities in the catchment have directly impacted on the availability and sustainability of water resources especially land use change for agricultural production through deforestation and forest degradation, and reclamation of wetlands.

1.3 Environmental context

25. Although there is rapid development that reflects socio-economic and political stability occurs within the catchment, widespread environmental changes are evidently noticeable in the Katonga catchment. The environmental changes are influencing heavily on the people who rely on ecosystem goods and services for their livelihoods. Since agriculture is the economic mainstay in the catchment, crop farming is widely practiced and subsistence farming is the most predominant. Commercial agriculture also exists with crops such as maize planted on a large-scale in some areas. However, increasing agriculture over other land uses is impacting heavily on the ecosystems in the catchment. The major issues related to environmental change in the Katonga catchment include among others;
    - *Deforestation and forest degradation*; excessive loss of forest cover evidenced by the reduction in the spatial extent of the forested area from 63% (8,739km^2) in 1999 to 5% (734.3km^2) in 2017,

[9] UBOS 2014. Uganda Bureau of Statistics, Kampala, Uganda
[10] Climate Change Profile Uganda, 2018. Ministry of Foreign Affairs, Kampala.

of the total land area in the catchment.

- *Wetland reclamation*; excessive drainage of wetlands, riverbanks and lakeshores in the catchment through agriculture, mechanized industrial scale sand mining, plantation of eucalyptus, and brick making among others.
- *Soil erosion;* rampant soil erosion especially in hilly parts of the catchment such as Kalungu, Lyantonde, Mubende, etc., from lack of soil and water management infrastructure.
- *Water Stress*; Severe water stress characterized by domestic and agricultural water demand deficit. Water stress underlined by prolonged droughts that lead to drying up of surface and ground water sources such as boreholes, valley tanks, valley dams, streams, etc., leaving people and livestock desperate.
- *Prolonged droughts*; as part of the cattle-corridor, the catchment is characterized by droughts. Droughts are reportedly becoming severe due to climatic change effects, excessive deforestation, and forest degradation. They are associated with severe water scarcity, reduced pastures and overgrazing, school dropouts, wetland encroachment and wildfires.
- *Food insecurity*; due to poor agricultural harvests leading to decline in yields of staple foods, or even total crop failure. Major drivers of food insecurity are animal and crop pests and diseases, prolonged droughts, and human diseases.

26. In response to the environmental change, socio-economic and climate change related challenges highlighted, Uganda has made important and visible strides in bringing environment into the development agenda. Thus, subscribing to the principles of sustainable development as illustrated in the National Development Plan II and III (NDP II & NDP III) and the National Environment Management Policy. In addition, notable of Uganda's efforts, is the overall devolution of power by the center to the lower levels of government including decentralization of environmental and natural resources management to the districts and lower levels of local government. Subsequently, the Ministry of Local Government through the local Government Development Programme and other natural resource sectors have made various efforts towards improved Environment and Natural Resources Management (ENRM). Furthermore, for communities' benefit from water and environment related interventions, the Ministry of Water and Environment (MWE) has a clear management structure from the MWE Headquarters to Water Management Zones (WMZ) that are made up of catchment and sub-catchment management Committees. This structure is comprehensive to the extent that the stakeholders at the lowest units benefit from government and other project interventions in their localities.
27. However, despite these government innovative initiatives, progress on the ground remains deficient, visibly parchy and generally weak as well as lacking in many aspects. The populations and ecosystems in Katonga catchment have largely remained vulnerable to the impacts of environmental change, socio-economic and climate change related challenges.
28. Communities and ecosystems have remained at risk from the effects of the increasing frequency and intensity of extreme weather events of droughts and flash floods in recent years due to variabilities in precipitation timing that alters crop production cycle, food insecurity and increased water scarcity among communities in the catchment. With the predicted escalation of the risk of disasters including floods and landslides, the Katonga catchment population continues to live in uncertain weather circumstances, which sometimes cause extremities leading to enormous economic losses of crops and livestock depriving the populations of a better livelihood.
29. Unfortunately, even when faced with such climate change related risks and disasters, the capacity of the most vulnerable community members among grass root communities remains extremely limited due to inadequate interventional resources from Government as well as limited livelihood options at grass roots. The proposed project seeks to improve the resilience of communities and fragile ecosystems to climate change impacts through promoting appropriate water infrastructure investments, nature- based solutions and knowledge management for experiential learning and information sharing.
30. The proposed project fits within the scope and aspirations of Uganda's Vision 2040, NDP II and NDIII and the Climate Change Policy, 2015. The country aspirations enshrined in such policy and planning frameworks focus among others on reducing the degradation of environment and natural resources and ensuring improved ecosystem services delivery as means of enhancing the resilience of vulnerable populations especially in fragile ecosystems. Globally, the project contributes to attainment of the Sustainable Development Goals (SDGs), specifically SDG 6 and 17 that aim at providing access to clean water and sanitation, and promoting partnerships for developing the knowledge base, and effective capacity development.

1.4 Description of Katonga catchment project sites

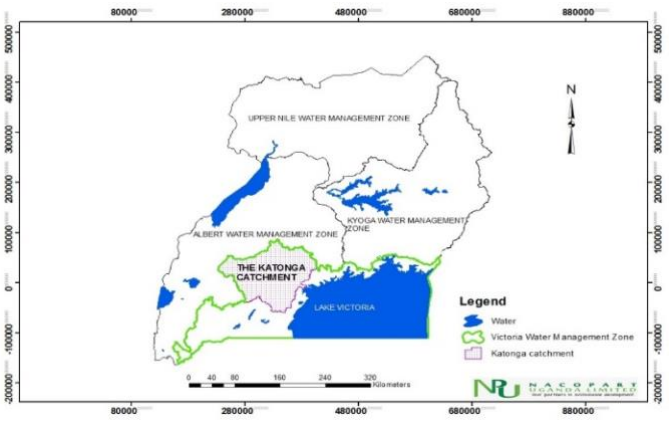
1.4.1 Geographical location and area coverage

31. The project will be implemented in Ruyonza, Kyera and Rwabenge Sub-Counties in Kyegegwa, Sembabule and Kalungu districts that are located in the Catchment. The Sub-Counties selected lie in the upper, middle and lower sub-catchments in the Katonga Catchment is found within the dry belt of Uganda commonly referred as the cattle corridor. Specifically, the project sites have been considered for project implementation because of their vulnerability to high rainfall variability, water stress, drought, flash floods and environmental change related challenges. Overall, the following criteria were used in selecting the sites:
    - The sites fall within the cattle corridor which is prone to drought and impacts of climate change particularly high rainfall variability
    - The fragile ecosystems including wetlands, river banks and other ecosystems therein have a high level of degradation
    - There is high influx of people that exert pressure on the limited and degraded natural resources thereby increasing the vulnerability of populations therein to climate change.
    - There are gazette refugee settlements that need interventions for managing the impacts of their settlements and climate change.
    - The sites have minimally (if any) benefitted from any environment related projects to enhance communities' and ecosystems' resilience to climate change impacts.
32. Katonga catchment lies in the south-central part of Uganda, about 0°13'N 30°39'E near the Katonga wildlife reserve. The catchment is surrounded by a multitude of ecosystems, ranging from lakes, rivers, swamps, wetlands, among others (Figure 3). These ecosystems comprise the fragile ecosystems in the catchment. Katonga River acts as a channel connecting Lake Victoria and Lake George, reflecting that its catchment previously drained into Lake George. However, the regional uplifting events between the two lakes (the Albertine rift) caused the swampy region to southwest of Lake Wamala.
33. Katonga catchment has eight delineated sub-catchments (Table 1). The primary purpose of delineating the catchment into smaller sub catchments was to ease basic understanding of its complexity from a hydrological perspective. Administratively, Katonga catchment is composed of 16 districts. Table 1 shows the sub-catchments in Katonga Catchment.

Table 1: The Sub-Catchments of Katonga Catchment

Code Name	Sub-Catchment Name	Area size (Sq.Km)
KAT1	Nabakazi	2116.1
KAT2	Upper Katonga	1750.6
KAT3	Mid-Katonga	2211.9
KAT4	Kakinga	1129.2
KAT5	Bwogero	806.2
KAT6	Wamala	2575.6
KAT7	Kyogya	1497.9
KAT8	Nabajjuzi	1749.5

Source: Ministry of Water and Environment, Kampala-Uganda



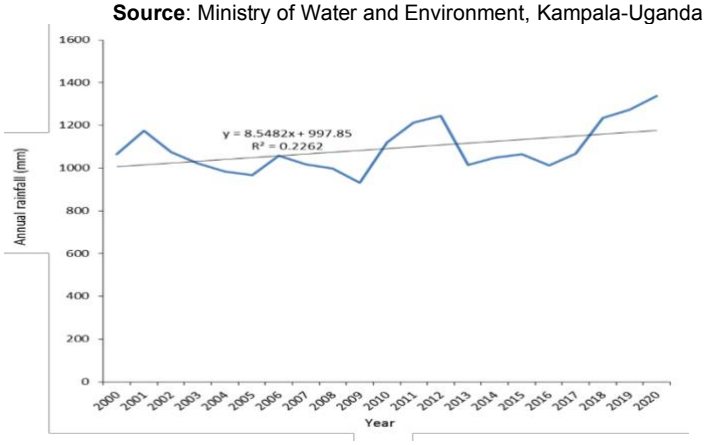


Figure 3: Location of project sites in the Katonga Catchment in Uganda

Figure 4: Katonga Catchment annual rainfall over a twenty-year period

1.4.2 Climate

34. The Katonga catchment that falls within Uganda's cattle corridor exhibits semi-arid characteristics. These include: i) high rainfall variability; ii) periodic late onset rains/droughts; and iii) historical reliance on mobile pastoralism as coping strategy to resource variability. The mean annual rainfall based on data measured in the period 1950-2004 ranges between 800mm-1300mm (MWE, 2018). Monthly rainfall patterns in the catchment portray two wet seasons that occur from March to May, and September to December. Maximum rainfall is recorded during April and October- November, while the driest months are observed during July-August and January-February. Based on CHIRPS data over, there has been unpredictable annual rainfall trend in the catchment in past 20 years (Figure 4). The rainfall patterns are variable in both time and spatial distribution. Heavy precipitation events are anticipated to increase, which would escalate the risk of disasters such as floods (ICPAC[11], 2015). The Katonga population thus lives in uncertain weather circumstances, which sometimes cause extremities leading to economic losses of crops and animals, depriving communities of a better livelihood.

35. The mean annual maximum temperature is projected to increase throughout the Lake Victoria Basin (LVB) by about 1.0–1.5ºC by 2030, and 1.2–1.8ºC by year 2050, while the mean annual minimum temperature is projected to increase over the basin by 1.2–1.9ºC by the 2030s, and 1.5 –2.4ºC by year 2050 (Lydia et al., 2019). Within the period 2000-2020, the variance in mean annual temperatures was unpredictable. As a result of the warming trend, there is a potential for an increase in the frequency of extreme events (e.g. heavy rainstorms, flooding, droughts, etc.).

1.4.3 Topography

36. The landscape is generally rocky with various rocky outcrops (Figure 5) and steep slopes. Such a landscape is inherently sensitive to any changes in climate. It is susceptible to water erosion, especially after the vegetation cover has been disturbed, usually in the up-slopes and mid-slopes. On the other hand, the topography makes the down-slope more sensitive to flooding and silt deposition. Owing to the flat flooding areas, the catchment has satellite wetlands that cover an area of about 2,478km^2. The principal mouth of the Katonga River enters L. Victoria near Lukaya in Kalungu district (coordinates: 0°07.3'S 31°54.8'E).

Figure 5: Rocky outcrops within the Katonga Catchment in Kyegegwa area

[11] IGAD Climate Prediction and Applications Centre

1.4.4 Geology and soils

37. Following the FOA soil classification, the predominant soil type in Katonga catchment is Acric Ferralsols, followed by Luvisols, Gleyic Arenosols occupying mostly wetlands, Planosols and Dystric Regosols (Figure 6). Parent rock for most of the catchment is comprised of Toro and Basement complex granites, quartz mica schists, Toro arkose, Toro gneisses and granites. Other parent rock material include Toro quartzites, sandstones, schists and phyllites; Phyllites and quartz and schists (Figure 7). The soils in the catchment are generally fragile and may be considered relatively rich in nutrients. They are relatively fertile and thus support agricultural activities. They support the growth of crops including Maize, and Coffee. However, the soils are loose, and unstable. Such soils are thus vulnerable to erosion, especially where land management measures are not appropriate for soil and water conservation.

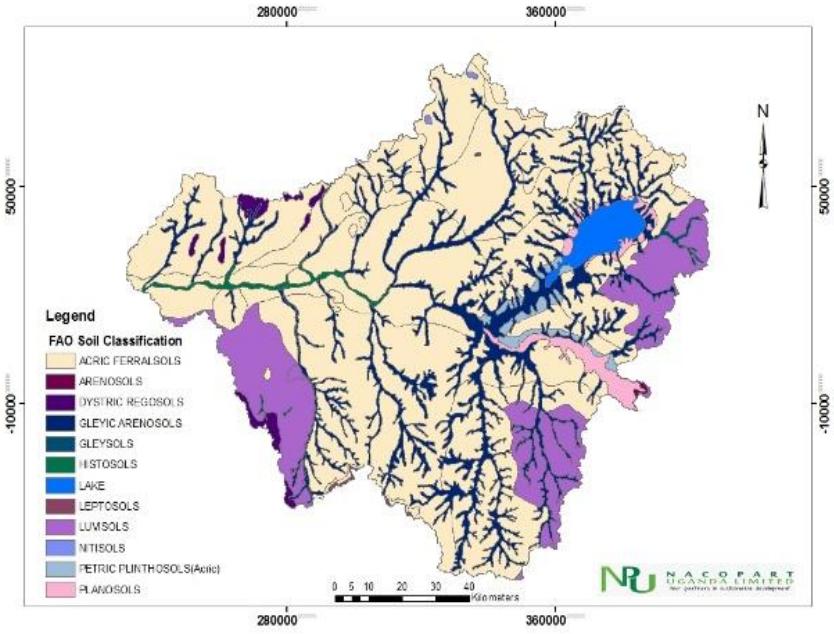


Figure 6: Katonga soil classification

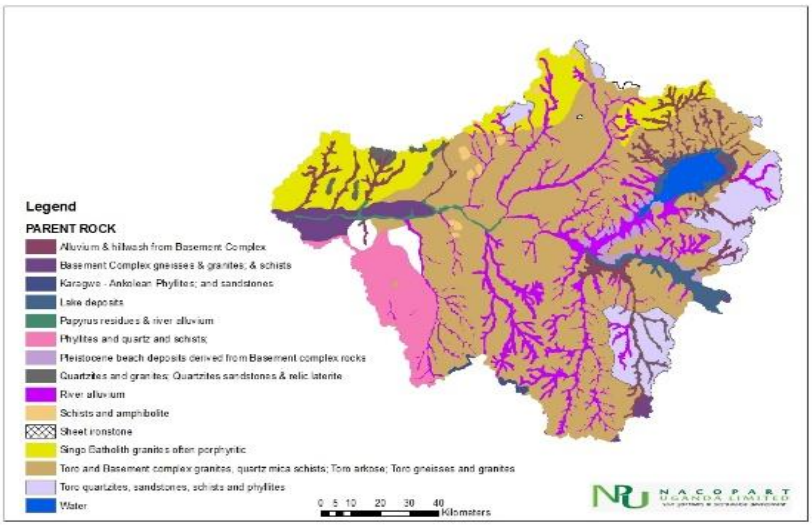


Figure 7: Geology of Katonga Catchment

1.4.5 Vegetation/ land use/land cover

38. River Katonga and its basin traverse different remnants of vegetation types identified and classified according to Langdale-Brown (1964). The northern part is mostly dry *Combretum* savannah, whereas the southern part is mostly Forest/Savannah mosaic. On lower elevations are Papyrus/*Miscanthidium* swamps, and *Sorghastrum*/*Echinochloa* grasslands. These now isolated vegetation types in farmlands are highly degraded, or occurring in smaller fairly intact patches. The key land cover types include rain fed farmland, isolated central and local forest reserves, a wildlife reserve, wetlands, forest plantations and irrigated farmland (Figure 8). Based on spatially aggregated multipurpose land cover database for Uganda AFRICOVER (2015).

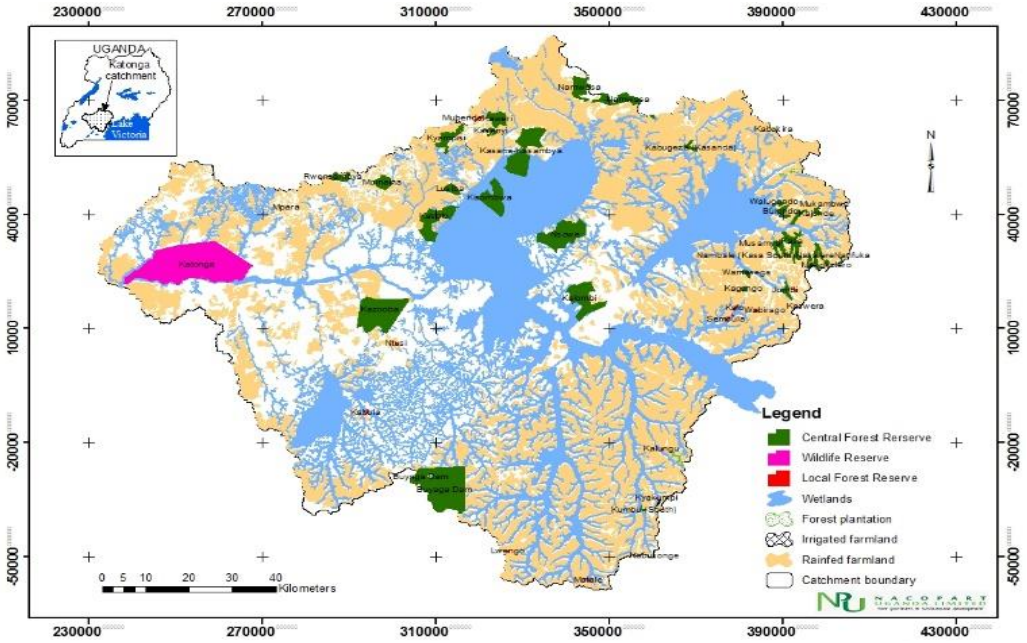


Figure 8: Land use/land cover in Katonga Catchment

1.4.6 Biodiversity

39. Katonga catchment is known to have a viable Sitatunga (*Tragelaphus spekei*) population inhabiting the Katonga Wetland System. The IUCN Global Red List categorizes *Tragelaphus spekei* as a species of Least Concern, but at National Level, it is categorized as a vulnerable species as a result of habitat loss (wetland reclamation), hunting and unsustainable harvesting of the plant species that constitute its food (MTWA, 2018)[12]. The species has low resilience to these threats and this partly explains the declining populations of Sitatungas in Uganda. Within the catchment is the Katonga Wildlife Reserve that habours high population of waterbucks, Hippos, Elephant, buffalo, bushbuck, reedbuck and birds. In 2015, about 60 Impalas and 5 Zebras were successfully translocated to the reserve in order to restock and boost animal populations for tourism. The population of impalas now stands at 300 individuals. The current bird checklist is over 150 including species specific to wetlands, savannah and forests. Other mammals include Black and White Colobus Monkey, the River Otter, and Olive Baboon, Uganda Kob, Leopard, and duiker and chevrotain. The Katonga Wildlife reserve is in addition, home to various reptiles, amphibians and butterflies (UWA, 2019).

1.4.7 Population

40. The population of the Katonga catchment is estimated at 3,020,638, of which 1,524,887 (50.5%) are female, and 1,495,751 (49.5%) males (UBOS, 2014). Whilst the total number of households in the catchment are estimated to be 678,076. The highest population growth (946,483) is in areas of Mubende, while the lowest population growth (26,159) is estimated for areas within Kyenjojo District. The trend suggests that the population could even double by 2040 with more than half of the population below the age of 14 years. The population demographic for the districts indicate an increasing

[12] Ministry of Tourism, Wildlife and Antiquities (MTWA), (2018). Red List of threatened species in Uganda.

population with a prediction of about 4,156,774 people expected in 2040 (UBOS, 2014). The total population in the project sites of Rwabenge[13], Lwemiyaga (Kyeera Sub-County)[14] and Ruyonza Sub-County[15] in Kalungu, Sembabule and Kyegegwa districts respectively is 139,011 people (Table 2).

Table 2: The population segregated by sex in the targeted project sites

Sub-catchment strata	Districts	Sub-Counties	Population (No. of People)		
			Males	Females	Total
Upper stream Katonga	Kyegegwa	Ruyonza	23,000	21,100	44,100
Mid-stream Katonga	Sembabule	Lwemiyaga (Kyera)	30,977	29,664	60,641
Downstream Katonga	Kalungu	Lwabenge	17,001	17,269	34,270
Total			**70,978**	**68,033**	**139,011**

1.4.8 Livelihoods

41. The Katonga catchment communities are dependent on rain-fed subsistence farming, livestock rearing, fishing and to a lesser extent Tourism for their livelihoods. Crops grown in the catchment include Maize, Bananas, Beans and coffee (Figure 9). Other economic activities include bee keeping (apiary management), mushroom growing, physical settlements, woodlots and quarrying/mining activities (i.e. sand, stones and phosphate/vermiculite). Katonga Wildlife Reserve and Bigobyamugenyi stand out as the key tourist attraction, in addition to the Sitatunga populations that are much easily seen in the Katonga wetland system than in any other wetland ecosystems in Uganda.

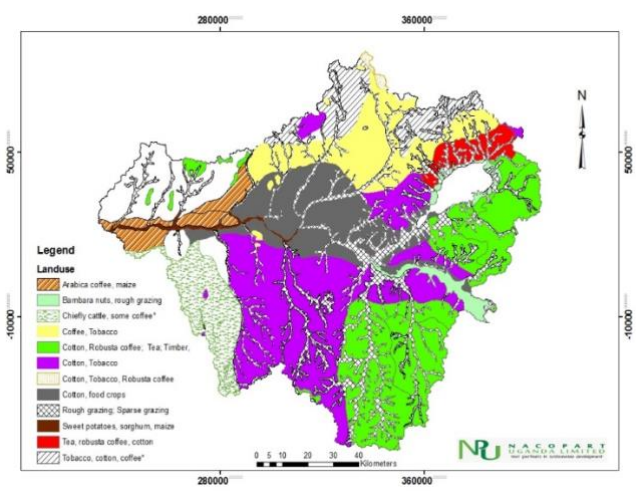


Figure 9: Main livelihood sources in the Katonga Catchment

1.4.9 Climate change vulnerability and threats

42. The Katonga catchment is considered as one of the most climate-vulnerable regions of Uganda. The communities experienced a range of climate change risks including drought, flooding and soil erosion. Most of the communities experience drought as the main climate risk they are exposed to. The drought is however, more severely experienced in the upper catchment. During periods of drought, the amount of water flowing through the River Katonga downstream decreases leading to reduced water volumes for the sources, hence affecting the agricultural and domestic activities adversely. Actually, during drought, human and livestock populations and ecosystems are faced with inadequate water resources due to climate change aggravated water stress. There is scarcity of water for domestic use (Figure 10).

[13] UBOS, 2017. The National Population and Housing Census 2014 – Area Specific Profile Series, Kampala, Uganda
[14] https://www.ugandainvest.go.ug/wp-content/uploads/2019/06/UNDPUg1720-DistrictProfile_Kyegegwa.pdf
[15] https://www.citypopulation.de/en/uganda/western/admin/kyegegwa/SC1022__ruyonza/

Figure 10: Children lining up to fetch water at a borehole in Ruyonza, Kyegegwa district

43. During the heavy rains, there is flooding which is severest in the lower catchment, with soil erosion mainly occurring in the upper and middle catchments. The floods are destructive, sometimes cutting off travel between localities (Figure 11). Communities are affected when floods sweep away access routes to development activities in the region. Within the last 20 years, the communities have noticed changes in climatic factors including rainfall, drought, temperature and winds. The severity of changes in climate is generally perceived as high.
44. Changes in rainfall patterns, followed by drought occurrence, high prevalence of strong winds and general increase in temperatures among others noticed are currently the most experienced and reported impacts of climate change. Such changes negatively affect communities. The most commonly reported effects are low crop yields, inadequate food/food insecurity, and loss of farmlands. Several economic activities undertaken by the households are also prone to climate-related hazards. The most affected was crop farming, followed by livestock keeping, transport service e.g. Boda-Boda, Business/trade, Charcoal burning, and Extraction of resources from the wild.
45. The communities believe that with eminent prevalence of climate related risks affecting their sources of livelihoods, they are most likely prone (likely to be affected) to climate change related hazards. There are a number of factors that render the Katonga Catchment sensitive to changing climate conditions as perceived by the communities. For instance, the landscape is generally rocky with various rocky outcrops (Figure 5) and steep slopes. Such a landscape is inherently sensitive to any changes in climate. It is susceptible to water erosion, especially after the vegetation cover has been disturbed, usually in the up-slopes and mid-slopes. On the other hand, the topography makes the down-slope more sensitive to flooding and silt deposition.

Figure 11: Broken bridge due to flooding

46. The soils are also generally fragile and may be considered relatively rich in nutrients. They are relatively fertile and thus support agricultural activities. They support the growth of crops including Maize, and Coffee. However, the soils are loose, and unstable. Such soils are thus vulnerable to erosion, especially where land management measures are not appropriate for soil and water conservation.
47. The Katonga Catchment is characterised by a rapidly increasing population. The high population density, for example following the settlement of refugees, presents a challenging and extremely high demand for ecosystem services especially from the natural resources as alternative sources of livelihoods. Due to the increased demand for resources, communities encroach on forests uphill, wetlands down slope as they convert these lands to agricultural crop farmlands and for settlement. Land shortage is increasingly making these areas sensitive to climate change. The high population densities are also increasing the sensitivity by exacerbating soil/land degradation through over-cultivation.
48. Within the Katonga Catchment, deforestation is rampant with a matrix of cropland and settlements. These are testimony to the habitat degradation in the region. One example is the Buyaga Central Forest Reserve in Mpumudde Sub County, Lyantonde District that the communities have encroached on causing severe deforestation. Additionally, the high populations are increasing the demand for fuel thus leading to rampant deforestation for fuelwood and charcoal derived from within and outside the Protected Areas.
49. The value attached to natural resources and or ecosystems in general influences the sensitivity to climate change. People who care less about the natural resources like forests and wetlands are more insensitive to climate change hazards. In some parts of the Katonga Catchment, the relations of communities with Environment Protection staff (e.g. NEMA) remain poor in some cases. What the staff may define as genuine law enforcement is perceived as harassment, as people are sometimes arrested and punished for indulging in illegal activities. As much as the dependence of the communities on natural resources is high, the local communities sometimes feel they are not part of the resource system and as such cannot care for it.
50. Wild fires are a common phenomenon, particularly caused by prolonged drought, and increased human activities such as cattle grazing. More fires will lead to changes in vegetation composition as certain

plants become more competitive with decreasing moisture and increasing fire frequency, which will affect plants and animal distributions. The arrival of invasive alien species may be associated with increased fires and the associated degradation. In adapting to the changes, a number of capacities and resources are necessary to enhance resilient communities and ecosystems to climate change through adaptation.

51. The key actions taken to deal with climate change occur at the individual, household and community levels. The communities adapted to the climate related risks by implementing different measures including planting trees, terracing, mulching, fallowing, small-scale irrigation, and crop rotation among others. Numerous measures are undertaken but they were reportedly effective up to only about 60%. Most of the community perceived generally that measures against soil erosion were the most effective compared to actions against drought and flooding. Some of the actions undertaken by the communities are quite innovative such as the 'Roof Top Gardens' (Figures 12 and 13).

Figure 12: "Roof Top Gardens" a 3 in climate change adaptation measure

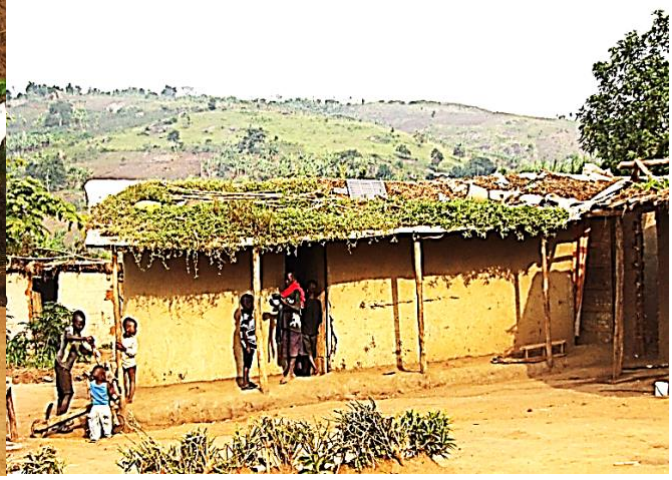


Figure 13: Solar Panel as an alternative energy source

52. In addition, institutions (government and non-governmental) also play vital roles in providing policy, technical and financial resources to adapt to climate change. However, the technical and financial resources from government and NGOs are largely inadequate. Therefore, the capacity of individuals and communities to adapt to climate change impacts remains low posing great challenges to sustainable management of the fragile ecosystems and peoples' livelihoods. Based on this background, it is clear that populations and ecosystems are vulnerable to climate change in the Katonga Catchment leading to impacts such as soil erosion, disease outbreaks, flooding and drought. It is evident that efforts aimed at improving the resilience of communities and ecosystems in Katonga are needed.

2. Project / Programme Objectives:

53. The overall goal of the project is strengthening the resilience of communities and fragile ecosystems to climate change impacts through promoting appropriate water infrastructure investments and nature-based solutions.
54. The specific objectives of the project are to:

    (i) Strengthen the capacity of key grass root stakeholders for climate change adaptation
    (ii) Promote appropriate water storage technologies for increased water and food security
    (iii) Support establishment of nature-based enterprises for improved community livelihoods
    (iv) Support knowledge management and information sharing

3. Project / Programme Components and Financing:

55. The project has four components that target to strengthen the resilience of communities and fragile ecosystems. The four components are:

i. Strengthening capacity of key grass root stakeholders
ii. Promoting appropriate water storage technologies
iii. Supporting nature-based enterprises for sustainable socio-economic development
iv. Supporting knowledge management and information sharing

Table 3: Budget summary for components, outcomes and outputs for the project

Project / Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1. Strengthening capacity of key grass root stakeholders	1.1.1Capacity building program for key grass root stakeholders established	1.1 Capacity of key grass root stakeholders in implementing climate resilient development initiatives strengthened	122,362
	1.2.1 Community group leadership structure orientated in leadership and management	1.2 Governance of natural resources strengthened	166,834
2. Promoting appropriate water storage technologies	2.1.1 Innovative and agreed upon multi-stakeholder water storage technologies adopted	2.1 Increased water and food security	603,196
3. Supporting nature-based enterprises for sustainable socio-economic development	3.1.1 Nature-based enterprises promoted	3.1 Increased income for improved stakeholder livelihoods	420,226
	3.1.2 Market linkages of products from nature-based enterprises established		128,000
	3.1.3 Entrepreneur skills of stakeholders enhanced		88,000
	3.2.1 Fragile ecosystems conserved	3.2 Enhanced ecosystem health	286,643
4. Supporting knowledge management and information sharing	4.1.1 Knowledge management and information sharing system developed	4.1 Lessons and good practices shared and adopted	238,000
Total activity budget			**2,053,261**
6. Project Execution cost			30,799
7. Total Project Cost			2,084,060
8. Project Cycle Management Fee charged by the Implementing Entity (8.5%)- (This includes project monitoring and management, furniture, computer and its accessories) and one project vehicle to support in coordination of field activities)			164,940
Amount of Financing Requested			**2,249,000.00**

4. Projected Calendar:

Milestones	Expected Dates
Start of Project/Programme Implementation	October 2021
Mid-term Review (if planned)	April 2023
Project/Programme Closing	October 2024
Terminal Evaluation	December 2024

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project components and concrete adaptation activities

56. The proposed "Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda (RECOFE project) has four components with corresponding adaptation measures that will contribute to resilience to climate change of communities and fragile ecosystems in the Katonga catchment. The components and adaptation measures are presented.

Component 1:
Strengthening the capacity of key grass root stakeholders for climate change adaptation

Baseline situation

57. Climate change affects people and ecosystems through its impacts and therefore, requires a concerted effort by all including the grass root stakeholders. It disrupts ecological systems and has serious negative consequences on agricultural production and productivity, forests, water supply, health systems and overall human development. The objective of strengthening the capacity of key grass root stakeholders for climate change adaptation is to ensure that they can address climate change causes and impacts through appropriate measures, while promoting sustainable development. Human-induced global warming is caused primarily by an increase in the atmospheric concentration of Green House Gases (GHGs), including water vapour, carbon dioxide (CO_2), methane, and nitrous oxide. Of these, the increase in CO_2 is of major concern because it is linked to widespread human activities, primarily fossil fuel burning and deforestation.
58. Grass-root communities are dependent on natural resources for their livelihoods, and this is impacting on the invaluable natural resources hence an increasingly complex task of incorporating climate change into their socio-economic activities. The capacity of grass root stakeholders affects their ability to anticipate, prepare for, detect, and respond to climate change impacts in their respective areas. Component one of this project therefore focuses on capacity development, encompassing actions that increase grass root stakeholders' ability to effectively enact climate change adaptation measures.

Proposed interventions

59. Component one is expected to strengthen the capacity of key grass root stakeholders to adapt to climate change in the catchment. The key grass root stakeholders targeted include: grass-root (lower level-communities), duty bearers (Catchment and sub-catchment management committees, Sub county extension staff, Local council secretaries of Environment, and Representatives from the Environment committees), Civil Society Organisations (CSOs) and the private sector. It is noted that similar interventions have been done in the project entitled "Enhancing Resilience of Communities to Climate Change through Catchment Based Integrated Management of Water and related resources in Uganda" (EURECCCA/OSS) project. The lessons learned in the EURECCCA/OSS project are critical to ensure successful implementation of interventions in the currently proposed RECOFE project in Katonga catchment.
60. The project will benefit from the guidelines developed under EURECCCA/OSS project for mainstreaming climate change into the catchment management plans by using the same guidelines to update the Katonga CMP. Furthermore, the EURECCCA/OSS project is the first of its kind to operationalize the catchment management structures that start from the catchment, sub-catchment to micro-catchment levels, and an approach that will be adopted during the implementation of this project. This approach will also help to manage the cost-effectiveness of interventions, as it will eliminate re-inventing the wheel. The specific aspects proposed for addressing the capacity development needs of the grass root stakeholders will be achieved through outcomes 1.1 and 1.2 and the outputs 1.1.1 and 1.2.1 presented below. The specific activities for the respective outcome and outputs are also presented accordingly.

Outcome 1.1: Capacity of key grass root stakeholders in implementing climate resilient development initiatives strengthened

Output 1.1.1: Capacity-building program for key grass root stakeholders established

Activities

- **Activity 1.1.1.1** Undertake capacity needs assessment in relation to climate change for key grassroots stakeholders. The assessment will support to collect the needs, priorities and challenges of the stakeholders to focus the intervention.
- **Activity 1.1.1.2** Induct and empower grass root-duty bearers with knowledge in climate change. Induction will contribute to preparing the stakeholders to the project activities before actual interventions start. While, empowering stakeholders will contribute to skilling them with the necessary knowledge. This will ensure ownership and hence, contribute to sustainability
- **Activity 1.1.1.3** Training in roles and responsibilities of the duty bearers at the grassroots. This is aimed at capacitating the targeted stakeholders to improve their management capability.
- **Activity 1.1.1.4** Facilitate tool kit development for mainstreaming climate interventions in development initiatives. The tool kit will provide reference and guide the climate change interventions.
- **Activity 1.1.1.5** Integrate Climate change issues into the Catchment Management Plan (CMP). Katonga catchment has an already existing CMP. However, climate change issues have not been integrated into the plan. Similar interventions have been done in the EURECCCA/OSS project. The proposed project will integrate the climate change issues and lessons learned from the EURECCCA/OSS project in the Katonga project.

Outcome 1.2: Governance of natural resources strengthened

Output 1.2.1: Community group leadership structure orientated in leadership and management

Activities

- **Activity 1.2.1.1** Facilitate the mainstreaming of Human Rights Based Approaches in climate change initiatives.
- **Activity 1.2.1.2** Facilitate communities in advocacy, lobbying and public relations through creation of dialogue platforms and conducting of climate change campaigns/dialogues. This task will aim at building the capacity of the targeted stakeholders to communicate and advocate for their concerns to the responsible bodies on a regular basis. For example, engaging with National Forestry Authority (NFA), Wetlands management personnel and officials from the National environment Authority (NEMA) among others.
- **Activity 1.2.1.3** Facilitate resource use negotiations and development of Management plans, Memorandum of Understanding (MoUs) between the communities and duty bearers of the natural resources. This task will concentrate on facilitating negotiations with communities and MWE, National Forestry Authority as well as wetlands personnel. Consultative meetings to initiate the application process to access resources and lodging their application to access the resources
- **Activity 1.2.1.4** Develop and strengthen the governance and leadership frameworks (including by-laws, ordinances and guidelines). This activity will focus on training new and existing groups on:
    - General roles & responsibilities, gender & conflict sensitivity
    - Stakeholder relationships to improve resource use management
    - Integration of cross-cutting issues for example, gender equality and HIV/AIDS
    - Internal governance of resource use committees (where they exist) to ensure equity and accountability in their operations
    - Accountability, managerial skills, group dynamics, conflict management, managing information, forest policies and policies governing other natural resources.

Component 2:
Promoting appropriate water storage technologies for increased water and food security

Baseline situation

61. The Government of Uganda through the Ministry of Water and Environment (MWE) has been establishing water supply schemes across the country to provide water for multipurpose use. The water has been majorly serving domestic, industrial, institutional and commercial demand, and to a smaller extent agricultural demand. Water supply has mainly been done due to communities' over reliance on rain fed agriculture that has become unsustainable due to escalating climate change effects. Government, through the Water for Production Programme, has been able to create a total storage volume of 38.865 million cubic meters through construction of surface reservoirs in the form of valley tanks and earth dams to store rainwater harvested for use especially during the dry seasons.
62. A number of feasibility studies and detailed designs for potential medium and large sized irrigation scheme projects are also being carried out across the country, to enable the establishment of irrigation infrastructure in a bid to boost agricultural production, food security and climate resilience. The water demand for the different users within the Katonga catchment shows that three main categories of water users are considered, including; domestic, industrial, and agricultural water use. Agricultural water use, as a broad category, includes water demands for livestock, irrigation, and fish.
63. During stakeholder engagements for developing the Katonga CMP, among the issues identified, water stress was top on the list for most of the sub-Catchments delineated. Water demand expressed as a percentage of the total demand, showed that domestic water use drew more water than all the other three categories, primarily because the current farming practices are reliant on rain and the irrigation requirements are minimal, only supplemental in nature. Industrial water demand in the Katonga catchment only demands a very small percentage (0.21%) of the total water demand. Water demand for fisheries is seen to be much more than for other demands aggregated under agriculture water demand, and irrigation demanding only 0.2% of the total agricultural requirement. The current combined water demand in the Katonga Catchment was estimated to be 53.71MCM with Domestic, agriculture, and industry demanding 41.9%, 57.9%, and 0.2% of the total demand respectively. The projected combined water demand for the year 2030 is 80.64MCM, an increment of about 50% from the baseline, while that of the year 2040 is 110.16MCM, an increment of about 105% from the baseline.

Proposed interventions

64. The project intends to establish and promote water storage technologies through Integrated Water Resources Management approach to enable both the conservation of the fragile ecosystems and communities to access adequate and sufficient water to ably engage in productive agricultural activities, consequently contributing to improved ecosystems' health and food security situation in the catchment. The specific aspects proposed for promoting water security storage technologies for grass root stakeholders will be achieved through outcome 2.1 and output 2.1.1 with the respective activities as presented.
65. .

Outcome 2.1: Increased water and food security

Output 2.1.1 Innovative multi-stakeholder water storage technologies adopted

Activities

- **Activity 2.1.1.1** Construct/rehabilitate agreed upon low cost and appropriate physical water storage facilities to address the challenges of water scarcity.
- **Activity 2.1.1.2** Facilitate development of simple biophysical water harvesting technologies for soil and water conservation to aid crop and livestock production. Consideration will be made to ensure that the technologies do not lead to land expansion that may encroach on the natural capital by increasing production per unit area.
- **Activity 2.1.1.3** Facilitate construction of micro-irrigation schemes as learning centres for sustainable use of water resources in line with the national water policy (1999) chapter 4 on water resources management, that provides management arrangements right from the national

to local level where under sub section 4.5 (v) highlights that water user groups will manage operate and maintain point water sources, and that community associations may also be formed for the purpose of managing resources such as wetland area, a fishpond or an irrigation scheme when such need arises. The sub section provides that existing local councils and local government chiefs will play a role in setting local priorities and enforcing bye laws, monitoring and mediating in water management; The National Irrigation Policy (2017) that promotes sustainable irrigation development to enhance food and livelihood security and reduction of poverty. Under sub section 1.6 of this policy, it is clearly stated that the irrigation policy serves as an overarching instrument for regulation of irrigation development in the country. Its mission is promotion of irrigation development and management to enhance water use efficiency for increased and sustainable agricultural production and productivity and profitability to ensure food security and wealth creation, Section 2.6 of the policy provides the guiding principles to be followed amongst which is supporting Integrated water resources management (IWRM); the water resources regulations (1998) that provide for application for a water permit by someone who wishes to construct, own, occupy or control any works on or adjacent to which there is a motorized pump that pumps water from a borehole or water way, there is weir, dam, tank or other capable of diverting or impounding an inflow of more than 400 cubic meters in any period of 24 hours, there are works for non-consumptive uses; and other related regulatory frameworks to address aspects of water scarcity/stress in a sustainable way. Project funds for construction of micro-irrigation schemes in Katonga catchment are catalytic and as such, the micro irrigation structures will not be constructed in the entire catchment. Therefore, the project will establish small-irrigation schemes in identified sites within the catchment to act as demonstrations for stakeholders to learn innovative irrigation techniques in water harvesting, storage and use (water use efficiency). This is useful to stakeholders (community groups and associations) who will be able to construct similar structures in their areas for sustainability.

- **Activity 2.1.1.4** Procure appropriate seed and improved pastures for increased crop and livestock production respectively. To increase crop and livestock production, communities will be supported to manage land in a better way using improved crop husbandry practices, climate smart practices (mulching, minimum tillage etc.), irrigation, use of improved breeds, and improved post-harvest handing technologies. This will increase the productivity of the land per unit area hence, maximizing the land utilization without expansion and degradation of the landscape)..

Component 3:
Supporting nature-based enterprises for sustainable socio-economic development

Baseline situation

66. Although the main sources of livelihood in Katonga catchment is rain-fed subsistence crop farming with livestock production in the drier areas of the catchment, the overwhelming majority (76.2%) of households directly derive their livelihood from rain-fed subsistence crop farming in the catchment. Based on the 2014 National Population and Housing Census (UBOS, 2014), access to remittances from people working outside the catchment is also one of the primary alternative sources of livelihood available for the households. Most of the farmers in the catchment are small-scale farmers with land holding ranging between 0.5 and 1 ha and with 25% of them living below the poverty line. The annual crops grown include mainly millet, maize, beans and sweet potatoes. Land fragmentation is common due to high population density especially in hilly areas thus, severe degradation of areas with shallow soils. The catchment population depends on the natural environment for their livelihoods most especially for food and biomass energy.
67. Communities have also drained wetlands in some areas for cultivation and others have cleared shrubs and thickets especially in drier areas for charcoal production. These activities have directly affected the availability and sustainability of water resources especially land use change for agricultural production through deforestation and forest degradation, and reclamation of wetlands. This unsuitable utilization of natural resources mainly through indiscriminate cutting of forests and woodlands for both domestic and commercial uses and agriculture expansion as well as wetland degradation have reduced the resilience of these ecosystems, or their ability to withstand the adverse effects of climate change.

68. Land and livestock productivity have reduced resulting in low crop yields and reduced livestock products leaving the farmers with little to eat and sell. Consequently, the communities' coping capacity to the impacts of climate change have remained low and inadequate. There is therefore, a need to support the communities to undertake climate smart agriculture for improved yields and products from crops and livestock, incomes and enhanced livelihoods thereby alleviating authority. .
69. Although the communities have been practicing, the small-scale enterprises in the catchment there are a range of challenges. For example, they are susceptible to fluctuations in market conditions. They also face the risk of insecure markets due to low incomes, seasonality of production, poor market information, lack of access to urban markets, and external competition, lack of access to appropriate technology in the form of suitable tools and equipment with which to improve productivity as well as managerial weaknesses, that aggravate the situation.

Proposed interventions

70. The proposed project intends to build the capacity of community groups and institutions to undertake climate smart agriculture and other income generating activities. In addition, studies to establish the right package of household based incentives that foster positive attitude and practices for climate smart agriculture and improved livestock management in the catchment will be conducted. Communities and Local governments will be supported in formulation of by-laws for addressing environmental problems that negatively influence livelihood improvement. The RECOFE project will also support the development of business plans for at least four nature-based enterprises such as bee keeping, commercial fruits and tree nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass. For enterprises such as bee keeping (honey production), the project will support value addition including branding and blending. The project proposes to promote and strengthen these nature-based enterprises as one of the ways to reduce the rampant degradation of the forest and other natural resources. The project will address and link the three pillars of sustainability i.e. environmental, social and economic development.
71. The project will support establishment of resource user groups. Each resource user group will be facilitated to develop a business plan as part of a capacity building strategy aimed at enhancing their sustainability. In addition, the project will support the implementation of the proposed plans. The project, therefore, intends to build the capacity of the organized stakeholders (resource user groups) by providing incentives to manage nature-based enterprises, enhancing access to markets and establishing quality control mechanisms. Good governance through fostering good leadership skills with clear accountability and transparency will be promoted. By acquiring good leadership skills, the targeted groups will have the ability to get an income from their nature-based enterprises leading to less pressure on the fragile ecosystems. This approach is essential for ensuring that community groups will effectively participate in their activities and manage natural resources sustainably.
72. To ensure equity amongst the groups, there will be deliberate effort to integrate vulnerable groups of women, youth (boys and girls), Peoples with Disability (PWD) as well as the absolute poor that live on less than 1$ a day) to directly benefit from project activities. Although none of the nature-based enterprises such as bee keeping, commercial nurseries for fruits and trees, mushroom growing, incense sticks, bamboo and agri-waste biomass have significant effects on the environment, environmental briefs will be prepared were need arises.
73. The project will promote value chain analysis to ensure resource efficiency by undertaking selection of the right quality of affordable materials and applying the correct silvicultural and agro-economic activities to produce the desired products that fetch high premiums for the stakeholders including the vulnerable groups. Such activities will help the groups in identifying complementarities, synergies and opportunities that will increase their effectiveness in managing forest/wetland/water resources sustainably while benefiting from them thereby enhancing people's livelihoods. Emphasis will focus on increasing the incomes from the established businesses through quality control and massive production. These activities will be linked to conservation, improved group performance, operational effectiveness and long-term sustainability of interventions.
74. The enterprises are expected to provide financial rewards to communities and reduce pressure (in form of degradation and less pollution) being exerted to the natural resources in the catchment. The project will further encourage innovations such as eco-labelling of naturally produced honey. The project will link the honey producers to the market. It is in the interest of the project to promote the whole value chain (including production, handling processing and marketing) amongst the communities to meet the

required standards and be able to access high premiums. These enterprises also play key role in acting as substitutes or complements to some of the community needs e.g. fuel wood and poles.

Proposed selection criteria of beneficiaries for the nature-based enterprises

75. The Katonga CMP was developed through a highly stakeholder consultative process that is informed by data on natural resources in the area. The stages followed to develop the CMP include: catchment situational analysis; water resources analysis; stakeholders' engagement; strategic social and environmental assessment; development of vision, objectives and strategies; scenarios and options analysis; and preparation of the CMP. During these stages, detailed assessments and resource mapping are carried out including hydrological and water balance assessment and the results are presented in form of maps showing locations where key issues occur. Thus, a lot of hydrological modelling work and mapping of highly vulnerable or degraded areas requiring interventions is undertaken as part of developing the CMP.
76. Maps showing vulnerable or degraded areas that require restoration interventions are prepared and presented in the CMP. Information on key issues affecting the catchment is synthesized and presented in the CMP. The CMP also consists of several agreed investments in infrastructure and other interventions, and various water management interventions and actions meant to resolve conflicts, conserve and protect the catchment and its natural resources, and ensure equitable access and use of water resources.
77. Reconnaissance visits are undertaken by the various stakeholders namely, Catchment Management and environment committees and other stakeholders. This ensures that the actual interventions that are required are confirmed. For this project, the communities in some of the identified micro-catchments will be targeted based on the following selection criteria:

Criterion 1: Vulnerability

The most vulnerable groups will be considered, for example, women, youth (boys and girls), Peoples with Disability (PWD) as well as the absolute poor. The vulnerable communities are struggling to survive and therefore, they often seek for the closest option. Natural resources are considered as an open option, as such, they are culprits.

Criterion 2: Proximity to the fragile ecosystems

People in the most degraded areas will be targeted because these are frontline people that interact with the fragile ecosystems daily. They are affected and equally affect the resources. Therefore, such communities own the land or are most responsible for its degradation. In this case, community members will be selected to participate in interventions for sustainable management of the natural resources. This approach will help in protecting the natural resources.

Criterion 3: Resource users

Even among the communities that live and interact in proximity to the natural resources, it is important to target resource users. The people using the resources are the best people to restore them, as they understand the resources they use better.

Criterion 4: Gender

Deliberate effort will be made to ensure that at least 50% of the targeted RECOFE project beneficiaries are women. Such gender consideration will be done in consultation with local leaders and sub-catchment management committees. About 80% of women and women groups will be targeted to engage in enterprise development activities during project implementation.

Outcome 3.1Increased income for improved stakeholder livelihoods.

Output 3.1.1 Nature-based enterprises promoted

Activities

- **Activity 3.1.1.1** Establish nature-based enterprises such as bee keeping, commercial fruits and tree nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass through collaborative natural resources management approaches. Such nature-based enterprises aim at promoting both ecosystems and communities' resilience to the impacts of climate change. In bee keeping conservation of natural bee habitats that provide bee forage comprising of natural vegetation will be promoted. Commercial fruits and tree nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass will focus on promoting restoration hence resilience of catchment ecosystems, whilst improving community

livelihoods.

- **Activity 3.1.1.2** Procure necessary tools to improve productivity of the nature-based enterprises
- **Activity 3.1.1.3** Procure viable high value germplasm
- **Activity 3.1.1.4** Establish value chains for bee keeping, tree and fruit nurseries, , mushroom growing, incense sticks production, bamboo and agri-waste biomass production (including production, processing, handling/storage, packaging/ eco-labelling
- **Activity 3.1.1.5** Provide inputs for selected vulnerable communities (women, elderly, youth, PWDs) to scale -up beekeeping, tree and fruit nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass production.

Output 3.1.2 Market linkages of products from nature-based enterprises established

Activities

- **Activity 3.1.2.1** Facilitate stakeholders to participate in business forums, trade fairs & exhibitions
- **Activity 3.1.2.2** Facilitate business tours and business plans for the private sector
- **Activity 3.1.2.3** Facilitate establishment and operation of a market information systems
- **Activity 3.1.2.4** Develop promotional materials for marketing of products

Output 3.1.3 Entrepreneur skills of stakeholders enhanced

Activities

- **Activity 3.1.3.1** Facilitate registration of small-scale businesses
- **Activity 3.1.3.2** Train entrepreneurs in business management skills
- **Activity 3.1.3.3** Develop business plans for translation into functioning businesses

Outcome 3.2 Enhanced ecosystem health

Output 3.2.1 Fragile ecosystems conserved

Activities

- **Activity 3.2.1.1** Undertake ecosystem restoration activities (wetlands and riverbank restoration, reforestation, enrichment planting, opening of boundaries of fragile ecosystems and promotion of collaborative natural resource management approaches such as Integrated Water Resources Management, Collaborative Forest Management, Forest Landscape Restoration, Farm Managed Natural Regeneration) to enhance the resilience of the ecosystems and communities.
- **Activity.3.2.1.2** Sensitize stakeholders in sustainable utilisation of natural resources (e.g. appreciation and importance of the natural ecosystems)

The training plan for entrepreneurs in business management skills and roles and responsibilities of the duty bearers at the grassroots is presented in Table 4. This is aimed at capacitating the targeted stakeholders to improve their management capability.

Table 4: The training activity plan

Component	Specific Project Training Activity	Stakeholders	Training Methods	Responsible Persons	Timelines (Years)	
					1	2
Component 1: Strengthening capacity of key grass root stakeholders	**Activity 1.1.1.3** Training in roles and responsibilities of the duty bearers at the grassroots. This is aimed at capacitating the targeted stakeholders to improve their management capability.	• Sub-County and Parish Leaders • LC III and LC II leaders including Councilors • Women and Youth Group leaders • Local Entrepreneurs for various nature Based enterprises • Community leaders in Environment and natural resources committee leaders • Community Development Officers	• Training workshops • Presentations and discussions with group exercises	• DWRM, VWMZ as the Focal Executing entities • GWPEA, • Focal District Technical Staff • Consultants		
	Activity 1.2.1.4 Develop and strengthen the governance and leadership frameworks (including by-laws, ordinances and guidelines). This activity will focus on training new and existing groups on: -	• Existing Women and Youth Groups • New Women and Youth Groups • Sub-County and Parish Leaders • LC III and LC II leaders including Councilors • Community leaders in Environment and natural resources committee leaders • Community Development Officers • Local Entrepreneurs for various nature Based enterprises	• Training workshops • Presentations and discussions with group exercises	• DWRM and VWMZ as the Focal Executing entities • GWPEA, • Focal District Technical Staff • Consultants		
Component 3: Supporting nature-based enterprises for sustainable socio-economic development	**Activity 3.1.3.2** Train entrepreneurs in business management skills	• Existing Women and Youth Groups • New Women and Youth Groups • Sub-County and Parish Leaders • LC III and LC II leaders including Councilors • Community leaders in Environment and natural resources committee leaders • Community Development Officers • Local Entrepreneurs for various nature Based enterprises	• Training workshops • Presentations and discussions with group exercises	• DWRM and VWMZ as the Focal Executing entities • GWPEA, • Focal District Technical Staff • Consultants		
	Activity.3.2.1.2 Sensitize stakeholders in sustainable utilisation of natural resources (e.g. appreciation and importance of the natural ecosystems)	• Existing Women and Youth Groups • New Women and Youth Groups • Sub-County and Parish Leaders • LC III and LC II leaders including Councilors	• Training workshops	• DWRM and VWMZ as the Focal Executing entities • GWPEA, • Focal District Technical Staff		

		• Community leaders in Environment and natural resources committee leaders • Community Development Officers • Local Entrepreneurs for various nature Based enterprises	• Presentations and discussions with group exercises • Field excursion • Practical demonstrations	• Consultants		

Component 4:
Knowledge management and information sharing

Baseline situation

78. Overall, in Uganda, there is a general weakness in documenting lessons and good practices from projects, including the projects focusing on climate change. Besides, the little that is documented is not adequately disseminated and read by the recipients. Learning and adopting climate change solutions by the most vulnerable communities can be enhanced by cross-exchange of information and touring and/or visiting as well as learning from successful innovate adaptation projects. However, due to limited financial resources to execute such ventures impedes efforts of taking forward such well-meaning planned activities.

Proposed interventions

79. The project seeks to take steps to improve the situation through engaging key stakeholders in the catchment with the aim of ensuring that a large mass receives the message/information through various channels ranging from electronic to print media. Direct stakeholder engagements and production of documentaries, signposts, and leaflets will be done. Such will be achieved successfully through localizing the information to aid the understanding of stakeholders especially the local communities. The Project will also support and coordinate different stakeholder's needs and capacities in collecting, generating, analyzing and disseminating relevant project information on implementing the local adaptation actions. The project will endeavor to reach out to a wider audience for purposes of creating impact and ownership. The targeted group for the project interventions will include Catchment and sub-catchment management committees, environmental committees, CSOs/NGOs, private sector and communities including the vulnerable groups of men and women including the youth and PWDs and among the populations in the catchment. It is expected that the proposed project will contribute to addressing climate resilience needs, which are priority in the catchment.

Outcome 4.1 Lessons and good practices shared and adopted

Output 4.1.1 Knowledge management and information sharing system developed

Activities

- **Activity 4.1.1.1** Facilitate experience sharing and cross-learning of innovative climate change adaptation interventions
- **Activity 4.1.1.2** Organize learning events in climate change adaptation
- **Activity 4.1.1.3** Document lessons, good practices and disseminate for replication and up-scaling
- **Activity 4.1.1.4** Popularise existing frameworks (i.e. policies, Ordinances and by-laws)

B. Economic, Social and Environmental benefits and mitigation of negative impacts

80. The interventions of the proposed project are designed to provide the economic, social and environmental benefits to vulnerable communities and vulnerable groups among the targeted populations within the context of the Environmental and Social Policy and Gender policy of the Adaptation Fund. Overall, this project targets to provide benefits to 20,852 community members and other stakeholders involved in water, food, agriculture, livestock, environment and natural resources management at grassroots; including the personnel from National Forestry Authority (NFA), Wetlands Management Department, Water and Sanitation Development Facility (WSDF-West) and Western Umbrella for Water and Sanitation (WUWS) and National Environment Authority (NEMA) that engage and interact with grass root communities among others.

Economic benefits

81. From the design, the project will provide economic benefits by directly contributing to improving the alternative livelihoods and incomes of the community members. This is possible especially considering that one of the key interventions focuses on establishing nature-based enterprises such as bee keeping, commercial fruits production, commercial tree nurseries, mushroom growing, incense sticks

production as well as bamboo growing and processing and agri-waste biomass processing (Activity 3.1.1.1). Economically, it is expected that community members especially the women that engage in such alternative livelihood options will in posterity manage to obtain additional incomes that will be utilized to enhance their production at household and community levels. In addition, through the proposed training in roles and responsibilities of the duty bearers at the grassroots (Activity 1.1.1.3) contributes to economic benefits by capacitating the targeted stakeholders to improve their management capability especially of the production initiatives they are or will be engaged in. such improved capacity serves to reduce investment costs thereby increasing profits and benefits.

82. Furthermore, as the project supports construction and/or rehabilitates low cost and appropriate physical water storage facilities (Activity 2.1.1.1), more economic benefits will be realized by beneficiaries considering that when more water harvesting and storage facilities for community members or households will be available to support production at community and household levels. In such a situation, it is expected that with knowledge, information and skills acquired people will have adequate water resources to continue engaging in productive /income generating activities. In facilitating the development of simple biophysical water harvesting technologies for crop and livestock production (Activity 2.1.1.2), constructing micro-irrigation demonstrations for stakeholders to learn innovative irrigation techniques in water harvesting, storage and use (water use efficiency (Activity 2.1.1.3) as well as providing appropriate seed and improved pastures crop and livestock production respectively project beneficiaries will be aided to. increase crop and livestock production.
83. Community members especially women and youth whose control and access to big and productive chunks of land will be supported to manage land in a better way using improved crop husbandry practices, climate smart practices (mulching, minimum tillage etc.), irrigation, use of improved breeds, and improved post-harvest handing technologies (Activity 2.1.1.4). Such interventions among others will increase the productivity of the land per unit thereby maximizing the land utilization without necessary expansion of the land. Generally, other interventions such as establishing value chains for specific agreed upon nature-based enterprises (including production, processing, handling/storage, packaging/ eco-labelling (Activity 3.1.1.4) and stakeholders participation in business forums, trade fairs & exhibitions (Activity 3.1.2.1) that will be facilitated by the project are aimed at capacitating the community members with knowledge, information and skills to enable them derive greater economic benefits. Overall, apart from the direct investments in alternative livelihood options such as nature-based enterprises that trigger direct improvements in incomes for the most vulnerable members (women, youth and PWDs) in the targeted sites, the proposed project activities indirectly provide economic benefits to beneficiaries through improving water security, sustainable land management for better crop and livestock production, marketing and value chain management to reduce the would be economic losses, hence maximizing incomes.

Social benefits

84. Socially, the project interventions are geared towards improving the capacity of resource poor women, youth and PWDs for establishing, managing, developing and benefiting from nature-based enterprises and water infrastructural investments. The project is designed to promote rights of the most vulnerable groups within communities and households by supporting them to engage in livelihood options that do not discriminate against cultural norms. The project is designed to promote governance and improved management of natural resources including land and water at grassroots by proposing to capacitate the grass root resource management leadership frameworks and engagement of key stakeholders.
85. The project also supports the most vulnerable by facilitating resource use negotiations and development of Management plans, Memorandum of Understanding (MoUs) between the communities and duty bearers of the natural resources (Activity 1.2.1.3). Such negotiations especially with communities and MWE, National Forestry Authority as well as wetlands personnel improves relationships and minimizes conflicts. Through training new and existing groups of women and other community members community relationships will be enhanced and social cohesion to undertake mutually beneficial productive activities will be a strong benefit achievement. Such is possible through trainings on gender roles and responsibilities, gender and conflict sensitivity, accountability, managerial skills, group dynamics, conflict management, managing information, forest policies and other policies governing other natural resources among others. Therefore, the main social benefits from this project are improved social cohesion, reduced conflicts, strengthened governance and leadership for natural resources and people. Harmony and social inclusion are other social benefits promoted by the

proposed project.

Environmental benefits

86. The project supports construction of facilities for water harvesting and storage and low cost micro-irrigation in addition to promoting simple technologies for crop and livestock production. These are technologies that do not lead to land expansion hence may not encroach on the natural capital by increasing production per unit area. Under this project, ecosystem restoration activities for wetlands, riverbanks and reforestation of degraded forest areas will be supported. Furthermore, nature-based enterprises will be promoted. Interventions aimed at managing land in a better way using improved crop husbandry practices, climate smart practices such as (mulching, minimum tillage etc.), irrigation, use of improved breeds, and improved post-harvest handing technologies will also be promoted. Such water, land, crop and livestock management measures proposed for promotion under this project provide environmental benefits in terms of enhancing the ecosystem goods and services on which vulnerable community members and nature thrive and survive.
87. This implies that project beneficiaries will have adequate quantity and quality water for domestic use, floods control is improved, soil control especially in sloping areas is reduced replenishment of ground and surface water sources is achieved. In posterity, community members are able to realise benefits in form of improved land productivity for crop and livestock leading to higher income and improved food security. Therefore, such proposed interventions will not only ensure water and food secure communities but also increasing resilience of the ecosystems, biodiversity and human populations against floods, erosion and pollution or contamination of water and soil resources in the catchment.

Avoiding or mitigating the negative impacts to project benefits

88. To maximise the economic, social and environmental benefits from project interventions, measures aimed at avoiding and/ or mitigating the negative impacts of interventions in compliance with Environmental and Social Policy and Gender policy of the Adaptation Fund. Negative impacts likely to impede vulnerable groups from enjoying the economic, social and environmental benefits, mitigation measures will be undertaken.
89. Although most of the project activities comply with all the relevant National and laws, regulations and standards as well as the relevant international laws and regulations, activities 2.1.1.1, 2.1.1.2, 2.1.1.3 under component two that will involve construction or rehabilitation of appropriate physical water storage facilities as well as micro-irrigation schemes as well as Activities 3.1.1.1, 3.1.1.2, 3.1.1.3 and 3.1.1.4 under component 3 involving undertaking Income Generating Activities (IGAs), e.g. bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling potentially have USPs that may require EIA depending on the size and the location of their implementation to determine their impacts and to comply with national and international standards , laws and regulations.
90. For instance, for the fully identified project activities there is no need for mitigation measures since they generate no risks. The assessment of the risks related to the USPs will be ensured according to the Unidentified Sub-Projects (USP) methodology of Impact Assessment and Risk Management detailed above and for those that require detailed assessments they will be conducted to ensure compliance with the national and international standards, laws and regulations.
91. Vulnerable groups including the elderly, youth and women likely to miss out of the project activities and accessing benefits due to dominance by men and other well-positioned decision makers. A detailed stakeholder mapping, consultations and assessments have been undertaken during the proposal development stage. In situations where, access and ownership of land and other related resources including finance is limited for Women, youth and other vulnerable groups and this may limit their participation, opportunities and benefits from project activities especially agricultural based activities and those that need reasonable amounts of money to start up like IGAs. Issues and proposed actions specific to each group have been captured and incorporated in the design of the project to ensure equitable participation in the project activities and access to project benefits by all groups including men women, elderly, youth and any other vulnerable and marginalized groups without discrimination. Develop a beneficiaries selection criteria taking care of all categories of people including women youth, elderly, PWDs and other vulnerable and marginalized groups.

92. For groups with limited access to land, they will be encouraged and targeted for activities that do not need a lot of land such as mushroom growing, beekeeping among others The project also has an activity focusing on identifying and establishing sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, PWDs) to scale -up nature-based enterprises activities that do not need a lot of land. A project Grievance redress mechanism shall also be developed to handle any reported issues of inequality and lack of access to project benefits. Close monitoring of the project beneficiaries to assure equal access of men; women, youth and the most vulnerable. Marginalized and Vulnerable groups including the elderly, youth and women likely to miss out of the project activities and accessing benefits due to dominance by men and other well positioned decision makers who may take up all the available project opportunities. Marginalized and vulnerable groups will be deliberately targeted right from the project design to ensure that they participate and benefit from project activities. Beneficiaries' selection criteria with positive bias towards these groups will be developed and followed as proposed.
93. Most of the project activities do not generate risks related to human rights. However, for activities that will involve construction and for IGAs that may require additional labour to undertake there may be issues arising from treatment of workers by the project Contractors. Contractors and other employees shall be sensitized and obliged to observe the human rights of their workers as well as the guidance provided by the employment Act, Workers compensation Act, Occupational health and safety Act and other relevant local and internationals laws and regulations. The Project Grievance redress mechanism shall be used to resolve any human right issues that may arise.
94. For Vegetation clearance arising from for water harvesting and storage sites and irrigation systems that will result in loss of biodiversity thereby limiting the benefits to individuals and populations in those sites. The opening up of new lands for agriculture may also lead to vegetation loss. It is also possible that Seeds and improved pastures for increased crop and livestock production may turn out be invasive. As water storage facilities are constructed, water contamination in the storage reservoirs or irrigation systems may occur further limiting delivery of benefits to project beneficiaries. There may be over use or un-regulated usage of the water resources. In such situations, water management committees will be established to ensure that regular maintenance of water sources and irrigation systems is done thereby reducing changes in contamination. Efforts to ensure regular quality control checks and monitoring to detect and address any sources of pollution and contamination through regular sensitization on water source protection and maintenance will be done. Regulated use of water resources by enactment of laws will be done.
95. Low representation and lack of land and other resources in the targeted areas may negatively impact on delivery of benefits by the project. In addition, there may be situations where limited benefits access due to limited participation of vulnerable groups such as women and youth groups may also negatively impact on provision of benefits by the project. To mitigate such impacts, a Gender Assessment and Action Plan have been developed to ensure that gender issues and women are meaningful integrated and engaged in project activities and realize an equitable share of project benefits. The project has been deliberately designed to emphasize gender equity and women empowerment through equal participation of both men and women in project activities. Women will be empowered at the start and during project implementation in decision making through having representation on group management committees for the project investments and enterprises. Some of the key project activities including capacity building in climate smart agriculture practices and development of business plans as well as undertaking of nature-based enterprises as well as establishment of probable sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, People With Disabilities-PWDs) to scale-up nature-based enterprises, will deliberately target women and other vulnerable groups. This will enhance their access to finance and enable them to generate income, contributing directly to their financial empowerment.
96. Overall, to mitigate negative impacts of the interventions highlighted among others in compliance with AF ESP, Environmental and Social Impact Assessments, Gender analysis supported by a complete gender action plan as well as a grievance redress mechanism have been undertaken during the development of the RECOFE full proposal document. In order to sustain the benefits to vulnerable groups in the targeted communities, the project-monitoring plan as well as the Grievance mechanism shall incorporate gender equity and women empowerment issues for follow up during project implementation and ensure that project reports provide and emphasize gender-segregated data.

C. Project cost-effectiveness

97. The interventions selected (e.g. nature-based enterprises) are expected to generate income thereby adding to the cost-effectiveness of the project. The project proposes an approach that utilises appropriate local adaptation practices within the following: rain-water harvesting, agri-waste biomass, catchment restoration, and river banks restoration as well as mini irrigation schemes. Other adaptation measures that demonstrate cost-effectiveness include: incorporation of adaptation actions in by-laws for implementation by the targeted communities. Moreover, considering that the project targets about 20,852 beneficiaries with a total financial investment of USD 2,249,000 million, it is expected that the benefits will accrue socially, economically and environmentally from interventions, especially those that involve income generation. Such monetary benefits will inevitably lead to improvements or enhancements in peoples' resilience to climate change impacts, their wellbeing and improved ecosystems. Such benefits will lead positive benefit/cost ratios that reveal a profitable/cost-effective project investment. Thus, the project has adaptation components to be undertaken within a broader set of activities; hence, the cost effectiveness is based on the comparison made relative to a business-as-usual project without adaptation components. The construction of water storage structures, for example, without giving attention to the catchment, would compromise the hydrology of the catchment. Hence, there is an inherent subjectivity and we have used expert judgment in defining the hypothetical alternatives. The components of the project (1. Strengthening capacity of key grass root stakeholders; 2 Promoting appropriate water storage technologies; 3 Supporting nature-based enterprises for sustainable socio-economic development; and 4 Supporting knowledge management and information sharing have adaptation co-benefits that will help facilitate autonomous adaptation or increase adaptive capacity as a by-product. The project thus aims to increase productivity through improved water efficiency in the Katonga Catchment that is already drought prone and water-scarce. This is an element of cost-effectiveness. However, there is uncertainty regarding the economic value of the non-market benefits of the project. Climate variability and change, and responses to them, are aspects of uncertainty to the cost-effectiveness of the project, even over a medium-term particularly related to the underlying physical or ecological processes. Longer-term climate change impacts thus remain uncertain because some of them (e.g. greenhouse gas emissions) are unknown, as they depend on global efforts. Information for projecting the long-term scenario within the Katonga Catchment remains sparse regarding how climate changes and socioeconomic changes might interact, even though individual and institutional responses are critical determinants of climate change damages. Component 4, Supporting knowledge management and information sharing, is designed to address to loop hole in the long run, in a cost-effective manner. Determining the damages avoided or mitigated through adaptation in the Katonga Catchment is certainly a major benefit of the project that adds to cost effectiveness.

98. However, there is the challenge of tracing through the impacts of interventions, particularly those related to soft investments, for example, in Component 1) Strengthening capacity of key grass root stakeholders; and Component 4) Supporting knowledge management and information sharing whose benefits are realized by a range of changes in private behaviour. However, we have considered the value of changes in tangible resource availability, such as water, as aspects of cost effectiveness. The adaptation measures of the project (e.g. in Water Storage) are aimed at sustaining rural development in the context of risks from a changing climate. However, many, of the recommended project interventions (or investments and other activities) will also bring benefits, irrespective of how much the climate changes. Actions that we have identified as good risk management strategies for adaptation to climate change will be valuable parts of broader strategies that benefit livelihoods and mitigate other risks. The adaptation investments could increase resilience to current climate variability, while also preparing for a future increase in variability due to climate change. The project responses will have benefits beyond managing climate risks (e.g., improving water-use efficiency in areas that are already water-scarce due to non-climatic pressures, such as increased water demand from different sectors). These adaptations are "no-regret" investments. They include: i) Improving land management and other production factors, which can help farmers improve overall production and better manage risks from droughts and floods; ii) Enhancing resilience of the resource base to extreme climate events through practices that protect soils against runoff and erosion, promote biodiversity and conserve water; iii) Improving Water Storage systems, which can increase water-use efficiency, bring greater flexibility to water delivery for agriculture, and help farmers diversify to better manage climate risks; iv)Improving

restoration of critical/fragile ecosystems which is needed for managing both current risks and for building the capacity to cope with an expected increase in risk with climate change; and v) Creating opportunities for rural livelihood diversification (through IGAs), which can lead to increased economic security and less reliance on climate-sensitive agricultural activities.Project responses whose benefits stem mainly from addressing climate change risks, such as infra- structure interventions designed to respond to projected changes in runoff/flooding. As climate change is expected to affect water availability (i.e., runoff) and demand, water storage infrastructure will be built and/or water reallocated among users. Thus, the water harvesting infrastructure is considered a "hard" adaptation investment, while the water reallocation is a "soft" adaptation investment via modified institutions and incentives. These add to the cost effectiveness of the project. Another aspect of cost-effectiveness is to ensure that there is no duplication of project interventions by other partners in the catchment. The relevant partner projects have been identified and evaluated to avoid duplication.

D. Consistence with national sustainable development strategies

99. The proposed project aligns and contributes to the objectives and aspirations of the existing national frameworks. RECOFE objectives are consistent with the national development strategies, development plans, poverty reduction strategies, national communications and national adaptation programs of action. It is also consistent with national socio-economic priorities and national climate change priorities. Particularly, the project is consistent the Uganda Vision 2040 that recognizes that climate change affects all sectors of the economy and emphasizes capacity enhancement to respond to climate change related challenges through adaptation and mitigation strategies. The other national development strategies for which RECOFE is consistent are: the National Development Plan III (NDP III) that highlights climate change impacts as bottleneck to the country's economy and socio-economic transformation. The proposed project also complements and aligns with the Nationally Determined Contribution (NDC 2018), the National Adaptation framework that was launched in June 2016 that defined priority adaptation actions at sectoral level.

100. This project addresses key components of the National Climate Change Policy (NCCP) and implementation Strategy of 2013, which ensures that all stakeholders address climate change impacts and their causes, while promoting sustainable development and a green economy. The key national priorities, action plans and programs and these include: The Sustainable Development Goals (SDGs) to which the proposed project specifically contributes to the attainment of SDGs,1 on ending poverty, SDG 2 on ending hunger, SDG 6 on water and sanitation and SDG 13 on climate action among others. The detailed national sustainable strategies to which the proposed project is consistent are presented in Table 5.

Table 5: Alignment with national sustainable development strategies

Uganda Vision 2040.	Its goal is to transform Uganda from a predominantly peasant and low-income country to a competitive upper middle-income status country. It provides the overall leadership and policy direction for job creation and priority setting. The Uganda Vision 2040 sets out to the country's commitment for efforts to attain a green and clean environment.
National Development Plan III	NDPIII aims at increasing household incomes and improving the quality of life of Ugandans through sustainable industrialization for inclusive growth, employment and sustainable wealth creation.
The Uganda Intended Nationally Determined Contribution 2015	The country's INDC recognizes that people's livelihood is highly dependent on the exploitation of her natural resources, including climate. In submitting this INDC, Uganda's priority is adaptation. The country will continue to work on reducing vulnerability and addressing adaptation in agriculture and livestock, forestry, infrastructure (with an emphasis on human settlements, social infrastructure and transport), water, energy, health and disaster risk management.
Climate Change Policy (NCCP) (2015	The country recognizes that climate change is one of the greatest challenges facing humanity in the century. The overarching policy objective is to ensure that all stakeholders address climate change impacts and their causes through appropriate measures, while promoting sustainable development.
Nationally Determined Contribution (NDC, 2018)	NDCs are national climate plans highlighting climate actions, including climate related targets, policies and measures governments aims to implement in response to climate change and as a contribution to global climate action. Through this NDC, Uganda hopes to reduce emissions from its business-as-usual (BAU) scenarios by 22% by 2030 via a

	series of policies and measures to mitigate and adapt to climate change[16] . All components of the proposed project shall contribute towards the objectives of the NDCs.
Uganda NDC Partnership Plan For Climate Action 2018	The five priority areas for Uganda identified in its NDC Partnership Plan are: strengthened operational and gender-responsive policy and institutional frameworks for the effective governance of climate change; increased climate financing for planning and budgeting on the national and local levels; effective and institutionalized measurement, reporting and verification (MRV) systems to monitor greenhouse gas emissions and gender-responsive adaptation measures; strengthened capacity of government officials, civil society, the private sector and academia to effectively integrate NDC and Sustainable Development Goal (SDG) commitments with a gender lens into existing and future programs; and accelerated project financing for NDC implementation[17]. All project components shall contribute towards the objectives of the Plan.
National Adaptation Plan (NAP)	The project contributes to the on-going Catchment-based IWRM planning processes, and the new National Adaptation Plan (NAP) development process in Uganda;
Sustainable Development Goals SDG 6	The project interventions also contribute to the attainment of SDGs, 1 on ending poverty, SDG 2 on ending hunger, SDG 6 on water and sanitation and SDG 13 on climate action among others.

E. Alignment and relevance to national technical standards

101. Although it is important that during project implementation, the National Implementing Entity and the Executing Entities must comply with the Adaptation Funds standards for instance the Environmental and Social Policy and the Gender Policy, for purposes of project ownership and sustainability, the RECOFE project interventions must also comply with the country's standards. These standards include the technical guidelines, regulations and the laws and policies. Environmental sustainability is considered as core area of the RECOFE project. The RECOFE project is expected to have positive environment impacts because it will support interventions in water and other natural resources management that will enhance climate resilience and environmental rehabilitation.

102. However, the water infrastructure development will consider minimal environmental and social aspects. After identifying priority infrastructure, initial social and environmental impact screening will be carried out as part of pre-feasibility studies. This will help to identify potential adverse environmental impacts if any. Moreover, the participatory process will be able to address social and economic issues. To ensure compliance with environmental and social good practices, an analysis of the available standards has been made and presented in Tables 6 and 7.

[16] http://ccd.go.ug/wp-content/uploads/2019/10/INDC-Uganda-final-14-October-2015.pdf
[17] https://ndcpartnership.org/news/uganda-releases-first-ndc-partnership-plan-climate-action-africa

Table 6: Alignment with national policies

Policy	Relevance to the project
The National Environment Management Policy 1995	The National Environment Management Policy sets out the overall policy goals, objectives and principles for environmental management in Uganda. Its overall goal is sustainable social and economic development, which maintains and enhances environmental quality and resource productivity to meet the needs of present generations without compromising the ability of the future generations to meet their own needs[18]. It recognizes that Uganda faces a number of environmental issues including: soil degradation, deforestation, loss of biodiversity, increasing pollution and environmentally related diseases. These problems are compounded by poverty, low amounts of environmental awareness and low levels of technology. Specifically, the policy recognizes climate as a 'vital natural resource' that needs to be monitored in order to better direct land use, encourage sustainable economic development, and manage air pollution, and GHG emissions. All the project components 1, 2, 3 and 4 are in line with the objectives of this overarching policy.
The National Climate Change Policy 2015	The goal of the policy is to ensure a harmonized and coordinated approach towards a climate- resilient and low-carbon development path for sustainable development in Uganda. The Policy adopts a comprehensive approach to address climate change, identifying as priority concerns: adaptation, mitigation, monitoring, and research. To address these concerns, the Policy promotes the implementation of activities relating to: education and increased awareness; gender issues; promoting and diffusing research; monitoring and transferring knowledge; and institutional capacity building. Other activities include promotion of sustainable activities in the sectors of agriculture and livestock, fishery production, water management, forestry, wetland, biodiversity and ecosystem services and tourism are identified are important needs to develop Uganda's approach to adaption to climate change. As annex to the Climate Change Policy, the costed Implementation Strategy provides a more detailed account on the implementation of the Policy, including an indicative costing for the programmes and activities to be developed. All the project components and activities are aligned and contribute to the attainment of the policy objectives.
The National Water Policy 1999	The policy advocates for the management and development of water resources in Uganda in an integrated and sustainable manner so as to secure and provide water of adequate quality and quantity for all social and economic needs for present and future generations with the full participation of all stakeholders. This Project is planned to ensure provision of adequate water needs for domestic use, irrigation and livestock in the target communities. Activities under component 2 are in line with and will be guided by this Policy.
The National Policy for Disaster Preparedness and Management 2010	Serves as the framework policy for disaster and risk management and preparedness in Uganda, including disasters caused by climate change. Details the mechanisms and structures aimed at effective management of disasters including: vulnerability assessments, mitigation, preparedness, and response and recovery. Explicitly sites climate variability, climate change, and environmental degradation among the increasing vulnerabilities Uganda faces and needs to prepare for[19]. All project components 1, 2, 3 and 4 are geared towards reducing climate vulnerabilities and increasing resilience of communities and ecosystems hence, they are in line with this policy and contribute to the attainment of its objectives.

[18] https://climate-laws.org/geographies/uganda/policies/national-climate-change-policy
[19] https://climate-laws.org/geographies/uganda/policies/national-policy-for-disaster-preparedness-and-management

The National Land Use Policy 2006	The overall policy goal is to achieve sustainable and equitable socio-economic development through optimal land management and utilization in Uganda. The policy recognizes amongst others, the need for the protection and sustainable use of land resources through conducting environmental assessments and implementation of measures outlined in such assessment studies. It also recognizes the 3 Rio Conventions and notes that increasing climatic variability is responsible for drought and accelerates desertification, thereby contributing to increased aridity and reduction in the area available for cultivation or grazing
National Policy for the Conservation and Management of Wetland Resources, 1995	The policy has established principles by which, wetlands resources can be optimally used and their productivity maintained in the future and stop existing unsustainable exploitative practices in wetlands. This project aims at catchment protection including development of catchment management plans and involvement of the community members on how to protect the wetlands. Components 2 and 3 contributes to this policy.
Renewable Energy Policy for Uganda 2007	Among other priorities the policy aims to respond to threats posed by the increasing energy prices, environmental degradation, climate change, as well as Government's commitment to poverty and gender responsive energy actions[20]. Furthermore, implementation of the Renewable Energy Policy will result in the disposition of Uganda's commitments at the Bonn Conference on Renewable Energy in 2004.The project focuses on addressing issues of environmental degradation and climate change.
The National Forest Policy 2001	The key issues addressed by the Forestry policy include how to maintain and enhance the Permanent Forest Estate, improve the management of forest resources on private and customary land, address the underlying causes of deforestation, including lack of policy support, market failure, weak regulation and rural poverty, capitalize on the economic, social and environmental opportunities in forestry without undermining the resource base, ensure the survival of forest biodiversity and to balance this with the pressing development needs of the country, how to rehabilitate and conserve key watershed forests, how to promote and maintain the greening of the urban environment, as well as ensuring improved tenure to land and trees that acts as an incentive for individuals, and women in particular, and communities to invest in forestry among others. Forestry plays a very important role in enhancing the resilience of ecosystems and some of the activities under components 1, 2 and 3 are in line with this policy.
The National HIV/AIDS Policy, 2004	The policy applies to all current and prospective employees and workers, including applicants for work, within the public and private sectors. It also applies to all aspects of work, both formal and informal. The project will mainstream HIV/AIDS interventions into its activity implementation plans especially activities under sub-projects in components 2 and 3 that may require congregation of labor from different while undertaking activities like construction of mini-irrigation schemes and other water related infrastructure.
The National Cultural Policy, 2006	The National Culture Policy, 2006 complements, promotes, and strengthens the overall development goals of the country. Its specific objectives include amongst others, the need to promote and strengthen Uganda's diverse cultural identities and to conserve, protect, and promote Uganda's tangible and intangible cultural heritage. This ESMF outlines Chance Finds Procedures to ensure protection and conservation of any PCRs that will be encountered during project implementation. In addition, the project will be implemented in areas adjacent to Katonga Wildlife Reserve. Therefore, extra care share be undertaken not to disturb or encroach on the Wildlife reserve during project implementation.
The National Gender Policy 2007	The Uganda Gender Policy is an integral part of the national development policies. It is a framework for redressing gender imbalances as well as a guide to all development practitioners. The aim of this policy is to guide all levels of planning, resource

[20] https://climate-laws.org/geographies/uganda/policies/the-renewable-energy-policy-for-uganda

	allocation and implementation of development programmes with a gender perspective[21]. The emphasis on gender is based on the recognition that "gender" is a development concept useful in identifying and understanding the social roles and relations of women and men of all ages, and how these impact on development. This is applicable to all the four project components and efforts shall be made to ensure that all categories of people benefit from the project without discrimination.
The National Agriculture Policy 2013	The overall objective of the policy is to meet Uganda's high-level national commitment to achieve food and nutrition security and improve household incomes. The policy focuses on enhancing sustainable agricultural productivity and value addition, providing employment opportunities, and promoting domestic and international trade[22]. Activities under component 2 and 3 are in line with this policy.
National Irrigation Policy 2017	The overall policy objective of the draft irrigation policy is "Poverty Alleviation and Economic Growth as a result of the sustainable realization of the country's irrigation potential mitigating the effects of climate change and contributing to the transformation of Ugandan society from a peasant to a modern and prosperous country"[23]. Component 2 of the project contributes to this policy.
Uganda Food and Nutrition Policy, 2003	The overall objective of the policy is to promote the nutritional status of the people of Uganda through multi-sectoral and coordinated interventions focusing on food security, improved nutrition, and increased incomes. Section 2.4 of the policy lays down strategies for achieving this overall objective amongst which is strategy 2.4.1 that focuses on creating a mechanism to ensure that the entire food chain from food production to consumption, is efficiently managed within the overall development strategy; through building capacities at all levels (Households, Communities, lcal councils, sub counties, district levels) for adequate action to improve household food security; 2.4.8 on enforcing environmental protection regulations that apply to the food chain; . Components 2 of the project activities contribute this objective with their expected outcomes of increased water and food security, and increased income for improved stakeholder livelihoods respectively

Table 7: Alignment with regulations

Regulations	Relevance to the project
The National (Environmental and Social Assessment) Regulations, 2020.	The ESIA Regulations give a systematic ESIA procedure in Uganda. They give a legal mandate to EIA, thus paving the way for an enabling environment for its use as a tool for environmental protection. The regulations also have punitive measures for offenders. The EIA Regulations further provide for: enabling participation of communities in undertaking environmental impact assessment studies; seeking views of people in communities which may be affected by project activities including reforestation and afforestation activities; publication of intended project activities through mass media and holding meetings with the affected communities; holding of public hearings and producing reports of the hearings; and ensuring that all environmental impact assessment reports including terms of reference, public comments, reports of public hearings or any other information submitted to NEMA are public documents. Further assessments shall be done especially for activities under components 2 and 3.
Conduct and Certification of	Provides guidance on conduct and Registration and certification of EIA practitioners.

[21] http://extwprlegs1.fao.org/docs/pdf/uga163564.pdf
[22] http://agriculture.go.ug/wp-content/uploads/2019/04/National-Agriculture-Policy.pdf
[23] https://www.mwe.go.ug/sites/default/files/library/Uganda%20National%20Irrigation%20Policy.pdf

Environmental Practitioners Regulations, 2003	
Guidelines for strategic Environmental assessment (SEA) in Uganda 2020	Strategic environmental assessment (SEA) is the systematic and participatory process of evaluating the likely environmental, health and social consequences of proposed policy, plan or programme initiatives and alternatives, to ensure that they are integrated and appropriately addressed at the earliest stage of decision making in line with economic, environmental, health and social considerations[24]. Focuses on decisions regarding the implications of policies, plans and programmes which should inform decisions at project level. Focuses on decisions regarding projects, which should conform to relevant policies, plans or programmes.
The National Environment (Audit) Regulations, 2020:	The Audit Regulations reinforce the requirement to undertake Self-Environmental Audits as contained in the EIA Regulations. Normally, under approval conditions of NEMA, it is a requirement to undertake Audits for projects, which comply with the EIA requirement as part of the conditions of EIA approval. Some activities under component 2 may require Audits during their operation Phases.
Water Abstraction Regulations, 1998	Regulation 18 provides for the establishment of a controlled water abstraction mechanism through issuance of permits to regulate the amount of water abstraction. The regulation requires that, a Water Abstraction Permit either for ground or surface water abstraction are pre-requisites for motorized and/or abstracting of quantities above 400m3/day for persons involved in construction (damming, diverting surface water). Under water related projects, compliance to water abstraction regulations by water supply schemes needs to be established and associated water abstraction permits need to be verified. This important for activities under component 3.
The Water (Waste Discharge) Regulations, S.I. No. 32/1998	Specifies what quality is acceptable in terms of effluent released into rivers, promotes water pollution prevention and provides for effluent discharge in aquatic and sewerage system standards. These need to be observed especially under component 3 of the project.
National Environment (Waste Management) Regulations, 1999	These regulations promote cleaner production methods and require a facility to minimize waste generation by eliminating use of toxic raw materials; reducing toxic emissions and wastes; and recovering and reuse of waste wherever possible. The Regulations oblige the Developer to put in place measures for proper management of waste. These apply to activities under components 2 and 3.
Wetlands, River Banks and Lake Shores Management) Regulations, S.I., No. 3 /2000	Provides for protection of Wetlands, River Banks and Lakeshore Zones. Every landowner, occupier or user who is adjacent or contiguous with a wetland, River Banks and Lakeshore shall have the duty to prevent the degradation or destruction of these ecosystems and shall maintain their ecological and other functions[25]. Project activities will enhance the conservation of these ecosystems in the Project areas.
The National Environment (Mountainous and Hilly Areas Management) Regulations, 2000. 2000 No. 2	Provides guidance on the use of hilly and mountainous areas, the activities and associated measures to ensure sustainable land management. Some of the project under component 2 and 3 may be implemented in hilly and mountainous areas.

[24] https://nema.go.ug/sites/all/themes/nema/docs/Strategic%20Environmental%20Assessment%20(SEA)%20Guidelines%20Pdf%202020.pd
[25] https://nema.go.ug/sites/all/themes/nema/docs/wetlands_riverbanks.pdf

The National Environment (Noise Standards and Control) Regulations, 2003.	Section 7 of these regulations requires that no person shall emit noise in excess of permissible noise levels, unless permitted by a license issued under these Regulations. Section 8 imparts responsibility onto project developers to use the best practicable means to ensure that noise does not exceed permissible noise levels. This mainly applies to sub-projects under components 2 and 3.
National Forestry and Tree planting regulations 2016.	Section 4 of the National Forestry and Tree planting regulations (2026) provides principles for sustainable forest management of which key to RECOFE project includes; a) conservation of ecosystems, habitats and biological diversity and their health and vitality; c). promoting participation of stakeholders in the planning and management of forests; Promoting participation of stakeholders in the planning and management of forests; d). promoting fair distribution of the economic, social and environmental benefits at the local, district and National levels; e) conservation of watersheds and other natural resources including soil and water; k). improvement of livelihoods and reduction of poverty, m). efficiency in forest management practices. The principles will be crucial in implementation of majorly component three of the project that looks at supporting nature-based enterprises for sustainable socio-economic development including bee keeping and reforestation related initiatives by the project,

F. Project duplication with other funding sources

103. During the design of this project and especially at the time of conducting detailed stakeholder consultations, it was ensured that there is no duplication of project interventions by other partners in the catchment. Instead, the project complements and provides synergies with other projects implemented in the different areas within the catchment and other geographical areas. For instance, the different district local governments (sub-national) are implementing some initiatives but the funding levels are too low to realise meaningful impact. Therefore, this project is timely to complement and build synergies with such initiatives. Some of the particular projects and/or initiatives that the proposed project will complement and provide synergies in the Katonga catchment area are:

Lake Victoria Environment Management project (LVEMP II)

104. LVEMP is the one of the recent projects that has been operating in the catchment. It was funded by World Bank from 2010-2017. One of the major objectives of LVEMP was environmental management of targeted hotspots and selected degraded catchments. It is through this project that Katonga CMP was developed. The proposed project will be the first funding for the implementation of the Katonga CMP. In addition to LVEMP, there are other government sustainable development program initiatives geared towards alleviating poverty in collaboration with Civil Society Organizations (CSOs), and contributing to the resilience of targeted communities to climate change effects. Some of the other initiatives encountered during stakeholder consultations in the catchment are presented in Table 8.

Table 8: Other projects, initiatives and funding sources in Katonga Catchment

Institution	Existing project and focus	Remarks	Complementarity and synergies
Ministry of Water and Environment, National Forest Authority (NFA) and Uganda Wildlife Authority (UWA)	UGANDA Investing in Forests and Protected Areas for Climate Smart Development (IFPA-CD) Project	Financed by WB, GCF, and GoU. Project is at inception phase and supports the development and implementation of a resilient landscapes program in the Albert Water Management Zone and West Nile (part of the Upper Nile WMZ).	RECOFE project complements and synergies are occur in outcome 3.2 on ecosystem health restoration.
Ministry of Water and Environment (MWE) – Water for Production department	Improving livelihoods through water for production: Small scale irrigation systems	Targets about 215 acres under small-scale irrigation systems.	The RECOFE project provides synergies under component 2, Activity 2.1.1.3 plans to facilitate construction of micro-irrigation schemes as learning centres
Mubende, Sembabuke, Kalungu, Gomba, Lyantonde district farmers association and Lutheran World Federation.	Global Climate Change Alliance Plus (GCCA+)- Uganda: Agricultural Adaptation to Climate Change project Implementing partners: Ministry of Water and Environment; Ministry of Agriculture Animal Industry and Fisheries;	The Project is at inception phase and focuses on empowering rural communities in most vulnerable districts, to identify and adapt to climate change, through interventions that promote food security, income generation and sustainability of livelihoods.	The RECOFE project provides synergies under component 3: Activity 3.1.1.1 on Establishing Income Generating Activities (IGAs) e.g. bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass; and Activity 3.1.1.5 Identify and establish probable Sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, PWDs) to scale -up nature-based enterprises
MWE – Rural Water Supply and Sanitation Department (RWSSD) under the Directorate of Water Development	Lwemiyaga Rural Growth Centres (RGC) Piped Water Supply and Sanitation Scheme	Targets to provide the water supply system worth UGX 2,161,586,008	In component 2: synergies exist under Activity 2.1.1.1 Construct/rehabilitate agreed upon low cost and appropriate physical water storage facilities and Activity 2.1.1.2 Facilitate development of simple biophysical water harvesting Technologies for Agriculture and livestock production.
Water for people Uganda	Institutional support and restoration of the wetlands	Wetlands restoration as part of an IWRM approach to ensuring sustainable supply of water resources – about 39.4 ha restored	In component 3: RECOFE project complements restoration of wetlands among other ecosystems. Further synergies are reflected under Activity 3.2.1.1 Undertake ecosystem restoration activities (wetlands and river bank restoration, Reforestation etc.) and Activity .3.2.1.2 Sensitize stakeholders in sustainable utilisation of natural resources (e.g. appreciation and importance of the

Institution	Existing project and focus	Remarks	Complementarity and synergies
			natural ecosystems).
Ministry of Water and Environment (Funding is from the adaptation fund through Sahara and Sahel Observatory as the executing agency for the on-going project	Enhancing Resilience of Communities to Climate Change through Catchment Based Integrated Management of Water and Related Resources in Uganda	Supporting restoration of wetlands, river banks, Tree planting, sustained ecosystems , agricultural landscapes	Documented lessons learned from implementation of the OSS project, coupled with field excursions to promote peer-to-peer learning will enhance implementation of component 3 of the RECOFE project most especially for activities such as Activity 2.1.1.2: Facilitate development of simple biophysical water harvesting technologies for crop and animal production; Activity 3.2.1.1 Undertake ecosystem restoration activities (wetlands and river bank restoration, Reforestation etc.) and Activity .3.2.1.2 Sensitize stakeholders in sustainable utilization of natural resources
Ministry of Agriculture Animal Industry and Fisheries	Agricultural Value Chain Development Project (AVCP)	The project comprises of three operation components and one management component namely: i. Production and Productivity enhancement ii. Infrastructure Development iii. Market development and trade facilitation Project Management and Coordination	Lessons from component 3 of the AVCP will contribute to implementation of Acitivity 3.1.1.4 Establish value chains for key agreed upon nature based enterprises activity 3.1.2.3; Facilitate establishment and operation of a market information system; 3.1.3.1; Facilitate registration of small-scale businesses 3.1.3.2; Train entrepreneurs in business management sills; & 3.2.3.3; Develop business plans for translation into functioning businesses
Ministry of Water and Environment with funding from GEF	*Building Resilient Communities, Wetland Ecosystems and Associated Catchments in Uganda*	Under component three, the project focuses on strengthening access to climate and early warning information to farmers and other target communities to support wetland management, including hydrological infrastructure development.	Lessons from the project will inform and guide in implementation of Component 2 of the RECOFE project activities that promote innovative multi-stakeholder water storage technologies. Activity 2.1.1.1 Construct /Rehabilitate agreed upon low cost and appropriate water storage facilities; Activity 2.1.1.2 Facilitatate development of simple biophysical structures; Activity 2.1.1.3 Facilitate construction of micro-irrigation schemes
East African Community and Partner States	*Planning for resilience in East Africa through policy, adaptation, research and economic development (PREPARED)*	Works towards improving access to the management of safe water.	The 14 regional climate change adaptation tools developed, tested or adopted will be used in implementation of RECOFE project to enhance the resilience of the ecosystems and communities
Lake Victoria Basin Commission (LVBC)	*Adapting to Climate Change in Lake Victoria Basin Countries: Burundi, Kenya, Rwanda, Tanzania and Uganda*,	Component 4 of the project concerns Community-based approaches to climate change adaptation	Lessons will be drawn to inform the implementation of componet 2 and 3 of the RECOFE project.

105. Furthermore, the RECOFE project complements other existing national systems of enhancing resilience to climate change. The RECOFE project also complements the EURECCCA/OSS currently under implementation. Therefore, the lessons learnt from the implementation of the EURECCCA/OSS will directly be informing the implementation of this project. For example, participatory planning and involvement of grass-root communities in project interventions creates ownership and smoothness of activity implementation that leads to adoption of project interventions/new technologies, catchment protection and ecosystem restoration among others. Also, most important to note is that the EURECCCA/OSS project aims to increase the resilience of communities to the risk of floods and landslides in Awoja, Maziba and Aswa catchments through promoting catchment based integrated, equitable and sustainable management of water and related resources. Some of interventions in this project are good for experiential learning and sharing.

G. Learning and knowledge management

106. The RECOFE project has considered knowledge and knowledge management under component four. Under this component lessons and best practices, arising from the major themes of this project will documented. Lessons and best practices on stakeholder capacity development especially at grass roots, those on constructing and maintenance of water infrastructure and nature based enterprises will be documented. The project will then facilitate such knowledge generated by packaging the information and later popularizing it into forms that can easily be accessed and utilized by the different stakeholders. Also best practices, other lessons and governance materials such as byelaws and ordinances, will be popularized and shared among stakeholders including grassroots. For instance in popularizing the knowledge, knowledge materials will be packaged in five local languages and directs spoken in the catchment. The project will also facilitate knowledge sharing through cross learning of innovative climate change adaptation interventions as well as learning events for various stakeholders.

107. To further add value to joint learning and experiential sharing amongst stakeholders, the proposed project intends to establish demonstration sites within the within the Katonga sub catchments. This intervention will further aid learning and knowledge management. Demonstration sites will be established as learning centres for the critical mass of population. The demonstrations will comprise of the water harvesting and storage structures as well as the nature-based enterprises. The project has an opportunity to learn from other on-going small-scale community/individual interventions, for example, nature-based enterprises such as honey production is implemented in some places in the country but in a fragmented way. Despite that, there are good lessons also that can be captured from these fragmented establishments. Therefore, the project will identify model farmers practicing this intervention for the purposes of documenting lessons and best practices. Case studies in some of the enterprises exist and will be documented. This offers good learning avenues to promote and sustain the proposed interventions. For marketing of community products, there are significant gaps that require fixing. Documenting market processes and designing market approaches of specific products will be done. With such an approach designed for RECOFE project, knowledge will be generated, captured and managed and supported for sharing and sustaining the project interventions.

H. Consultative process

Targeted consultations for concept development

108. The development of RECOFE proposal has followed a highly participatory and consultative process. The consultations process of developing the proposed project involved three main stages. The first stage of consultations aimed at developing the RECOFE concept. The second stage consultations were held at catchment level and validated at national level aimed at developing the full proposal. Overall, the consultative process stated initially with a meeting between the DWRM and Victoria Water Management Zone staff and GWPEA authorities in October 2017 when the decision to write and submit a concept to the Adaptation Fund was reached. The concept ideas were then derived from the Katonga Catchment Management Plan (CMP) that was developed during the 2017/2018 period. The development of Katonga CMP was done through a detailed participatory and consultative process at all levels from grass-root to Catchment as well as national level by a consultant. The Ministry of Water and Environment (MWE) later organized the final consultative workshop held on December

21st 2017 in which the consultant presented the final Draft Katonga CMP to stakeholders.

109. The participants that reviewed the draft CMP were: The Katonga Catchment Management Committee members (CMC); the leadership of the sixteen districts that constitute the Katonga catchment (i.e. Bukomansibi, Butambala, Gomba, Kamwenge,Kiboga, Kiruhura,Kyegegwa, Kyenjojo, Lwengo, Lyantonde, Masaka, Mityana, Mpigi, Mubende, Rakai and Sembabule); and stakeholders from the public institutions at the national and district levels including Lead Agencies such the National Forest Authority (NFA), National Environmental Management Authority (NEMA) and Non-Governmental Organizations (NGOs) among others. The basis of stakeholder consultations and review was to ensure that the views of all stakeholders are captured, considered and integrated into the CMP.

110. During the development of the RECOFE concept, additional stakeholder consultations were conducted, to re-affirm and add any emerging issues and strategic interventions outlined in the Catchment Management Plan. These consultations were limited in nature, but generated commitment and ownership from the stakeholder representatives. Targeted consultations for the concept then commenced in June 2019.

111. The stakeholders consulted included the National Designated Authority, the Ministry of Water and Environment i.e. staff of the Directorate of Water Resources Management (DWRM) at national and zonal level, political and community representatives from Katonga Catchment. The political leaders and community representatives from selected districts within Katonga catchment were consulted through interviews as key informants. Representatives from the following NGO's/CBO- Community Based Organisations were also consulted. These include: VI agroforestry, Uganda Youth Livelihood Program, Friendly Water, Suubi Center Education and Health, BOTIFA Youth Empowerment Group, MAMDEP Tree Planting Association, and Gomba Environmental Protection Association. It has been an on-going process until when the concept was approved by the Adaptation Fund in September 2020.

Consultations for full proposal development

112. During the full project formulation process, a field visit was conducted to the proposed project sites in Katonga catchment. Further detailed consultations were held with the Victoria Water Management Zone staff, the focal district authorities such as the District Chairpersons, Technical Staff for environment, Forestry, Agriculture and Natural Resources, Sub-County Chiefs, Sub-County Chairpersons and Community Development Officers. Grass-root level consultations were conducted in the catchment, at particular villages in the targeted sub-counties (**Annex 7**).

113. Consultations were conducted in formal community meetings organized by the local village leaders at the lower sub-national levels. To capture issues, challenges, and possible solutions of addressing the impacts of climate change at the local level, community members were organized and allowed to interact and work in Focus Group Discussions. After group work, participants were allowed to present their discussions in the plenary from which issues, problems and interventions recommended for the project were captured. During mobilisation, targeted 30% women representation at all levels in selected areas where consultations were held were targeted. Consultations were held in the afternoons to allow women participate in the consultations after attending to their gardening chores where they particularly earn a living. Local languages such as (Luganda, Rutooro and Runyankole) spoken in the selected sites were principally used to allow participants to freely express their views, seek clarities and make inquiries with the consulting team. While consulting, specific questions on livelihoods, sources of income and access t**o** land and other resources were tailored towards women because that is where they derive a living. This was done during focused group discussions where women were consulted differently from men on varied issues in a way that offered easy expression and articulation on issues with comfort.

114. Youth groups and councils structures do exist, youths representatives such as the chairpersons, vice chairpersons, secretaries were selected to participate and represent the views of their group members. The major intention of involving youth representatives in consultations process was to capture issues that are particular to youth.

Figure 14: Consultation community meeting in Ruyonza Sub-County, Kyegegwa district

Figure 15: Group work in a consultation community meeting at Mpumude Sub-County, Lyantonde district

Figure 16: Consultation community meeting in Lwemiyaga (Kyeera Sub-County), Sembabule district

Figure 17: Group work in a consultation community meeting in Lwabenge Sub-County, Kalungu district

115. Efforts were made to ensure detailed and representative consultations by reaching out to the critical mass of persons in the catchment. To further achieve consultations with a wider stakeholder base, a national stakeholder project development consultative and validation workshop was also held (Figure 18). The participants of this workshop consisted of representatives from the Catchment Management Committee, Civil Society Organisations (CSOs), private sector, resource users and women representatives, sub-county and District Technical staff representatives and the DWRM and MWE staff. Women and other disadvantaged groups were targeted for consultation because they interact more with the natural resources within the catchment. The project will generate a detailed consultation report with all the key issues from stakeholder emanating from the Katonga catchment. The consultations were done in compliance with the Environmental and Social policy and Gender Policy of the Adaptation Fund.

Figure 18: Consultative validation workshop in progress on 30th March 2021

Gender Considerations

116. In compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund, vulnerable groups and gender considerations were taken care of. Hence, the project consultation process was inclusive and appropriately considered gender as a major issue towards proposed interventions. For this case, deliberate efforts were made to ensure adequate representation of vulnerable members of communities such as women, youth and PWDs. Furthermore, to ensure adequate representation in implementation of the project components, detailed information was deliberately collected from men and women focusing especially on the elderly, disabled, children, youth and socio-economically disadvantaged groups. For this reason, deliberate efforts were made to ensure that the consulting teams endevoured to interact with the vulnerable among the women, men and youth at community level to ensure that the project interventions are gender sensitive and gender mainstreamed.

117. District women representatives were widely consulted and they facilitated during the meetings in some selected sites. They helped in the selection of consultation venues that were within the reach of the participants and allowed for easy and uninterrupted participations with all the participants. The District leadership in the selected project sites were instrumental in pointing out hotspots where climate change vulnerability, impacts and degradations of fragile ecosystems were most prevalent, and that formed the one of the criteria /basis of selecting beneficiaries of the project. The process of identifying stakeholders was aided by the use of the local government structures District, County, Sub- County, Parish and Villages in consultation with leaders at each level of governance. Information on the vulnerable group was made available by leaders at all levels via available documents such as District devilment plans and reports. Communities living within and communities adjacent the degraded parts

of the catchment were considered and special focus was put on women, youths, men and PWDs because they are particularly affected by impacts of climate change within the catchment.

118. A specific gender analysis and action plan was conducted **(Annex 6)**. In addition, to promote gender equality, representation and empowerment, the project has been deliberately designed to ensure that women play a prominent part in the four components of the project i.e. capacity enhancement including governance, adaptation actions under water infrastructural development and nature-based enterprises and knowledge management by deliberately targeting 50% of the beneficiaries/participants being women. The Uganda Gender Policy 2007 will guide the implementation of the gender action plan. The ability of men and women, boys and girls to enjoy the same status and have equal opportunity to realize/ harness their potential to contribute to development agenda of the country at large will be of key focus. Therefore, Gender considerations will be made at every stage and intervention of the proposed project gender will be a major consideration such that women constitute at least 50% of each activity whether for training and capacity building, provision of support such as inputs, germplasm, seeds, business information, exchange visits etc.. The specific activities in which 50% women participation will be targeted include.

- Facilitating development of simple biophysical water harvesting technologies for Agriculture and livestock production
- Provision of appropriate seed and improved pastures for increased agricultural and livestock production respectively
- Establishing Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass
- Provision of necessary tools to improve productivity of the nature based enterprises
- Provision of viable high value germplasm
- Providing funding support (in-kind and credit) for vulnerable communities (women, elderly, youth, PWDs) to scale -up nature-based enterprises
- Facilitating stakeholders to participate in business forums, trade fairs & exhibitions
- Facilitating business tours and pitches of business plans to the private sector
- Facilitating establishment and operation of a market information systems
- Facilitating registration of small-scale businesses
- Training entrepreneurs in business management skills
- Developing business plans for translation into functioning businesses
- Undertaking ecosystem restoration activities (wetlands and riverbank restoration, Reforestation etc.)
- Sensitising stakeholders in sustainable utilisation of natural resources (e.g. appreciation and importance of the natural ecosystems
- Facilitating experience sharing and cross-learning of innovative climate change adaptation interventions
- Organizing and participating in learning events in climate change adaptation

I. Funding justification with full cost of adaptation reasoning

Capacity of key grass root stakeholders in implementing climate resilient development initiatives strengthened USD 122,362

119. Grass-root communities are dependent on natural resources for their livelihoods. Dependence on natural resources is impacting on natural resources causing an increasingly complex task of incorporating climate change into their socio-economic activities. The capacity of grass root stakeholders affects their ability to anticipate, prepare for, detect, and respond to climate change impacts in their respective areas. Component one of this project therefore focuses on capacity development, encompassing actions that increase grass root stakeholders' ability to effectively enact climate change adaptation measures. This project will first focus on assessing the capacity needs of the grassroot stakeholders and induct and empower grassroot duty bearers with the knowledge and skills in climate change especially the adaptation measures. The induction process of the duty bearers is meant to impart in them knowledge and skills to be able to effectively implement the adaptation actions. Furthermore, the project intends to train the grassroot duty bearers in their roles and responsibilities. The stakeholders will be trained to appreciate their roles in anticipating, preparing, detecting and later on responding to climate change impacts in their communities as leaders. The project also intends to facilitate tool kit development for mainstreaming climate interventions in development initiatives. With such guide, management responses to climate change impacts should be easily incorporated into the management frameworks including those at the grass roots.

Governance of natural resources strengthened: USD 166,834

120. Although highly dependent on natural resources, the capacity to ensure sustainable management of natural resources such as land water and resources thein. Natural resources are currently degraded. Degraded resources cannot provide adequate ecosystem goods and services. As such, grassroot communities have been rendered more vulnerable to the impacts of climate change. Therefore, the project will focus on addressing the inadequate capacity for managing the natural resources. Accordingly, the project will facilitate the mainstreaming of human rights based approaches in climate change initiatives. Communities will be facilitated in advocating, lobbying and establishing public relations through creation of dialogue platforms and conducting climate change campaigns. Furthermore, the project will address planning and negotiation challenges of grassroot stakeholders in the process of natural resources governance. Accordingly, natural resources governance at grassroots will be strengthened by facilitating grassroot duty bearers to undertake and participate in resource use negotiations, develop management plans as well as develop and implement Memoranda of Understanding (MoUs) between the communities and duty bearers of the natural resources. In further strengthening governance of natural resources, the project will also support the development (where they are new) and strengthen existing governance and leadership frameworks such as byelaws, ordinances and guidelines. Therefore, improved governance of natural resources by the project leads to sustainable management of natural resources that increases the resilience of communities and ecosystems to climate change.

Increased water and food security: USD 603,196

121. Water demand expressed as a percentage of the total demand in the Katonga catchment, shows that that domestic water use draws more water than all the other three categories, primarily because the current farming practices are reliant on rain and the irrigation requirements are minimal. It is only supplemental in nature. Under the climate change impacts of increasing rainfall variability, water is inadequate and scarce for domestic, agricultural and other needs. The communities within Katonga catchment face several challenges due to climate change impacts. The communities find it hard to cope with the adverse conditions due to poverty. As agriculture is the economic mainstay of the catchment. Any shocks to agricultural production bear a knock-on effect on the economic situation and general wellbeing of the catchment population. Agriculture is however undermined by prolonged droughts and water stress, which directly affect the people's incomes, livelihoods and even education system. The proposed project intends to supplement the scares water resources through supporting the construction

of new as agreed upon low cost and appropriate physical water storage facilities. Development of simple biophysical water harvesting technologies for agriculture and livestock production. Micro-irrigation schemes will be constructed as learning centres for grassroot communities. Appropriate seed and improved pastures will also be procured for increased agricultural and livestock production. The water infrastructure proposed will enhance the community capabilities to utilize the harvested and stored water efficiently for domestic and agriculture production.

Increased income for improved stakeholder livelihoods: USD 636,226

122. Poverty is one of the underlying drivers of deforestation and forest degradation, wetland reclamation (fragile ecosystems) and generally low standards of living among the local population within the Katonga catchment. The proposed project is targeting to address the current adaptation deficits of communities through the identification of appropriate adaptation activities including income generation through nature- based enterprises. These enterprises are an entry point to support the communities to adapt to climate change impacts. The project will support the establishment of Income Generating Activities (IGAs) such as bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass. The tools vital for improving productivity of the nature based enterprises will be procured and availed to support the established nature- based enterprises. The enterprises are expected to provide financial rewards to communities and reduce pressure (in form of degradation and less pollution) being exerted to the natural resources in the catchment. The project will further encourage innovations such as eco-labelling of naturally produced honey. The project will link the honey producers to the market. It is in the interest of the project to promote the whole value chain (including production, handling processing and marketing) amongst the communities to meet the required standards and be able to access high premiums. These enterprises also play key role in acting as substitutes or complements to some of the community needs e.g. fuel wood and poles. In order to sustain the nature-based enterprises, the project intends to establish probable Sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, PWDs) to scale -up nature-based enterprises, facilitate the registration of small-scale businesses, train entrepreneurs in business management skills and develop business plans for translation into functioning businesses.

Enhanced ecosystem health: USD 286,643

123. The grassroot communities in Katonga catchment have exerted a lot of pressure on natural resources. Consequently, ecosystem degradation is high. The ability of ecosystems to provide sufficient ecosystem goods and services is limited and requires restoration efforts. This project will also focus on supporting stakeholders to undertake ecosystem restoration activities (e.g. wetlands and river bank restoration, Reforestation of degraded forest landscapes etc.). More efforts will be made to sensitise stakeholders in sustainable utilisation of natural resources (e.g. appreciation and importance of the natural ecosystems).

Lessons and good practices shared and adopted: USD 238,000

124. There is a general weakness in documenting lessons and good practices from projects, including the projects focusing on climate change. Besides, the little that is documented is not adequately disseminated and read by the recipients. Learning and adopting climate change solutions by the most vulnerable communities can be enhanced by cross-exchange of information and touring and/or visiting as well as learning from successful innovate adaptation projects. However, due to limited financial resources to execute such ventures impedes efforts of taking forward such well-meaning planned activities. The proposed project will focus on facilitating experience sharing and cross-learning of innovative climate change adaptation interventions. The project will also facilitate learning events in climate change adaptation. Efforts to document lessons, good practices, and climate related case studies and disseminate them for replication and up-scaling will also be facilitated by the project. Similarly, to aid wide access and reference to documents by various stakeholders, the project will support the efforts of popularizing the existing frameworks (i.e. policies, Ordinances and by-laws).

J. Sustainability of the project outcomes

125. The projects sustainability aspects are classified through the following categories: Socio-economic, environmental, technological, financial and Institutional. These are summarized below;

Socio-economic sustainability

126. The project will promote socio-economic sustainability through supporting existing and or new community resource use groups to undertake nature-based enterprises. In strengthening, the capacity of grassroot communities and other stakeholders especially during training, knowledge and skills to pursue or engage in socio-economic and livelihood activities with full awareness of the likely impact of the respective actions contributes to socio-economic sustainability. Socially, vulnerable groups of communities such as women, youth and PWDs, institutions, committees will work together during in activity implementation. This approach not only minimizes the likely conflicts among stakeholders but also promotes social cohesion and cross learning, which are vital, attributes for socially and economically sustaining the project. The community resource use group approach also presents several merits like promoting social cohesion, which enhances learning and sharing economic information (prices etc.) hence socio-economically sustaining the project interventions. The project proposes to construct water harvesting and storage structures, establish mini-irrigation schemes and promote nature-based enterprises. The project also is designed to promote development of business plans for small-scale businesses, facilitate registration of the businesses, train entrepreneurs in business management skills as well as establish and operate market information systems. It is expected under these interventions some finances inform will accrue either as income or small fees to develop and maintain small-scale infrastructure after project closure. Such finances and income will contribute to economic sustainability.

Environmental sustainability

127. The project will ensure environmental sustainability through supporting sustainable environmental interventions including restoration of degraded areas through tree planting, wetland restoration activities etc. Periodic monitoring and evaluation to track any changes that could have adverse impacts to the environment and ensuring timely mitigation measures are implemented. The Monitoring and Evaluation of tree planting and wetland restoration activities will be participatory and will be done by key stakeholders in the project. For project interventions that are anticipated to have significant social and environmental impacts, independent Environmental and Social Impact Assessments (ESIAs) will be undertaken and approval sought from the National Environment Management Authority (NEMA). The ESMF has an environmental and social monitoring plan that will guide periodic monitoring and evaluation to track changes that could have adverse environmental and social impacts and ensure adequate mitigation. The government officials will oversee the M&E function, which is under the Policy and Planning department at MWE. All f stakeholder groups will be represented during the M&E activities of the project. The essence of involving key stakeholders in M&E is to create a sense of ownership and continuity of project activities and promote sustainability. In addition, the project activities will be fused into the government development plans that will take over project activities when the project ends.

Technological sustainability

128. The project will build the capacity of extension staff within the Katonga catchment. The extension staff will be trained in the water and appropriate irrigation technologies, use of modern tools in enterprise development etc. This will ensure resident capacity to continue with the technologies when the project ends.

Financial sustainability

129. Currently, there are no adequate financing resources for investment in water security and enterprise development. The project will collaborate with various partners in Katonga and other catchments to mobilize resources, streamline project interventions into national and sub-national work plans and lobby the government (national and local) to allocate financial resources towards nature-

based enterprises and investment in appropriate water technologies for increasing resilience of communities and fragile ecosystems to impacts of climate change. This will ensure that these initiatives continue to get funding after the project ends. Furthermore, financial sustainability will be achieved because project interventions are not duplicated. Instead, the project promotes synergies with other projects and spreads benefits to other areas other than where current interventions are undertaken.

Institutional sustainability

130. The project envisages that the Project Steering Committee will support enhancing investment in water security, enterprise development and climate resilience beyond the project lifetime. In addition, the project is expected to strengthen the capacity of key institutions. The project implementation arrangement being linked to existing frameworks at the national level is the other factor that will contribute to institutional sustainability as it creates ownership. The project will also be promoted through capacity building of key staff within the catchment and interventions will be executed through the existing structures. The MWE and its partner, Global Water Partnership Eastern Africa have experience of learning from the past to improve its future programs. For example, the experiences gained during preparation of the EURECCCA/OSS project, also funded by the adaptation fund provided a very good basis in designing this project. Results and experiences from the new project will also be consolidated and used in future programs and operations of MWE. The project will train CMC and Sub CMC in water security and nature-based enterprises.

K. Environmental and Social Impacts and Risks

131. An analysis of the checklist of environmental and social principles with regards to the RECOFE project indicates that the project falls in category B, because the activities have no adverse environmental and social impacts. The anticipated project impacts are few, reversible and can easily be mitigated. At this stage, an Environment and Social Management Plan (ESMP) for the project has been developed. It critically analyses all the RECOFE project activities with a view of ensuring that environmental and social good practices are enforced. The Table 9 below provides a preliminary E&S impacts and risks assessment that was conducted in order to ensure that the project complies with the 15 principles of the AF's Environmental and Social Policy (ESP). The AF- ESP requires that projects comply and respect the laws, people's rights, gender equity, heritage, biodiversity and environment management. The results of the screening are presented in the Table 9.

Table 9: Environmental and social impacts and risk screening for RECOFE

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	**X** The project activities will comply with all the relevant National and laws, regulations and standards as well as the relevant international laws and regulations	
Access and Equity		**X** There is a potential risk if selection criteria of the beneficiaries is not fairly done. This could be a barrier to accessing the benefits and marginalize other stakeholders. To address this a detailed stakeholder mapping, consultations and assessments have been undertaken during the proposal development stage. Special focus has been given to vulnerable groups including the elderly, youth and women. Issues and proposed actions specific to each group have been captured and incorporated in the design of the project. This will ensure equitable participation in the project activities and access to project benefits by all groups including men women, elderly, youth and any other vulnerable and marginalized groups: The project is designed in such way that all categories of people shall benefit from the projects interventions including Capacity building, improved availability of water, improved crop and pasture varieties as well as Income generating activities and access to markets equally without discrimination. A project Grievance redress mechanism shall also be developed to handle any reported issues of inequality and lack of access to project benefits
Marginalized and Vulnerable Groups	**X** The main focus of the project is to increase the resilience of grass root stakeholders mainly the marginalized and vulnerable groups. The females as one of the marginalized and vulneral groups in the catchment are estimated to be 1,524,887 (50.5% of the total catchment population). [26]The proportion of other marginalized and vulnerable groups (and their vulnerabilities) in the catchment that include the youth, elderly, People With	

[26] UBOS 2014. Statistical Abstract 2014

	Disabilities, as well as the absolute poor (live on less than USD 1 per day) is to be determined at the onset of the project. The project will ensure that at least 50% of the project beneficiaries are representatives of the vulnerable groups. Stakeholder mapping and consultations have ensured that all the marginalized and vulnerable groups in the project area have been identified and incorporated in the project design and this ensured most of their issues in respect to the project have been captured and incorporated. Special attention shall also be given to refugees living in a refugee settlement in Kyegegwa District to ensure that those will participate and benefit from Project activities The total population of refugees in the target settlement of Kyaka is 123,086, of which females and children are 96,702 (79%), the elderly 3,061 (2%) and youth between 12 and 24 years 25934 (21%).. [27] The project monitoring system is also be based on desegregated data to enable tracking of the participation by these groups during project implementation.	
Human Rights	**X** The MWE and other executing entities of the project will ensure that the rights of marginalized and vulnerable groups as well as those of other stakeholders are observed. The project is designed to respect and adhere to the requirements of all relevant conventions on human rights. Therefore no further assessment of potential impacts and risks is required for compliance with human rights since the Project is designed to respect and adhere to the requirements of all relevant conventions on human rights. No violation of human rights is envisaged during implementation of this project and the project shall promote the rights of all stakeholders involved in the project.	
Gender Equality and Women's Empowerment	**X** The project design emphasizes gender equity and women empowerment through equal participation of both men and women in project activities. Furthermore, Women will be empowered in decision making through having representation on group management committees for the project investments and	

[27] UNHCR Uganda – Refugee statistics February 2020 -Kyaka II

	enterprises. Some of the key project activities including capacity building in climate smart agriculture practices and development of business plans as well as undertaking of nature -based enterprises including: bee keeping, commercial nurseries for fruits and trees, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of probable Sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, People With Disabilities-PWDs) to scale -up nature-based enterprises will deliberately target women and other vulnerable groups The project monitoring plan as well as the Grievance mechanism shall incorporate gender equity and women empowerment issues such that they are closely followed during project implementation. To emphasize the issues of gender in this project a more detailed assessment focusing on integration of gender issues in project design and implementation been done separately	
Core Labour Rights	**X** MWE will ensure that the project activities will fully comply with relevant National labour laws and regulations as well as ILO labour standards. Contracts under this project shall have clear clauses on compliance with the National labour laws and regulations as well as requirements relating to the safety of workers in accordance with ILO Convention in so far as they are applicable to the project. Activities throughout the project are targeted at reducing inequality and raising gender awareness for gender equality to overcome traditional stereotypes regarding the role of women in society. Positive discrimination in favour of women will be used to provide fair and equal opportunity to women who seek employment and gain from wages earned under this project.	
Indigenous Peoples	X There are no indigenous people in the project area. No assessment is need	
Involuntary Resettlement	X Project activities will not result in involuntary resettlement of	

	households or communities in the project area.	
Protection of Natural Habitats		**X** The rates of forest and wetland degradation in the catchment is high. For the period between 2005-20010, at least 70,065 hectares of forests were deforested and 29,132 hectares were degraded. Over 53% of wetlands in the catchment have been degraded. The project activities mainly under component 3 will lead to restoration and protection of these natural habitats.
Conservation of Biological Diversity		**X** Katonga catchment is known to have viable Sitatunga (*Tragelahpus spekei*) population inhabiting in the Katonga wetland system. Within the catchment is also the Katonga Wildlife Reserves that habours high populations of Waterbucks, Hippos, Elephant, Buffalo, Bushbuck, Reedbuck among others and Birds. In 2015, about 60 impalas and 5 Zebras were successfully translocated to the reserve in order to restock and boost animal populations for tourism. The population of Impalas now stands at 300 individuals. The current bird checklist is over 150 including species specific to wetlands, savannah and forests. Project activities under component 3 will contribute to restoration of these habitats and thus enhance the conservation of biodiversity.
Climate Change	X The main focus of the project is addressing climate change issues and impacts and to ensure that the project activities are focused to the project purpose a fully-fledged Climate Change vulnerability study has been conducted during the design and preparation of the projects full proposal. All the four project objectives of strengthening the capacity of key grass root stakeholders for climate change adaptation, promoting appropriate water storage technologies for increased water and food security, supporting establishment of nature-based enterprises for improved community livelihoods and supporting knowledge management and information sharing are focused on addressing the negative impacts of climate change and enhancing the resilience of communities. None of the activities is envisaged to result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change.	
Pollution Prevention and Resource Efficiency		**X** Activities 2.1.1.1 to 2.1.1.3 Activities under component 2 will involve will

		construction or rehabilitation appropriate physical water storage facilities as well as micro-irrigation schemes. Also, Activities 3.1.1.1 to 3.1.1.4 under component 3 shall involve undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling). These will involve activities that will bring about potential water and air pollution as well as resource use efficiency issues during pumping and utilization of water resources as well as value addition processes for the products from nature-based enterprises. Some of these issues shall be addressed using the project Environmental and Social management plan (ESMP) for the project and for any USP identified screening will be done and where necessary additional assessments shall be undertaken to in accordance with the environmental and social impact assessment guidelines to ensure compliance national laws and technical standards as well as AF ES principles In addition, sub-projects under the project shall have management committees' weather water or under IGAs to ensure that, resources under each project are efficiently utilized.
Public Health		X Construction activities for water infrastructure may cause air and water pollution and stagnant water in storage facilities may pose health risks such as Malaria. Also undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging as well as introduction of improved crop and pasture varieties may result it public health issues. These shall be addressed through detailed measures in the ESMP and for any USP identified screening will be done and where necessary additional assessments shall be undertaken to in accordance with the environmental and social impact assessment guidelines to ensure compliance national laws and technical standards as well as AF ES principles. In respect to the current prevailing COVID19 pandemic the PMU shall work hand in hand with other stakeholders to ensure that the standard operating procedures from the Ministry of health are adhered to during implementation of project activities.

Physical and Cultural Heritage	X Population trends in the Katonga catchment suggests that the population could double by 2040 with more than half of the population below the age of 14. This could pause threats of encroach to cultural and heritage sites such as the Nakayima tree in Mubende district, and Bigo Byamugyenyi in Ssembabule district. Although the project activities shall be undertaken in sub-countes hosting these cultural sites, some of the cross-cutting project activities including environmental education shall promote the conservation of these sites.	Activities
Lands and Soil Conservation	X Soil erosion is extreme in the cattle corridor in the country with predictable erosion rates of over 10tha^{-1}yr^{-1}. The recent population explosion outmatches farmers' ability to find arable land with the consequence that continuous tillage is the norm. Most of the Katonga catchment is highly degraded (62%), and only 1% is classified as lowly degraded. Soils will also further be exposed to erosion and contamination during the construction of the water infrastructure. Hence, soil and water conservation is one of the key issues to be addressed by the project especially through activities Activity 2.1.1.2 Facilitate development of simple biophysical water harvesting technologies for crop and livestock production and Activity 3.2.1.1 Undertake ecosystem restoration activities (wetlands and river bank restoration, Reforestation etc.).The project will enhance the conservation of water and soil resources and no further assessment is required in this regard.	

132. A detailed analysis of the possible environmental and social impacts of the RECOFE project in relation to the social and environmental principles of the adaptation fund that apply to this project is presented below. It discusses the probability of risks occurring, anticipated magnitude of impacts and possible mitigation measures.

Principle 1: Compliance with the law

133. The project activities shall be implemented in compliance within the National laws and regulations as explained in section 2.All relevant laws and regulations and their relevance to the project has been explained and no further assessment of potential impacts and risks is required for compliance with the law. For unidentified sub-projects especially under Activities 2.1.1.1 to 2.1.1.3 Activities under component 2 involving construction or rehabilitation appropriate physical water storage facilities as well as micro-irrigation schemes and Activities 3.1.1.1 to 3.1.1.4 under component 3 involving undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling) the risk screening process should be applied taking into account the adherence of these activities with the national laws and technical standards and further EIA may be required depending on the size and the location of their implementation to determine their impacts and possible mitigation measures.

Principle 2: Access and equity

134. There is a potential risk if selection criteria of the beneficiaries is not fairly done. This could be a barrier to accessing the benefits and marginalize other stakeholders. In order to address this a detailed stakeholder mapping, consultations and assessments have been undertaken during the proposal development stage. Special focus have been given to vulnerable groups including the elderly, youth and women. Issues and proposed actions specific to each group have been captured and incorporated in the design of the project. This will ensure equitable participation in the project activities and access to project benefits by all groups including men women, elderly, youth and any other vulnerable and marginalized groups. The project is designed in such way that all categories of people shall benefit from the projects interventions including Capacity building, improved availability of water, improved crop and pasture varieties as well as Income generating activities and access to markets equally without discrimination. After consultations with the stakeholders the following criteria was proposed for selecting beneficiary communities and groups (see Part II, section A, paragraph 73 of RECOFE proposal). In addition to applying this criteria to ensure that all people have equitable access to project interventions and benefits there will be sustained and continuous sensitization of all stakeholders to ensure that marginalized and most vulnerable groups will be considered, for example, women, youth (boys and girls), Peoples with Disability (PWD) as well as the absolute poor from the project. Lastly in case there are few issues that arise regarding access and equity during project implementation, the project has developed a Grievance redress mechanism that shall be followed in handling reported issues of inequality and lack of access to project benefits.

Principle 3: Marginalized and vulnerable groups

135. The main focus of the project is to increase the resilience of grass root stakeholders mainly the marginalized and vulnerable groups. Detailed stakeholder mapping and consultations have ensured that all the marginalized and vulnerable groups in the project area have been identified and incorporated in the project design. Some of the project activities like capacity building and IGAs are mainly designed to benefit these groups. To ensure equity amongst the groups, there will be deliberate effort to integrate vulnerable and marginalized groups who include women, youth (boys and girls),elderly, refugees and Peoples with Disability (PWD) as well as the absolute poor (live on less than USD 1 per day) to directly benefit from project activities. Activities under component 2 involving construction or rehabilitation appropriate physical water storage facilities as well as micro-irrigation schemes and Activities 3.1.1.1, 3.1.1.2, 3.1.1.3 and 3.1.1.4 under component 3 involving undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling) as well Identification and establishment of probable Sources of funding (in-kind and

credit) for vulnerable communities (women, elderly, youth, People With Disabilities-PWDs) to scale -up nature-based enterprises specifically target these groups in order to increase their employment opportunities and incomes and improve their livelihoods. The selection of project activities was done after wide consultations with all stakeholders and project beneficiaries in particular vulnerable and marginalized groups including Women, youth, elderly as well as PLWDs and this ensured most of their issues in respect to the project have been captured and incorporated. Special attention shall also be given to refugees living in a refugee settlement in Kyegegwa District to ensure that those will participate and benefit from Project activities. The project monitoring system is also based on desegregated data to enable tracking of the participation by these groups during project implementation. Continuous awareness raising about the project target groups and the need to involve the most vulnerable and marginalized groups will also help to alleviate the problem. Any outstanding issues on this can be addressed through the project grievance redress mechanism.

Principle 4: Human rights

136. The Project is designed to respect and adhere to the requirements of all relevant conventions on human rights in compliance with the ESP. No violation of human rights is envisaged during implementation of this project and the project shall promote the rights of all stakeholders involved in the project. No activities are identified whose execution is not in line with the established international human rights. Project objectives promote basic human rights for fair and equitable access to resources to enhance their resilience to climate change in the beneficiary countries.

Principle 5: Gender equality and women's empowerment

137. Despite significant progress, the vast majority of women are still subject to gender inequalities in Uganda. They continue to bear a disproportionate burden of poverty and illiteracy; they still have little access to economic resources and opportunities; many women still die in childbirth and are the first victims of the HIV&AIDS pandemic. Few Women own land and have less land tenure security than men. While women can often use land for free for subsistence farming, as soon as their production generates revenue, men want to highjack the proceeds. For activities that are long term like tree and fruit growing and ranching women often need to first seek the consent of their spouses to use the land.

138. The project design emphasizes gender equity and women empowerment through equal participation of both men and women in project activities. Furthermore, Women will be empowered in decision making through having representation on group management committees for the project investments and enterprises. Some of the key project activities including capacity building in climate smart agriculture practices and development of business plans as well as undertaking of nature -based enterprises including: bee keeping, commercial nurseries for fruits and trees, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of probable Sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, People With Disabilities-PWDs) to scale -up nature-based enterprises will deliberately target women and other vulnerable groups. The project monitoring plan as well as the Grievance mechanism shall incorporate gender equity and women empowerment issues such that they are closely followed during project implementation. To emphasize the issues of gender in this project a more detailed assessment focusing on integration of gender issues in project design and implementation been done separately. In addition the projects intends to carry out communication and sensitization of populations on the gender issues to ensure gender equality in access to water resources, improved crop and animal appropriate seed and improved pastures for increased crop and livestock production, nature based income-generating activities and strengthening representation of women and youth on project management committees as well as raising awareness on the use of the project grievance redress mechanism to solve issues.

Principle 6: Core labour rights

139. There is a potential risk for especially for Activities under component 2 involving construction or rehabilitation appropriate physical water storage facilities as well as micro-irrigation schemes and Activities 3.1.1.1, 3.1.1.2, 3.1.1.3 and 3.1.1.4 under component 3 involving undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling).

These activities shall involve the use of local labour especially during the construction Phases of the different projects. MWE will ensure that the project activities will fully comply with relevant National labour laws and regulations as elaborated in section 2 well as ILO labour standards. Contracts under this project shall have clear clauses on compliance with the National labour laws and regulations as well as requirements relating to the safety of workers in accordance with ILO Convention in so far as they are applicable to the project. Activities throughout the project are targeted at reducing inequality and raising gender awareness for gender equality to overcome traditional stereotypes regarding the role of women in society. Positive discrimination in favour of women will be used to provide fair and equal opportunity to women who seek employment as labour and gain from wages earned under this project. All stakeholders including workers and populations should be sensitized about the risks related to the activities to be undertaken activities.

140. In addition, emphasis should be put on giving the local people the first priority for activities they can manage, ensuring that adequate safety measures are in place, timely payments for services offered, non-discrimination on basis of sex, tribe while employing workers and a defined grievance redress mechanism for handling workers as well as a robust monitoring and evaluation system to ensure that these provisions are being implemented. For USPs risk-screening process should be applied considering the adherence of these activities with the national laws and technical standards and further EIA may be required depending on the size and the location of their implementation to determine their impacts and possible mitigation measures.

Principle 7: Indigenous people

141. There are no indigenous people in the project area. No further assessments are needed.

Principle 8: Involuntary resettlement:

142. The project will not result in involuntary resettlement of communities in the project area in regard to eviction or people involuntarily leaving their homes or even losing their land use rights. However, there is a risk that construction work under component 2 could cause damage or temporary inconvenience to people living in the areas (both beneficiaries and non-beneficiaries) and as such the risk cannot be assessed since they are Unidentified Sub-Projects (USP) at this stage. For these USPs risk screening process should be applied considering the adherence of these activities with the national laws and technical standards and further EIA may be required depending on the size and the location of their implementation to determine their impacts and possible mitigation measures.

Principle 9: Protection of Natural Habitats

143. The project activities will be taking place in areas surrounding Katonga Wildlife Reserve which covers part of the wetland system for the Katonga River. However most of the activities will have positive impact on the on the integrity of the reserve and the wetland system as they will promote their conservation. Key among these are; sensitizing stakeholders in sustainable utilization of natural resources (e.g. appreciation and importance of the natural ecosystems) and undertaking ecosystem restoration activities (wetlands and river bank restoration, Reforestation etc.). Therefore, the project will enhance the integrity of natural habitats among others. However, there is need to engage the project beneficiaries near the boundaries of the reserve to ensure that none-of the project or other activities encroaches into the reserve land. The already enacted Wetlands, River Banks and Lake Shores Management) Regulations, S.I., No. 3 /2000 shall be followed to ensure no degradation of any part of the wetland system/wildlife reserve during project implementation.

Principle 10: Conservation of biological diversity

144. Most of the Project activities promote and enhance biodiversity conservation as well as sensitizing stakeholders in sustainable utilization of natural resources (e.g. appreciation and importance of the natural ecosystems) and undertaking ecosystem restoration activities (wetlands and river bank restoration, Reforestation etc.). Therefore, the project will enhance the integrity of natural habitats as well as well as building the capacity of organized resource use groups to undertake nature-based enterprises like bee-keeping, fruit and tree nurseries, bamboo and incense stick growing that promotes biodiversity conservation. This is in line with the National Biodiversity Strategy and Action Plan, Nationally determined contributions (INDC) for Uganda and other relevant laws under section 2.

Overall, the project interventions will be implemented in some areas surrounding Katonga Wildlife Reserve hence contributing to the conservation of biodiversity inside the Wildlife reserve.

145. However, Output 2.1.1 under component 2 will involve will construction or rehabilitation appropriate physical water storage facilities as well as micro-irrigation schemes. The presence of labour and construction equipment as well as clearances for siting of the infrastructure for the projects could have negative impacts on the fauna and flora on certain intervention sites. Most of these fall under USPs and the risk screening process shall be applied taking into account the adherence of these activities with the national laws and technical standards and further EIA may be required depending on the size and the location of the projects. Further analysis will enable determination of more impacts and possible mitigation measures to reverse any negative impacts on the biodiversity on the project sites.

146. With guidance from District technical officer's care shall be taken to ensure that the tree species promoted by the project for restoration as well as crop and grass varieties are not invasive in nature to threaten the existing natural vegetation. Soil and water activities as well as restoration through tree planting of areas around water bodies shall prevent their siltation and enhance conservation of aquatic resources in these water bodies especially the Katonga river/river system. Follow up and monitoring of the implementation of mitigation measures proposed in the Project ESMP as well as those for individual USPs, awareness raising and capacity building on biodiversity conservation and other sound environmental management measures will ensure that biodiversity conservation will be enhanced during project implementation.

Principle 11: Climate change

147. The main focus of the project is addressing climate change issues and impacts and to ensure that the project activities are focused to the project purpose a fully-fledged Climate Change vulnerability study has been conducted during the design and preparation of the projects full proposal. All the four project objectives of strengthening the capacity of key grass root stakeholders for climate change adaptation, promoting appropriate water storage technologies for increased water and food security, supporting establishment of nature-based enterprises for improved community livelihoods and supporting knowledge management and information sharing are focused on addressing the negative impacts of climate change and enhancing the resilience of communities. All project activities are in line with the National climate change policy and strategic plan, NDC and priorities defined in the NAPA. Apart from likely changes in land use due to the field clearing to construct Water infrastructure and associated irrigation systems that may result in a slight decrease in sequestration capacity of the environment none of the activities is envisaged to result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change. But still this decrease in vegetation shall be offset through restoration activities. Where there is need for pumping use of Solar power or HEP shall be encouraged. The project approach of raising awareness on the impacts of climate change and sharing of lessons learnt and success stories as well as building the capacity of key stakeholders to undertake climate change focused adaptation interventions will have a significant impact in addressing climate change issues in the catchment and the country at large.

Principle 12: Pollution prevention and resource efficiency

148. Activities 2.1.1.1, 2.1.1.2, 2.1.1.3 Activities under component 2 will involve l construction or rehabilitation appropriate physical water storage facilities as well as micro-irrigation schemes. Also Activities 3.1.1.1 to 3.1.1.4 under component 3 shall involve undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling). These will involve activities that will bring about potential water and air pollution as well as resource use efficiency issues during pumping and utilization of water resources as well as value addition processes for the products from nature-based enterprises Construction activities for water infrastructure may also cause air and water pollution and stagnant water in storage facilities may pose health risks such as Malaria. Project activities are not anticipated to generate sizeable amounts of waste. The waste that will be generated during construction and processing of products form IGAs can easily be handled.

149. Some of these issues shall be addressed using the project Environmental and Social management plan (ESMP) for the project while for any USP identified, screening will be done and where necessary additional assessments shall be undertaken in accordance with the environmental and social impact assessment guidelines to ensure compliance with national laws and technical standards as well as AF ES principles.

150. Also sub-projects under the project shall have management committees' whether water or under IGAs to ensure that resources under each project are efficiently utilized. Capacities of these committees shall be built to ensure efficient resource utilization and to minimize or avoid pollution. The use of chemical fertilizers and pest control will not be encouraged or supported by the project, but instead manure, compost and organic pest control remedies will be promoted. In respect to the current prevailing COVID19 pandemic the PMU shall work hand in hand with other stakeholders to ensure that the standard operating procedures from the Ministry of health are adhered to during implementation of project activities.

Principle 13: Public Health

151. Construction activities for water infrastructure may cause air and water pollution and stagnant water in storage facilities may pose health risks such as Malaria due to mosquitoes that hide in the stagnant water or cholera if consumed when it is not boiled or treated. Furthermore, the process of handling agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging as well as introduction of improved crop and pasture varieties may result in public health issues especially as a result of pollution and food poisoning due to afro-toxins. These shall be addressed through awareness raising and capacity building of project beneficiaries to take all precautionary measures like to avoid water pollution and contamination, having the relevant PPE while undertaking processing and proper post-harvest handling of products from IGA activities, ensuring as well as treating or boiling the water before consumption. These shall be addressed through detailed measures in the ESMP and for USPs screening will be done and where necessary additional assessments shall be undertaken to in accordance with the environmental and social impact assessment guidelines to ensure compliance national laws and technical standards as well as AF ES principles. In respect to the current prevailing COVID19 pandemic the PMUs shall work hand in hand with other stakeholders to ensure that the standard operating procedures from the Ministry of Health are adhered to during implementation of project activities.

Principle 14: Physical and cultural heritage

152. As mentioned in 10 above most of the Project activities promote and enhance biodiversity conservation including sensitizing stakeholders in sustainable utilization of natural resources (e.g. appreciation and importance of the natural ecosystems) and undertaking ecosystem restoration activities (wetlands and river bank restoration, Reforestation etc.).These activities shall be undertaken in areas surrounding the Katonga Wildlife reserve and will thus enhance the conservation of the Physical and cultural heritage within the Wildlife Reserve. In addition, Lyantonde District one of the project focal Districts has a Cultural site called Bigo Bya Mugenyi. However, the project activities shall be undertaken in a different sub-county from the one with the cultural site. So the project activities will not interfere with the cultural sites hence no further assessment is required**.**

Principle 15: Land and soil conservation

153. Soil and water conservation is one of the key issues to be addressed by the project especially through activities Activity 2.1.1.2 Facilitate development of simple biophysical water harvesting technologies for crop and livestock production and Activity 3.2.1.1 Undertake ecosystem restoration activities (wetlands and river bank restoration, Reforestation etc.). The project will enhance the conservation of water and soil resources and no further assessment is required in this regard. Promotion of several IGAs will help reduce pressure and over exploitation of soils within the project sites. However, there is a potential risk of soil erosion during and after the construction of water and irrigation infrastructure. Efforts should be undertaken to ensure that these sites are properly restored with appropriate grasses and trees to avoid exposed landscapes. Communities and contractors shall be sensitized and trained to restore exposed degraded landscapes.

Unidentified Sub-Projects

154. Initial screening of the RECOFE Project according to AF Environment and social Policy as well as National laws standards and regulations has yielded areas and components with possible USPs in particular components 2 and 3. During implementation, in the event any USP is identified, more detailed E&S assessment will be conducted to identify activity-specific E&S management measures that need to be incorporated into the specific project. The process will be governed by the Risk Management Procedure of the AF; AFB.B32 33.7 Compliance with ESP update of PRR, and guidance for USPs-revised; the National Environment Act 2019 and as well the National Environment (Environmental and Social Assessment) Regulations, 2020.

Compliance with Adaptation Fund policies

155. All activities implemented under the USPs modality will adhere to the Adaptation Fund Environmental and Social Policy (AF ESP), revised in March 2016, which sets out the requirements for Implementing Entities (IEs) to assess and manage environmental and social risks in project implementation. The AF ESP defines the E&S Principles that AF projects abide by. The AF ESP defines that IEs shall adopt measures to avoid, or where avoidance is impossible to minimize or mitigate those risks during implementation. Any USP identified and implemented in the RECOFE project shall be screened according to the 15 Principles of the Environment and social policy of the adaptation fund for those that apply and covering all the USP projects' activities to ensure that appropriate mitigation measures are proposed for any negative.

Adherence to National Policies, Laws and Technical standards

156. Further to the compliance with the AF ESP and other International laws and policies, the RECOFE project is compliant with national laws, and adheres to all National Technical Standards that are applicable to the project. As such, all activities implemented as USPs will comply with these laws and standards. The laws and standards that are relevant for the USPs are listed above in Section 2. Any USP identified and implemented in the RECOFE project will, without exception, comply with the identified national laws and technical standards Uganda.

157. According to the National Environment Act 2019 and the National Environment (Environmental and Social Assessment) Regulations, 2020 a Project briefs shall be prepared for all identified USPs and submitted to the Executive Director for NEMA for review. After review, any of the three scenarios may hold:

158. If the executive director finds that the project will have significant impacts on the environment and that the project brief discloses no sufficient mitigation measures to cope with anticipated impacts, he or she shall require that the developer or MWE undertakes an environmental impact study. If the executive director is satisfied that the project will have no significant impact on the environment, or that the project brief discloses sufficient mitigation measures to cope with the anticipated impacts, he or she may approve the project or Where the executive director approves the project under sub regulation (2) of the National Environment (Environmental and Social Assessment) Regulations, 2020 regulation, he or she shall issue a certificate of approval on behalf of the authority in the form provided in the Second Schedule to these Regulations

159. In case it is decided that a study has to be undertaken, the following steps shall be undertaken: i) ***Scoping*** - Scoping help to determine the extent and approach of the EIA at an early stage in the planning process. Ii) ***Terms of Reference for an ESIA*** - Based on the findings from project scoping, project management shall prepare ToR and submit to NEMA and any other relevant Lead Agencies for review and approval before the EIS study is conducted. iii) ***Conducting Environmental Impact Study*** – This involves carrying out a detailed study of the key impacts according to the scoping report and ToR. The EIA Study is done according the National Environment Act 2019 and ESIA Regulations 2020. iv) ***Reporting*** - After the detailed study, an ESIA report is prepared including Environmental and Social Management Plan that is followed during project design and implementation to ensure that the suggested mitigation measures are followed. v) ***Environmental Monitoring***-environmental monitoring

is done in order to ensure that recommended mitigation measures are being implemented to plan and to ensure that the unforeseen ones are being addressed as well. vi) ***Environmental Audit*** – The National Environmental and social Impact Assessment Regulations 2020 and Audit regulations 2020, require that after the first year of operation, the developer must undertake an initial environmental audit. The purpose of the audit is to compare the actual and predicted impacts, and assess the effectiveness of the EIA, as well as its appropriateness, applicability and success.

Unidentified Sub-Projects (USPs) in the RECOFE Project

160. The current USP Policy shall apply to activities mainly in components 2 and 3 of which the detailed scale, scope and location are not yet identified at the time of full proposal development. It is anticipated that the USP Policy will be applied to the following activities during project implementation;

- Activity 2.1.1.1 Construct/rehabilitate agreed upon low cost and appropriate physical water storage facilities.
- Activity 2.1.1.2 Facilitate development of simple biophysical water harvesting technologies for crop and livestock production
- Activity 2.1.1.3 Facilitate construction of micro-irrigation schemes as learning centres
- Activity 2.1.1.4 Procure appropriate seed and improved pastures for increased crop and livestock production respectively
- Activity 3.1.1.1 Establish Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks growing, bamboo and agri-waste biomass.
- Activity 3.1.1.4 Establish value chains for key and agreed upon nature-based enterprises (including production, processing, handling/storage, packaging/ eco-labelling
- Activity 3.1.1.5 Provide inputs for selected vulnerable communities (women, elderly, youth, PWDs) to scale-up promising nature-based enterprises.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Management and Implementation arrangements for the project

Project management

161. Overall, the Ministry of Water and Environment (MWE) will be responsible for the overall management and oversight of the RECOFE project. It will be in charge of all the financial, monitoring, and reporting duties as an Accredited National Implementing Entity of the Adaptation Fund. In addition, the Ministry of Finance Planning and Economic Development (MoFPED), as the Designated Authority, will receive the funds from the Adaptation Fund and channel them to MWE. The MWE will manage the disbursements to the Executing Entity (EE) the Directorate of Water Resources Management (DWRM), which will be responsible for the implementation of the project in close collaboration with the Global Water Partnership Eastern Africa (GWPEA) at the national level. At the local level, DWRM has already established a zonal office in the Victoria Water Management Zone (VWMZ) and governance structures in form of the Stakeholders Forum and Catchment Management Committee in Katonga catchment that will be strengthened and used for coordination of project implementation. The project execution office at field level will be established at the Victoria Water Management Zone (VWMZ) in Mbarara and this will closely collaborate with local government structures in the execution of the project in line with the Catchment Management Planning Guidelines.

Project coordination

162. The project coordination arrangement will include a National Steering Committee (NSC) and the Project technical Committee. The NSC will be the highest decision-making body of the RECOFE project and will be responsible for overseeing project execution.. The NSC will be composed of representative stakeholders from the key institutions namely The Executing Entity (secretary to the committee), National Designated Authority (NDA), National Environment Management Authority (NEMA), Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Climate Change Department (CCD), GWPEA, Ministry of Trade, Private sector, CSOs/NGOs. The involvement of the private sector on the NSC is targeted towards attracting support of private sector players in the project interventions. Gender is a very important aspect of the project. As such, the project will targeted to have up to 50% of the NSC members being women. This will be an opportunity for the women to be empowered in decision-making. A Project Technical Committee will also be designated by DWRM to provide overall technical guidance to the project. The project Technical Committee will be drawn from different organizations and agencies that are closely linked and/or are related to major l aspects of the project.

Implementing entity

163. The project will be implemented by the Ministry of Water and Environment (MWE). As an accredited National Implementing Entity (NIE), MWE will be in charge of all financial, monitoring and reporting aspects to the Adaptation Fund. MWE will also provide administrative and management support to the project, including to the executing entities and will be responsible for reporting project related information to the Adaptation Fund. The executing agency will be the Directorate of Water Resources Management (DWRM), which will work in partnership with the Global Water Partnership Eastern Africa (GWPEA). DWRM is one of the specialized institutions of MWE responsible for water resources management in Uganda. The MWE through DWRM is executing an Adaptation Funded project entitled Enhancing Resilience of Communities to Climate Change through Catchment Based Integrated Management of Water and related resources in Uganda (EURECCCA)" worth USD$7.7Million and therefore has adequate experience in implementation of such projects. GWP Eastern Africa is a partner in the implementation of EURECCCA project, and is spearheading capacity building and knowledge management component of the project. The role of GWPEA in the RECOFE project will be to support DWRM in capacity building of stakeholders, documenting the lessons and best practices as well as creating linkages of the knowledge generated at the catchment level and the national level processes. In addition, GWPEA will support the monitoring component and specifically, ensure that the project activities are on track as planned in the project work plans. The roles of GWPEA will be elaborated and formalized through a Memorandum of Understanding with the Ministry of Water

and Environment before the project starts.

Executing Entities

164. The project execution will involve stakeholders at national and catchment levels. Overall, the project will be executed by the Directorate of Water Resources Management (DWRM) within the Ministry of Water and Environment in partnership with the Global Water Partnership Eastern Africa (GWPEA). The DWRM has experience in executing similar activities, for example, a project entitled Enhancing Resilience of Communities to Climate Change through Catchment Based Integrated Management of Water and related resources in Uganda (EURECCCA)" worth USD$7.7Million from the Adaptation Fund, whereas GWPEA is a partner to the EURECCCA project and is providing technical support and executing component 3 of the project on capacity building and knowledge management. GWP will perform the role of technical adviser and be responsible for providing technical guidance and support to the project. GWP will provide support to the project in the implementation of the capacity building and knowledge management components of the project ensuring strong linkages between the knowledge generated at the catchment level and the national level processes. It will provide support in the capacity building of stakeholders at national and local levels in various areas.

165. It is expected that the project will raise the profile of Environment and Natural Resource Management. It will also lay the foundation for establishing a structure that will be responsible to strengthening of key stakeholders, facilitate water security and promote nature-based enterprises in the Katonga catchment thereby increasing the resilience of communities and fragile ecosystems to climate change impacts and variabilities.

Table 10: Implementation arrangements, roles and responsibilities of project partners

No	**Implementing Entity**	
	Organization	**Roles and Responsibilities**
1.	Ministry of Water and Environment (An Accredited National Implementing Entity)	• Oversee overall financial and monitoring aspects of the RECOFE project • Reporting of project consolidated results to the Adaptation Fund • Approval of project annual work plan and budget for the partner Executing Entity (EE) • Approval of annual financial and technical reports for the partner EE • Provide administrative and management support to the partner executing entity
	Project Coordination	
2.	Project Steering Committee	• Provide strategic direction for the project; • Facilitate the cooperation between all project partners and facilitate collaboration between the Project and other relevant programmes, projects and initiatives in the catchment and region • Advise on issues and problems arising during project implementation;
	Project Technical Committee	• To advise on the technical aspects of the project • Support to review of technical documents
	Executing Entity	
	Organization	**Roles and responsibilities**
3.	Directorate of Water Resources Management (DWRM) in MWE	• Coordinate project management and execution, • Ensuring the project creates a positive impact on the beneficiaries • Consolidation of the results from all project sites • Ensure cross-fertilization of project interventions and increase their ownership • Monitoring and evaluation

		• Ensure compliance of project interventions with the national frameworks • Provide designated key personnel for coordination of project execution such as the Project Coordinator, Accountant and Monitoring, and Evaluation Officer • Ensure liaison on project activities among and between the MWE units, the catchment management committees, the field offices, local governance structures and other stakeholders.
4.	Global Water Partnership Eastern Africa	• Execution of selected project interventions • Provide Technical Advice, guidance and support to the project • Support in policy influencing, Monitoring and evaluation
5.	Victoria Water Management Zone (KWMZ)	• Coordinate implementation of project interventions at field and regional levels • Lead management of project interventions at Field level. • Prepare and submit quarterly, annual work plans and budgets to DWRM • Provide quarterly and progress reporting to DWRM
6.	Catchment Management Committee	• Participate in planning and implementation of project interventions at Field level • Provide liaison for project implementation between the Sub-Catchment Management Committees, DLGs and VWMZ.
7.	Uganda Water Partnership	• Undertake project interventions in close coordination with GWPEA
8.	Focal District Local Governments	• Participate in direct implementation of project interventions
9.	Project beneficiaries including communities, women, men and youth groups, PWDs, and CBOs	• Participate in direct implementation of project interventions • Maintain liaison for project implementation between the Sub-Catchment Management Committees, DLGs and VWMZ.

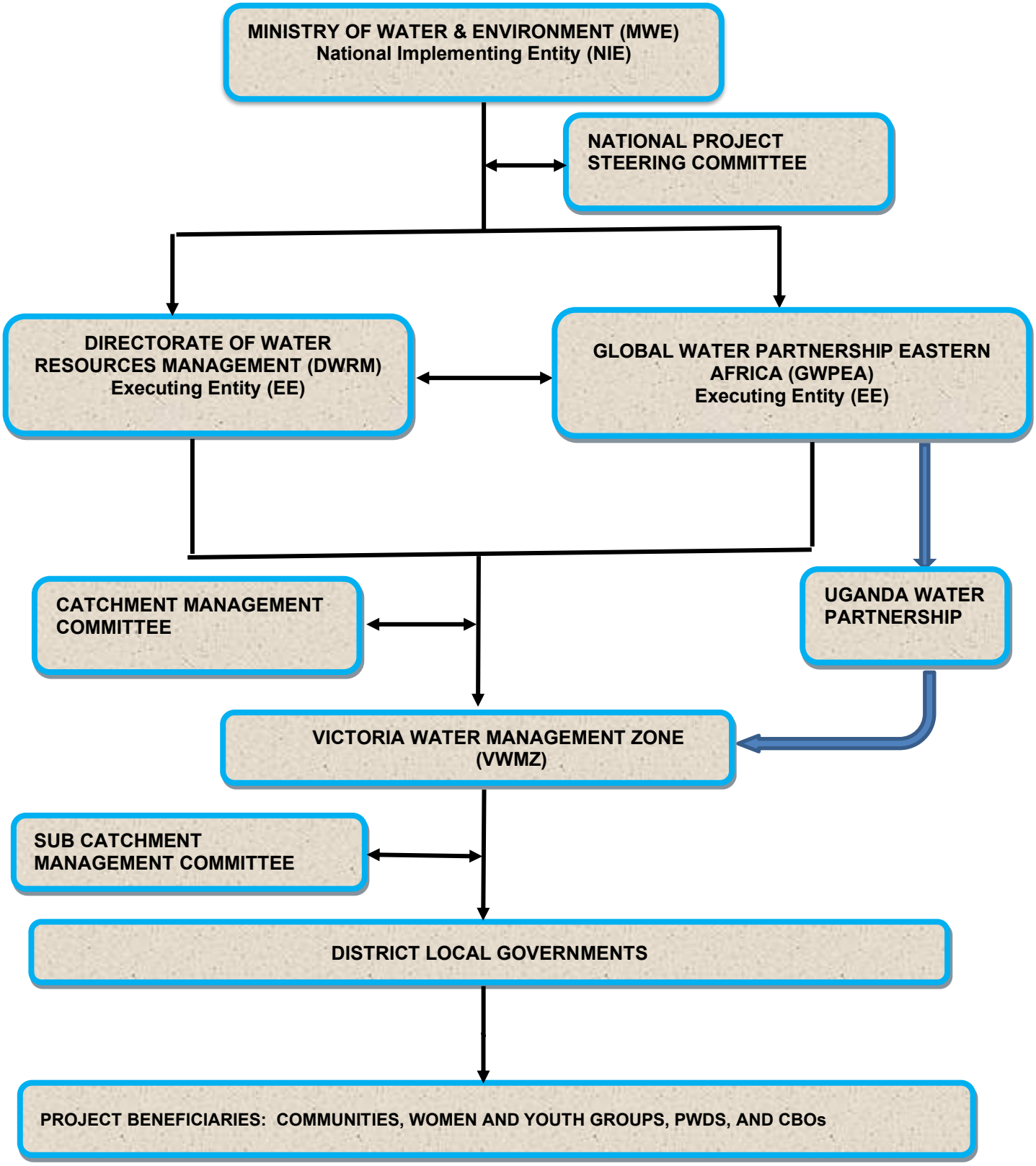


Figure 19: Project implementation organogram

B. Measures for financial and project risk management

166. Considering the complexity in Katonga catchment especially in terms of population and natural resources dynamics, a number of political and administrative risks are likely to emerge during implementation of RECOFE. Some of the likely risks that would influence project financial resources and risk management measures are presented in Table 11.

Table 11: Project financial risks and management measures

Risk	Rating	Risk Mitigation Measures
Financial/Economic risks		
Project financial management and accountability	Medium	• Ensuring strict adherence to separation of roles in financial management and audit • Providing financial management and audit support under the Monitoring and evaluation costs of the project.
Unstable/fluctuations in US dollar currency that may affect project results	Medium	• MWE as the implementing Partner will monitor the economic situation and seek for support from Adaptation Fund, address/adjust accordingly in agreement with the Executing Entity
Social risks		•
Ineffective communication of project goal and objectives and targets	Low	• Ensure that translation from English to local languages is done at local meetings • Ensure that project staff recruited to implement the project at community level understand and are fluent in the local languages • Involve community facilitators /or local leaders in organizing and facilitating the local meetings.
Political risks		
Limited participation in project interventions by communities in different areas	Low	• The project should mobilise and raise awareness before and during meetings at local community level to ensure that communities participate actively in project interventions. • The project will involve community leaders, catchment, and sub-catchment committee members to lead project Management team to project beneficiaries at community level. • Also the Community Based Organizations (CBO) operating in proposed project sites will be sensitized on the project activities for implementation
Low collaboration and conflicts over project involvement especially among refugees and host communities	Low	• The district political and technical leadership will be involved from the baseline survey stage, to national and field consultations. • Project updates and briefs will be regularly provided to the district political and technical leadership through a focal office at the district.
Lack of political will to implement the project at national and local levels	Low	• The Ministry, national and regional stakeholders as well as Local Government Authorities have all demonstrated commitment to the project • Comprehensive and rigorous stakeholder consultations were conducted during development of the proposal. • Regular consultations and updates and reporting with relevant institutions during project implementation • The implementing entity and Executing Entity have previously implemented other projects in and nearby the proposed sites hence are trusted amongst government and local leaders and other institutions.
Environmental risks		
Adverse weather affects or extreme weather events	Medium	• Ensure that climate information is communicated and correctly interpreted for local communities in and outside project sites

Emergence of pandemics		• Ensure close coordination with relevant Ministries such as Ministry of health and district authorities to effectively communicate and address the associated health risks by project management, staff and other stakeholders.
Technical risks		
Poor monitoring and evaluation and delayed delivery of outputs	Low	• Develop a detailed participatory M&E framework with the key project partners • Conduct regular follow ups and timely monitoring and evaluation
Limited capacity of communities and other stakeholders to implement interventions in project sites	Medium	• Conduct capacity building sessions in meetings and workshops as indicated in the project narrative • Undertake training sessions for different stakeholders Link the targeted project beneficiaries to project demonstration sites and implement the learning and exchange events

C. Measures for environmental and social risk management

167. The project environmental and social risks screening and analysis reveal limited significant environmental or social impacts as per the Environmental and Social Policy of the Adaptation Fund. The impacts levels are evaluated as low or medium risks. Therefore, the project is classified under Category B of risk implying that the project activities have small-scale impacts that are limited to the project area and can easily be mitigated through good environmental and social management practices. The Table below describes potential impacts and risks related to the proposed project in accordance with the Environmental and Social Principles of the AF. The project will undertake environmental and social impact assessment reviews as applicable (depending on the scale of the project activities to be undertaken). For those activities that have not yet been identified to the stage where effective ESP risks identification and mitigation (unidentified sub-projects USPs) is not possible, the respective EIAs will be conducted and ESMP provided. These USPs are related mainly to the nature-based enterprises or related field activities as highlighted in Part II, section K.

Table 12: Environmental and social risk mitigation measures

AF ES Principles checklist	Potential impacts	Mitigation measures
1. Compliance with the Law	Most of the project activities will comply with all the relevant National and laws, regulations and standards as well as the relevant international laws and regulations. However for activities 2.1.1.1, 2.1.1.2, 2.1.1.3 under component 2 that will involve construction or rehabilitation of appropriate physical water storage facilities as well as micro-irrigation schemes as well as Activities 3.1.1.1, 3.1.1.2, 3.1.1.3 and 3.1.1.4 under component 3 that will involve undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling there will be USPs that may require EIA depending on the size and the location of their implementation to determine their impacts and to comply with national and international standards , laws and regulations	• For the fully identified project activities, there is no need for mitigation measures since they generate no risks. • The assessment of the risks related to the USPs will be ensured according to the Unidentified Sub-Projects (USP) methodology of Impact Assessment and Risk Management detailed above and for those that require detailed assessments they will be conducted to ensure compliance with the national and international standards, laws and regulations.
2. Compliance with the Law	Most of the project activities will comply with all the relevant National and laws, regulations and standards as well as the relevant international laws and regulations. However for activities 2.1.1.1, 2.1.1.2, 2.1.1.3 under component 2 that will involve	• For the fully identified project activities, there is no need for mitigation measures since they generate no risks.

	construction or rehabilitation of appropriate physical water storage facilities as well as micro-irrigation schemes as well as Activities 3.1.1.1, 3.1.1.2, 3.1.1.3 and 3.1.1.4 under component 3 that will involve undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling there will be USPs that may require EIA depending on the size and the location of their implementation to determine their impacts and to comply with national and international standards , laws and regulations	• The assessment of the risks related to the USPs will be ensured according to the Unidentified Sub-Projects (USP) methodology of Impact Assessment and Risk Management detailed above and for those that require detailed assessments they will be conducted to ensure compliance with the national and international standards, laws and regulations.
3. Marginalized and vulnerable groups	• Marginalized and Vulnerable groups including the elderly, youth and women likely to miss out of the project activities and accessing benefits due to dominance by men and other well positioned decision makers who may take up all the available project opportunities • Limited or no access to land other resources may affect the ability of the marginalized and vulnerable groups to participate and benefit from project activities • Limited knowledge and awareness about the project about the project, its activities and benefits	• Marginalized and vulnerable groups will be deliberately targeted right from the project design to ensure that they participate and benefit from project activities. Beneficiaries selection criteria with positive bias towards these groups will be developed. • Marginalized and vulnerable groups people who do not have land will be given priority for access to other project activities such as IGAs, beekeeping, mushroom growing etc. that do not require a lot of land to undertake • Conduct awareness raising campaigns about the project and possible benefits targeting all categories of people using broad cast media and IEC materials in local languages to ensure that all the target communities understand • The project team and partners will also closely monitor the targeting of all project beneficiaries to ensure equal access of men, women youth and the most vulnerable
4. Human rights	Most of the project activities do not generate risks related to human rights. However for activities that will involve construction and for IGAs that may require additional labour to undertake there may be issues arising from treatment of workers by the project Contractors	Contractors and other employees shall be sensitized and obliged to observe the human rights of their workers as well as the guidance provided by the employment Act, Workers compensation Act, Occupational health and safety Act and other relevant local and internationals laws and regulations. • The Project Grievance redress mechanism shall also be used to resolve any human right issues that may arise.
5. Gender Equality and Women empowerment	• Limited participation of Women and youth groups in project activities due to low representation and lack of land and other resources • Limited benefits accruing to Women, youth and disadvantaged groups	• A Gender Assessment and Action Plan have been developed to ensure that gender issues and women are meaningfully integrated and engaged in project activities and realize an equitable share of project benefits • The project has been intentionally designed to emphasize gender equity and women empowerment through equal participation of both men and women in project activities • Women will be empowered at the start and during project implementation in decision making through having representation on group management committees for the project investments and enterprises. • Some of the key project activities including capacity building in climate smart agriculture practices and development of business plans as well as undertaking of nature -based enterprises including: bee keeping, commercial nurseries for fruits and trees, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of probable Sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, People With

		Disabilities-PWDs) to scale -up nature-based enterprises will deliberately target women and other vulnerable groups. This will enhance their access to finance and enable them to generate income, contributing directly to their financial empowerment • The project-monitoring plan as well as the Grievance mechanism shall incorporate gender equity and women empowerment issues such that they are closely followed during project implementation. • Project Reports to emphasize Gender segregated data. • Communication and sensitization of the population on the gender issues to ensure gender parity in USPs and all project activities • A Project Grievance redress mechanism to handle all issues arising during project implementation
6. Core labour rights	• Activities 2.1.1.1, 2.1.1.2, 2.1.1.3 under component 2 will involve construction or rehabilitation of appropriate physical water storage facilities as well as micro-irrigation schemes and Activities 3.1.1.1, 3.1.1.2, 3.1.1.3 and 3.1.1.4 under component 3 will involve undertaking of Income Generating Activities (IGAs) that may require hiring of additional labour depending on the scale at which the IGA is being undertaken. These may lead to accidents and occupational hazards during the project preparation and implementation. • Violation of existing labour laws and conventions including late or no payments, harsh working conditions and exploitation of workers, child labour, discrimination based on sex among others and general non- compliance with the National and international labour legislations and laws • Transmission of sexually transmitted diseases like HIV/AIDS especially during construction of Water infrastructure due to movement of workers from one area to another.	• Ensure that the Contractors for construction works and operators of IGAs on medium scales have site health and safety as well as emergency plans including risk assessment procedures and signage to reduce accidents • Sensitize Contractors, workers and proprietors of medium size IGAs on occupational health and safety procedures, employment and Workers compensation Acts to ensure that they meet the national and international standards, laws and guidelines • Provide workers with protective clothing (nose and mouth masks, ear muffs, overalls, industrial boots and gloves) and helmets as applicable and training them in their usage • Ensure that each site has a trained first Aiders and adequate first Aid Boxes to handle site emergencies • Ensure workers are paid Salaries in time and in line with the best common practices in the districts and villages; • Regular monitoring of all worksites by the PMU and District Environment officers to ensure compliance with the applicable national and international laws and standards • Contracts under this project shall have clear clauses on compliance with the National labour laws and regulations as well as requirements relating to the safety of workers in accordance with ILO Convention as far as they are applicable to the project. • Positive discrimination in favor of women will be used to provide fair and equal opportunity to women who seek employment as labour and gain from wages earned under this project • Sensitize local communities and workers on the dangers of HIV/AIDs and provide free condoms.
7. Indigenous people	There are no indigenous people in the project area so no impacts and no mitigation measures are required	
8. Involuntary resettlement	Project activities will not result in involuntary resettlement of households or communities in the project area	

9. Protection of natural habitats	• Encroachment on Katonga Wildlife reserve and Forest reserves within the Katonga river catchment. • Clearance of vegetation from sites for water infrastructure and irrigation systems development may affect natural habitats • Destruction of vegetation and compaction of soils by labour concentration of labourers and compaction of soil by construction equipment • Danger of fires especially those undertaking apiary/beekeeping	• Efforts shall be undertaken to ensure that the project activities do not encroach on the Katonga Wildlife Reserve and other forest reserves within the catchment through awareness raising on the importance biodiversity conservation ensuring that laws and regulations • Comprehensive site assessment shall be done to ensure that water infrastructure and irrigation systems are not located in sensitive habitats and mitigation measures to limit impacts proposed. • Vegetation clearance shall be limited in scope as much as possible to only those areas that are necessary to enable construction to limit the environmental foot print. • Ensure that construction work is done in the shortest time possible to limit the environmental foot print of the labourers and construction machinery. • Avoid unnecessary movement of construction machinery. • Follow-up of the implementation of all activities related to the protection and management of ecosystems and natural habitats; • Establishment of E&S Impact Assessment Studies; • Sensitization sessions to local communities on good environmental practices and the protection of natural habitats • Clearly demarcating the boundaries of the Wildlife reserve and the forest reserves within the catchment. • Training in proper honey harvesting methods and provision of improved harvesting equipment.
10. Conservation of biological diversity	• Vegetation clearance for water harvesting and storage sites and irrigation systems will result in loss of biodiversity on those sites • Opening up of new lands for agriculture may also lead to vegetation loss • Appropriate seed and improved pastures for increased crop and livestock production may turn out be invasive	• Vegetation clearance should be minimized as much as possible. Only the areas required for siting the infrastructure facilities should be cleared. • Selection of proposed construction site areas should try as much as possible to avoid sensitive habitats that have high diversity of indigenous plants; • Offset planting should be undertaken where sizeable areas of biodiversity are to be cleared • Opening up of virgin lands for agriculture expansion should be discouraged where possible and improved land management practices promoted to improve the productivity of the existing agricultural lands. • Standards should be followed and relevant technical advice sought to ensure that the crop and pasture species introduced are not invasive.
11. Climate change	• The project activities do not generate risks related to climate change	• The project activities do not generate risks related to climate change so there are no mitigation measures to plan; • The main focus of the project is addressing climate change issues and impacts and to ensure that the project activities are focused to the project purpose a fully-fledged Climate Change vulnerability study has been conducted during the design and preparation of the projects full proposal. All the four project objectives of strengthening the capacity of key grass root stakeholders for climate change adaptation, promoting appropriate water storage technologies for increased water and food security, supporting establishment of nature-based enterprises for improved community livelihoods and supporting knowledge management and information sharing are focused on addressing the negative impacts of climate

		change and enhancing the resilience of communities. None of the activities is envisaged to result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change
12. Pollution prevention and resource efficiency	• There is potential of water contamination in the storage reservoirs or irrigation systems • Over use or un regulated usage of the water resources	• Ensure establishment of water management committees to ensure regular maintenance of water sources and irrigation systems reducing changes of contamination. • Ensure regular quality control checks and monitoring to detect and address any sources of pollution and contamination. Regular sensitization on water source protection and maintenance • Ensuring regulated use of water resources through enactment of bylaws
13. Public Health	• The water storage facilities that will be constructed during the project may act as a source of water or vector-borne diseases such as malaria in cases where mosquitoes hide in stagnant water points or cholera where people may take water without treatment/boiling • High concentration of workers at Water infrastructure construction sites during the construction could increase the risk of spread of sexually transmitted diseases (STD) especially that most vulnerable members of communities. • Potential risks to safety of persons and animals around the dams/tanks	• Sensitize communities and other stakeholders on water treatment and control of water borne • Sensitize workers and community members on HIV/AIDS prevention and control and provide. • Give priority to workers in the project sites to avoid migration of workers • Ensure fencing is done around the Water tanks/dams to ensure safety of people and animals • Ensure the workers and Local people construction, maintaining/cleaning the tanks and reservoirs have appropriate PPE
14. Physical and cultural heritage	• There is a possibility of encroachment of Katonga Wildlife Reserve or other forest reserves either accidentally or intentionally especially for agricultural purposed that may endanger cultural resources • Danger of fires especially those undertaking apiary/beekeeping	• Creating awareness on the need to conserve cultural resources • Clearly demarcating the boundaries of the Wildlife reserve and the forest reserves within the catchment. • Training in proper harvesting methods and provision of improved harvesting equipment
15. Soil and land conservation	• Construction activities including construction/rehabilitation of low cost and appropriate physical water storage facilities and construction of micro-irrigation schemes as learning centers as well as agricultural activities may lead to soil exposure, erosion and compaction.	• Ensuring all exposed areas during construction are restored using grass or trees • Training project beneficiaries involved in agriculture activities/enterprises in sustainable soil and water conservation measures.

Grievance Redress Mechanism

168. The Project GRM has been developed in line with the Ministry of Water and Environment – Grievance Redress Mechanism 2018 ,the eight internationally accepted principles for the design of grievance mechanisms as elaborated by the UN (UN Human Rights Council, 2011) that include Legitimate, Accessible, Predictable, Equitable, and Transparent and Rights compatible, enabling continuous learning and engagement and dialogue as well as the Ad Hoc Complaint Handling Mechanism (ACHM) of the adaptation fund. The purpose of the Grievance Redress Mechanism is to provide people that shall be affected by the Project activities with an independent mechanism through which their complaints and issues can be addressed. The GRM shall consist of Grievance Redress committees at two levels one at Project sites with the Team Leader of the Victoria Water Management Zone (VWMZ) as the Chairman of the Committee (GRC). The members at this level include; VWMZ – Team Leader – Chairman, LC V Chairperson – Member, RECOFE Project Manager – Secretary, Contractor – Member in cases where a private contractor is involved, 111 – Chairman-Member, community Representative as well as Representative of a local CBO or NGO/ Religious Leader operating in the area. The second GRC level will be at national level with the following members appointed by the Permanent Secretary, Commissioner – Department of Environment Support Services – Chair, Assistant Commissioner Environment Affairs (Monitoring, Compliance, Assessment, and Education) – Member, Principal Sociologist– Member, Principal

Environment Officer (Monitoring and Compliance) – Member, Project/Program Manager – Secretary, Community Representative as well as the representative of a local CBO or NGO/ Religious leader. The Manager of any of the projects or Programs will be the secretary to the committee at the time issues and complaints from his project or program are being addressed.

169.

170. The GRCs are mandated to address grievances and complaints by a person, a group of persons or a community who/which have been or may be adversely impacted by a project. through problem-solving methods and/or compliance review, as appropriate. To initiate proceedings on its own to investigate grievances of a person, a group of persons or a community who/which have been or may be adversely impacted by a project as well as monitoring whether decisions taken by the Director/PS based on recommendations made by Grievance Regress Committee, or agreements reached relating to grievances and complaints, have been implemented. All complaints and grievances shall be first handled at the first GRC I and if the parties fail to reach an agreement through various engagements then the complaint shall be referred to the GRC 2 level at the Ministry of Water and Environment that is the implementing Agency of this Project. At both stages, the following steps are taken in addressing the complains:

Detailed Implementation Steps: The steps outlined below are critical to the success of any GRM are indicated in Figure 11 below.
Grievance Redress Value Chain

The process of implementing a GRM involves the following steps,
Step 1: Decide on Focal offices
Step 2: Receive and register complaints.
Step 3: Screen and refer the complaints.
Step 4: Coordinate with other GRMs/ agencies (if required).
Step 5: Assess the complaint.
Step 6: Formulate a response.
Step 7: Select a resolution approach
Step 8: Implement the approach.
Step 9: Settle the issues/complaints

Step 10: Track, document, and evaluate the process and results.
The detailed GRM is elaborated in Chapter 8 of the ESMF

D. Monitoring and evaluation arrangements

171. Project Monitoring and Evaluation will be carried out using the MWE standards. Quarterly and annual performance reports will be prepared. The Adaptation Fund's Results Tracker will be used in the reporting exercise. To assess progress of activities and lesson learning, there will be independent mid-term and final evaluation. The Ethics and Finance Committee (EFC) of the Adaptation Fund is the responsible committee for ensuring that projects comply with Monitoring and Evaluation. It is a requirement by the Adaptation Fund board for projects under implementation to submit annual status reports to EFC and ensuring that the Executing Entities have the necessary capacity to undertake Monitoring and Evaluation exercise.

172. The MWE as an implementing entity has the necessary capacity to undertake M&E activities. The Ministry has designated officers within its structures to monitor field activities and ensure that the project targets are on track. In addition, the Victoria Water Management Zone (VWMZ) staff will undertake the evaluation and prepare annual reports. The MWE will assign a project manager who will be responsible for ensuring that the project interventions are implemented and are on track as proposed in the work plan. The MWE will ensure that **timely progress reports** are prepared. These will indicate status of project implementation. The reports will include: Progress based on the submitted project results framework, Lessons learned and good practices emanating from project interventions. The project has designed an M&E work plan and budget (Table 13) detailed the M&E activity to be performed and the corresponding budget.

Table 13: Project monitoring and evaluation work plan and budget

M&E activity	Responsible parties	Budget (USD)	Time frame												Notes
			2021	2022				2023				2024			
				Quarters											
			4	1	2	3	4	1	2	3	4	1	2	3	4	
Inception workshop	MWE	15,000														Within two months after signing the contract
Baseline study (to update the current baseline), Environmental, social and gender analyses	MWE	25,000														Will be undertaken at project inception to facilitate the tracking of changes and/or impact.
Field visits to measure and report on project results and targets (Quarterly and annual Reports)	M & E Officer, and Team Leader WMZ	Team support costs were included in the Project's implementation														To be done continuously-Will be undertaken quarterly
Monitoring Project outputs by Project Team/MWE and reporting	Project Manager and MWE, GWPEA	Team support costs were included in the Project's implementation														will be done Semi-annually
Visits to field sites for joint review of status and	Project team/ MWE and	15,000														Will be done yearly

project progress and reporting	GWPEA															
Independent mid-term evaluation	MWE Project team, Independent consultants hired to carry out the evaluations	15,000														Will be done after One and half year
Independent final evaluation	MWE	15,000														Will be done at least two months before the end of the Project
Final project report	Project Manager/ MWE	None														Will be submitted at the end of the Project
Final project audit	MWE	20,000														Will be done at least two months before the end of the Project
Total M&E Costs		**105,000**														

E. Results framework with milestones, targets and indicators

Table 14: Project results framework

Result	Indicators	Baseline	Milestone (after 1.5 years)	End of Project Targets	Means of Verification	Responsible Parties	Risks and Assumptions
Impact							
Enhanced resilience of communities and fragile ecosystems to climate change impacts and variability in Katonga Catchment	• Number of direct beneficiaries of CC adaptation measures (50% women) • Number of indirect beneficiaries of CC adaptation measures (50% women)	• 0 • 0	• At least 6,256 community members (with 3,128 women) directly benefiting from adaptation interventions • At least 12,512 community members (with 50% women indirectly benefiting from project interventions)	• At least 12,512 community members (with 6,256 women) directly benefiting from adaptation interventions. • At least 29,191 community members (with 50% women indirectly benefiting from project interventions)	• Initial Baseline survey • Mid-term and End of project reports • Independent Evaluation report • Field visit reports • M&E reports • Interviews with local leaders and community members	• MWE • DWRM • Independent Consultants • VWMZ • Focal District Local Governments	• Availability of adequate security for project implementation • Political will to support project activities at regional, national and local levels • There are no major inflationary pressures • There no major natural disasters and

							pandemics to impede project implementation.
Result	**Indicators**	**Baseline**	**Milestone (after 1.5 years)**	**End of Project Targets**	**Means of Verification**	**Responsible Parties**	**Risks and Assumptions**
Objectives							
1. To strengthen the capacity of key grass root stakeholders for climate change adaptation	1.1 Proportion of the targeted key grass root stakeholders that are aware of CC impacts and climate resilient initiatives/ measures 1.2 Proportion of community governance structures with improved capacities	To Be Determined (TBD)	• At least 40% of targeted key stakeholders that are aware of CC impacts and climate resilient initiatives/ measures • At least 50% of community governance structures that have 50% women leaders.	• At least 90% of targeted key stakeholders that are aware of CC impacts and climate resilient initiatives/ measures • At least 90% of community governance structures that have 50% women leaders.	• Initial Baseline survey • Mid-term and End of project reports • Independent Evaluation report • Field visit reports • M&E reports • Interviews with local leaders and community members	• MWE • DWRM • GWPEA • Independent Consultants • VWMZ • Focal District Local Government leaders	
2. To promote appropriate water storage technologies for increased water and food security	2.1 Proportion of HHs in targeted areas that are accessing/utilizing appropriate/improved water harvesting/storage facilities 2.2 Proportion of food secure HHs in targeted project sites	To Be Determined (TBD) during the initial baseline study	• At least 40% of HHs in targeted communities access/utilize appropriate/improved water harvesting/storage facilities • At least 40% of HHs in targeted sites are food secure.	• At least 90% of HHs in targeted communities access/utilize appropriate/improved water harvesting/storage facilities • At least 90% of HHs in targeted sites are food secure.	• Baseline survey • Mid-term and End of project reports • Independent Evaluation report • Field visit reports • M&E reports • Interviews with local leaders and community members	• MWE • DWRM • Independent Consultants • VWMZ • Focal District Local Government leaders	
3. To support establishment of	3.1 Proportion of HHs in targeted areas that are	TBD	• At least 40% of HHs in targeted	• At least 90% of HHs in targeted	• Baseline survey	• MWE	

nature-based enterprises for improved community livelihoods	engaged in alternative IGAs 3.2 Proportion of HHs with at least 25% increase in aggregated income 3.3 Proportion of degraded fragile ecosystems restored/conserved		areas that are engaged in alternative IGAs • At least 40% of HHs in targeted areas have at least a 25% increase in aggregated income • At least 40% of degraded fragile ecosystems restored/conserved	areas that are engaged in alternative IGAs • At least 90% of HHs have at least a 25% increase in aggregated income • 90% of degraded fragile ecosystems restored/conserved	• Mid-term and End of project reports • Independent Evaluation report • Field visit reports • M&E reports • Interviews with local leaders and community members	• DWRM • Independent Consultants • VWMZ • Focal District Local Government leaders	
4. To support knowledge management and information sharing	4.1 Proportion of community members who have acquired and demonstrate practical knowledge and skills of how well-designed climate resilient development measures can significantly and concretely contribute to economic development, poverty strategies and enhance fragile ecosystems	TBD	• At least 40% of HHs in targeted areas have adopted/practice climate resilient development measures	• 90% of HHs in targeted areas have adopted/practice climate resilient development measures	• Baseline survey • Mid-term and End of project reports • Independent Evaluation report • Project implementation reports • Field visit reports • M&E reports • Interviews with local leaders and community members.	• MWE • DWRM • GWPEA • Independent Consultants • VWMZ • Focal District Local Governments leaders	
Result	**Indicators**	**Baseline**	**Milestone (after 1.5 years)**	**End of Project Targets**	**Means of Verification**	**Responsible Parties**	**Risks and Assumptions**
Component 1: Strengthening the capacity of key grass root stakeholders for climate change adaptation							
Outcome1.1 Capacity of key grass root stakeholders in	• Number of Key grass root stakeholders who have acquired and demonstrate practical	TBD	50 persons	100 persons	• Baseline survey • Mid-term and End of project	• MWE • DWRM • GWPEA • Independent	• Political stability within the catchment

implementing climate resilient development initiatives strengthened	knowledge and skills of how well-designed climate resilient development measures can significantly and concretely contribute to economic development, poverty strategies and enhance fragile ecosystems • Percentage increase of targeted communities undertaking climate change adaptation actions.				reports • Independent Evaluation report • Field visit reports • M&E reports • Interviews with local leaders and community members	Consultants • VWMZ • Focal District Local Government leaders	ensures continuity • The persons trained will be retained in these positions within and beyond the project life time
Output 1.1.1 Capacity building program for key grass root stakeholders established	• Number of trainings conducted • Capacity needs assessment conducted • Number of people empowered • Number of people trained (Disaggregated by sex) • Number of Domesticated tool kits developed		• At least 2 capacity building trainings conducted • A capacity needs assessment report • 100 persons to be empowered (50% women) • At least 100 people trained (at least 50% women) • One tool kit developed	• At least 3 capacity building trainings conducted • A capacity needs assessment • 200 people empowered (50% women) • At least 200 people trained (at least 50% women) • One tool kit developed	• Participants lists, • Evaluation forms, • Certificate of completion of training • Mid-term and End of project reports • Independent Evaluation report • Field visit reports • M&E reports • Interviews with local leaders and community members	• MWE • DWRM • GWPEA • Independent Consultants • VWMZ • Focal District Local Government leaders	
Outcome 1.2 Governance of natural resources strengthened	• Presence of gender specific measures in the catchment arrangements and integration thereof into climate change		• At least 15% of leadership roles/responsibilities are spearheaded by	• At least 30% of leadership roles/responsibilities are spearheaded by	• Knowledge Attitude and Practices (KAP) survey • Stakeholder	• MWE • DWRM • Independent Consultants • VWMZ	There is an existing enabling environment in support of climate change

	initiatives and/or economic development strategies) • Number of rights holders (custodians) engaged in accessing information		women	women	mapping reports • Community reflection meetings minutes • Mid-term and End of project reports • Independent Evaluation report • Field visit reports • M&E reports • Interviews with local leaders and community members	• Focal District Local Government leaders	adaptation and policy frameworks
Output 1.2.1 Community group leadership structures orientated in leadership and management	• Number of key duty bearers and right holders trained who display basic knowledge and take corrective actions about their communities' rights over territories and natural resources		• At least 50 people trained	• At least 100 people trained	• Mid-term and End of project reports • Independent Evaluation report • Field visit reports • M&E reports • Interviews with local leaders	• MWE • DWRM • Independent Consultants • VWMZ • Focal District Local Government leaders	
Result	**Indicators**	**Baseline**	**Milestone (after 1.5 years)**	**End of Project Targets**	**Means of Verification**	**Responsible Parties**	**Risks and Assumptions**
Component 2: Promoting appropriate water storage technologies for increased water and food security							
Outcome 2.1 Increased water and food security	• Percentage increase of households with suitable daily water & food and fodder consumption for livestock	TBD	• At least 15% increase of households with suitable daily water & food and fodder consumption for	• At least 30% increase of households with suitable daily water & food and fodder consumption for	• Project implementation reports • Mid-term and End of project reports • Independent	• MWE • DWRM • Independent Consultants • VWMZ • Focal District	

			livestock	livestock	Evaluation report • Field visit reports • M&E reports • Interviews with local leaders and community members	Local Government leaders	
Output 2.1.1 Innovative and agreed upon multi-stakeholder water storage technologies adopted	• Number of households with demonstrated water harvesting enhancing options to reduce water scarcity for domestic and agricultural production within the catchment	TBD	• At least 50 HHs with demonstrated water harvesting options	• At least 100 HHs with demonstrated water harvesting options	• Mid-term and End of project reports • Independent Evaluation report • Field visit reports • M&E reports • Interviews with local leaders	• MWE • DWRM • Independent Consultants • VWMZ • Focal District Local Government leaders	
Result	**Indicators**	**Baseline**	**Milestone (after 1.5 years)**	**End of Project Targets**	**Means of Verification**	**Responsible Parties**	**Risks and Assumptions**
Component 3: Supporting nature-based enterprises for sustainable socio-economic development							
Outcome 3.1 Increased income for improved stakeholder livelihoods	• Percentage increase in income for project beneficiaries in targeted project sites	TBD	• Income for project beneficiaries increased by at least 15%	• Income for project beneficiaries increased by at least 30%	• Household surveys • Mid-term and End of project reports • Independent Evaluation report • Field visit reports • M&E reports • Interviews with local leaders and community members	• MWE • DWRM • Independent Consultants • VWMZ • Focal District Local Government leaders	Persons enjoying superior intellectual or social or economic status easily exert influence
Output 3.1.1	• Number of households		• At least 25 HHs	• At least 50 HHs	• Project	• MWE	

Nature-based enterprises promoted	taking up new interventions as a result of the project • Number of demonstrated livelihood enhancing options to reduce poverty and environmental degradation in the catchment		taking up new interventions as a result of the project	taking up new interventions as a result of the project	implementation reports • Mid-term and End of project reports • Field visit reports • M&E reports • Interviews with local leaders and community members	• DWRM • Independent Consultants • VWMZ • Focal District Local Government leaders	
Output 3.1.2 Market linkages of products from nature-based enterprises established	• Number of producers linked to existing or new value chains		At least 50	At least 200	• District reports • Field visit reports • M&E reports • Interviews with local leaders and community members	• MWE • DWRM • Independent Consultants • VWMZ • Focal District Local Government leaders	
Output 3.1.3 Entrepreneur skills of stakeholders enhanced	• Number of producers trained in crucial aspects for inclusion in VC management, negotiation, identification of partnership opportunities, market outlooks, etc.		• At least 100 producers trained	• At least 200 producers trained	• Project implementation reports • Field visit reports • M&E reports • Interviews with local leaders and community members	• MWE • DWRM • Independent Consultants • VWMZ • Focal District Local Government leaders	
Outcome 3.2 Enhanced ecosystem health	• By end of project, Sediment load within rivers in the catchment is maintained below average threshold • Proportion of ecosystems area restored/conserved		• <7% • A least 40% restored	• <7% • At least 60% restored	• Project implementation reports • Field visit reports • M&E reports • Interviews with local leaders	• MWE • DWRM • Independent Consultants • VWMZ • Focal District Local Government	

					and community members	leaders	
Output 3.2.1 Fragile ecosystems conserved	• Area of fragile ecosystem restored • Number of community sensitization events organized	TBD	• At least 500ha of wetlands restored • At least 250 ha of river banks restored • At least 250 ha of degraded areas reforested • One community sensitization event organised	• At least 800ha of wetlands restored • At least 450 ha of river banks restored • At least 450 ha of degraded areas reforested • Two community sensitization events organised	• Field visit reports • M&E reports • Interviews with local leaders and community members	• MWE • DWRM • Independent Consultants • VWMZ • Focal District Local Government leaders	
Result	**Indicators**	**Baseline**	**Milestone (after 1.5 years)**	**End of Project Targets**	**Means of Verification**	**Responsible Parties**	**Risks and Assumptions**
Component 4: Supporting knowledge management and information sharing							
Outcome 4.1 Lessons and good practices shared and adopted	• Number of development plans incorporating climate change resilience issues • Good practices and lessons from the project are documented and influence policy		• At least 25% of the district developing plans incorporate CC resilience issues • One policy brief produced by end of the project	• At least 50% of the district developing plans incorporate CC resilience issues • Two policy briefs produced by end of the project	• Project implementation reports • Field visit reports • M&E reports • Interviews with local leaders and community members	• MWE • DWRM • GWPEA • Independent Consultants • VWMZ • Focal District Local Government leaders	
Output 4.1.1 Knowledge management and information sharing system developed	• Number of cross learning events organised • Number of learning events organised • Number of knowledge products e.g. documents on lessons and best practices from project interventions		• One exchange visit for key stakeholders organised • One community learning event organised • 2 brochures, 1 publications (documents) on lessons and best practices from project interventions	• 2 exchange visit for key stakeholders organised • 2 community learning event organised • 4 brochures, 2 publications (documents) on lessons and best practices from project interventions	• Project implementation reports • Field visit reports • M&E reports • Interviews with local leaders and community members	• MWE • DWRM • GWPEA • Independent Consultants • VWMZ • Focal District Local Government leaders	

			• At least 2 climate related case studies /lessons documented, packaged and shared with key stakeholders.	• At least 4 case studies case studies /lessons documented, popularised, packaged and shared with key stakeholders.			

F. Project alignment with the Adaptation Fund Results Framework

Table 15: Alignment with AF results framework

Project Objective(s)[1]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
The overall objective of the project is strengthening the resilience of communities and fragile ecosystems to climate change impacts through promoting appropriate water infrastructure investments and nature-based solutions.	1.1 Proportion of the targeted key grass root stakeholders that are aware of CC impacts and climate resilient initiatives/ measures	**Outcome 3:** Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	**3.1**. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	2,249,000
			3.2. Percentage of targeted population applying appropriate adaptation responses	
	1.2 Proportion of community governance structures with improved capacities	**Outcome 2:** Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	**2.1.2** No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)	
	2.1 Proportion of HHs in targeted areas that are accessing/utilizing appropriate/improved water harvesting/storage facilities	**Outcome 4:** Increased adaptive capacity within relevant development sector services and infrastructure assets	**4.2**. Physical infrastructure improved to withstand climate change and variability-induced stress	
	2.2 Proportion of food secure HHs in targeted project sites	**Outcome 6:** Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	**6.1** Percentage of households and communities having more secure access to livelihood assets	
	3.1 Proportion of HHs in targeted areas that are engaged in alternative IGAs		**6.2**. Percentage of targeted population with sustained climate-resilient alternative	

	3.2 Proportion of HHs with at least 25% increase in aggregated income		livelihoods	
	3.3 Proportion of degraded fragile ecosystems restored/conserved	**Outcome 5**: Increased ecosystem resilience in response to climate change and variability-induced stress	**5**. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**
Outcome1.1 Capacity of key grass root stakeholders in implementing climate resilient development initiatives strengthened	Number of Key grass root stakeholders who have acquired and demonstrate practical knowledge and skills of how well-designed climate resilient development measures can significantly and concretely contribute to economic development, poverty strategies and enhance fragile ecosystems	***Output 2.1***: Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	**2.1.1**. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender)	122,362
	Percentage increase of targeted communities undertaking climate change adaptation actions		**2.1.2** No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)	
Outcome 1.2 Governance of natural resources strengthened	Presence of gender specific measures in the catchment arrangements and integration thereof into climate change initiatives and/or economic development strategies ⟩	***Output 7***: Improved integration of climate resilience strategies into country development plans	**7.2**. No. of targeted development strategies with incorporated climate change priorities enforced	166,834
	Number of rights holders (custodians) engaged in accessing information			
Outcome 2.1 Increased water and food security	Percentage increase of households with suitable daily water & food and fodder consumption for livestock	***Output 8:*** Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	**8.1**. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	603,196
Outcome 3.1 Increased income for improved stakeholder livelihoods	Percentage increase in income for project beneficiaries in targeted project sites	***Output 6:*** Targeted individual and community livelihood strategies strengthened in relation to climate	**6.1.1**.No. and type of adaptation assets (tangible and intangible) created or strengthened in	636,226

		change impacts, including variability	support of individual or community livelihood strategies	
			6.2.1. Type of income sources for households generated under climate change scenario	
Outcome 3.2 Enhanced ecosystem health	By end of project, Sediment load within rivers in the catchment is maintained below average threshold	***Output 5:*** Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	**5.1**. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	286.643
	Proportion of ecosystems restored			
Outcome 4.1 Lessons and good practices shared and adopted	Number of development plans incorporating climate change resilience issues	***Output 3.1:*** Targeted population groups participating in adaptation and risk reduction awareness activities	**3.1.1** No. of news outlets in the local press and media that have covered the topic	238,000
	Good practices and lessons from the project are documented and influence policy	***Output 3.2:*** Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	**3.2.1** No. of technical committees/associations formed to ensure transfer of knowledge	
			3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	

[1] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

G. Detailed budget with IE fee use, and execution explanations

Table 16: The detailed budget

Component/Outcome/Output/Activity	Unit cost	No. of Units	Total Budget ('000 USD)	Explanation
COMPONENT 1: Strengthening capacity of key grass root stakeholders for climate change adaptation			**289,196**	
Outcome 1.1: Capacity of key grass root stakeholders in implementing climate resilient development initiatives strengthened			**122,362**	
***Output 1.1.1:* Climate change Capacity building program for key grass root stakeholders established**			**122,362**	
Activity 1.1.1.1 Undertake capacity needs assessment in relation to climate change for key grass root stakeholders	300	54	**16,315**	This is a study budgeted for 30 man-days @ USD 300/day and associated costs of USD 7,315 for reimbursables for meetings and workshops for inception and validation of study findings.
Activity 1.1.1.2 Induct and empower grass root-duty bearers with knowledge in climate change	272	200	**54,383**	Involves costs of 4 residential workshops full board at USD 68 per individual for 200 participants to cover transport refund for participants, Out of pocket, Facilitators allowances, and Fuel costs for MWE.
Activity 1.1.1.3Training in roles and responsibilities of the duty bearers at the grass-roots	326	100	**32,630**	Involves costs of 4 residential workshops full board at USD 68 per individual for 100 participants to cover transport refund for participants; and USD 5,430 for refreshments and out of pocket for Facilitators and other reimbursable costs.
Activity 1.1.1.4 Facilitate tool kit development for mainstreaming climate interventions in development initiatives	476	40	**19,034**	This includes Consultants fees @USD 300 per day for 40 days and USD 7,034 for reimbursable costs for meetings, refreshments, venue and fuel.
Sub-total			**122,362**	
Outcome 1.2 Governance of natural resources strengthened			**166,834**	
***Output 1.2.1:* Community resource use group leaders orientated in leadership and management**			**166,834**	
Activity 1.2.1.1 Facilitate the mainstreaming of Human Rights Based Approaches in climate change initiatives	326	100	**32,630**	Involves costs of 4 residential workshops full board at USD 68 per individual for 100 participants to cover transport refund for participants; and USD 5,430 for refreshments and out of pocket for Facilitators and other reimbursable costs.

Activity 1.2.1.2 Facilitate communities in advocacy, lobbying and public relations through creation of dialogue platforms and conducting climate change campaigns	400	82	**32,630**	Involves the costs of organising 4 dialogue platforms and 4 campaigns in the catchment @ USD 400 per Facilitator for 5 facilitators per dialogue and campaign; and USD 16,630 for reimbursable costs including hiring the venue, refreshments and out of pocket.
Activity 1.2.1.3 Facilitate resource use negotiations and development of Management plans, MoUs between the communities and duty bearers of the natural resources	100	200	**20,000**	This involves organising and facilitating 4 meetings for resource use negotiation and MoU arrangements targeting 200 people @USD 100 per person.
Activity 1.2.1.4 Develop and strengthen the governance and leadership frameworks (Bye-laws, ordinances, guidelines)	408	200	**81,574**	Facilitation of community meetings, for relevant sub county and district, natural resources members' council committee meetings targeting 200 people. The participants will be selected from district, sub county and community levels.
Sub-Total			**166,834**	-
COMPONENT 2: Promoting establishment of appropriate water harvesting and storage technologies			**603,196**	
Outcome 2.1:Increased water and food security			**603,196**	
Output 2.1.1: **Innovative multi-stakeholder water harvesting and storage technologies adopted**			**603,196**	
Activity 2.1.1.1 Construct/rehabilitate agreed upon low cost and appropriate physical water storage facilities	700	80	**56,000**	This is the cost of constructing 80 large rainwater tank (20,000 litres) that may last for up to 30 years, using Interlocking Stabilized Soil Bricks (ISSB) at a Unit cost of USD 700 per tank.
Activity 2.1.1.2 Facilitate development of simple biophysical water harvesting technologies for Agriculture and livestock production	79,299	4	**317,196**	This is the cost of 4 demonstration sites for biophysical water harvesting technologies established each at an estimate of USD 79,299 for serving a total of 500 households
Activity 2.1.1.3 Facilitate construction of micro-irrigation schemes as learning centres	250	800	**200,000**	This is the cost of 4 low cost trickle irrigation systems (covering about 200acres each) established at an estimated cost of USD 250 per acre in the catchment.
Activity 2.1.1.4Procure appropriate seed and improved pastures for increased Agricultural and livestock production respectively	3	10,000	**30,000**	Purchase of 10,000 kg of appropriate seed and pastures @USD 3 per kilogram.
Sub-total			**603,196**	
COMPONENT 3: Supporting nature-based enterprises for sustainable socio economic development			**922,869**	
Outcome 3.1 Increased income for improved stakeholder livelihoods			**636,226**	
Output 3.1.1 **Nature-based enterprises promoted**			**420,226**	

Activity 3.1.1.1 Establish Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass	10,000	8	**80,000**	This covers cost of establishing 8 different IGAs facilities such as modern bee hives, tree and bamboo nurseries, Mushroom growing, incense sticks, and agri-waste biomass @ USD 20,000 per facility; including support to capacity building/training of targeted stakeholders that are involved in such IGAs.
Activity 3.1.1.2 Procure necessary tools to improve productivity of the nature based enterprises	30,000	5	**150,000**	This is the cost of at least two briquette machines @ USD10,000 each, nursery tools for two nurseries @USD 10,000 each as well as one carton of assorted apiary tools and inputs for mushroom growing also at USD 10,000.
Activity 3.1.1.3 Procure viable high value germplasm	100	502	**50,226**	This is the cost of purchasing an assortment of tree seed, Fruits and mushrooms @USD 100 per Kg for up to 502kgs.
Activity 3.1.1.4 Establish value chains for key and agreed upon nature-based enterprises (including production, processing, handling/storage, packaging/ eco-labelling,	7,500	8	**60,000**	This involves the cost of Value chain analysis for at most 4 key nature based enterprises @USD 7,500 for establishment of each of the 4 processes in each enterprise.
Activity 3.1.1.5 Provide inputs for selected vulnerable communities (women, elderly, youth, PWDs) to scale -up beekeeping , tree and fruit nurseries, mushroom growing, incense sticks production , bamboo and agri-waste biomass production.	4,000	20	**80,000**	This involves the startup capital for scaling up key 20 individual women and/or youth groups with promising and prospective nature-based enterprises @USD 4,000 as a startup revolving fund.
Sub-total			**420,226**	
Output 3.1.2 **Market linkages of products from nature-based enterprises established**			**128,000**	
Activity 3.1.2.1 Facilitate stakeholders to participate in business forums, trade fairs & exhibitions	800	25	**20,000**	This covers the costs of producing exhibition materials, travel costs, hire for exhibition for and upkeep for 25 participants @ USD 800 per participant.
Activity 3.1.2.2 Facilitate business tours and pitches of business plans to the private sector	475	80	**38,000**	This Covers local travel costs and upkeep for 80 key stakeholder representatives@ USD 475 per representative.
Activity 3.1.2.3 Facilitate establishment and operation of a market information systems	1,000	30	**30,000**	This involves the cost of consultancy fees @USD 300 per day for 30 man-days and USD 10,000 for tools/inputs and USD 11,000 for reimbursables.

Activity 3.1.2.4 Develop promotional materials for marketing of products	400	100	**40,000**	This covers the costs of the consultancy for developing Print and social media marketing materials @USD 150 for 30 man-days; and for print materials and USD 250 for media materials for 30 man-days for 2 agreed upon materials. USD 16,000 is the cost of specific inputs for marketing materials.
Sub-total			**128,000**	
***Output* 3.1.3 Entrepreneur skills of stakeholders enhanced**			**88,000**	
Activity 3.1.3.1 Facilitate registration of small-scale businesses	500	40	**20,000**	This covers the registration fees and processing costs of small-scale businesses @USD 500 for 40 key businesses in the catchment
Activity 3.1.3.2 Train entrepreneurs in business management skills	136	316	**43,000**	Involves costs of 2 residential workshops full board at USD 68 per individual for 200 participants to cover transport refund for participants; and USD 15,800 for refreshments and out of pocket for Facilitators and other reimbursable costs.
Activity 3.1.3.3 Develop business plans for translation into functioning businesses	3,400	7	**25,000**	This involves the costs of one residential workshops full board at USD 68 per individual for 50 selected participants to cover transport refund for participants, Out of pocket, Facilitator's allowances, and fuel costs for MWE
Sub-total			**88,000**	
Outcome 3.2 Enhanced ecosystem health			**286,643**	
***Output 3.2.1* Fragile ecosystems conserved**			**286,643**	
Activity 3.2.1.1 Undertake ecosystem restoration activities (wetlands and riverbank restoration, Reforestation etc.)	250	1,041	**260,329**	These are restoration costs estimated at USD 250 per hectare of degraded wetlands, riverbanks and afforestation areas.
Activity .3.2.1.2 Sensitize stakeholders in sustainable utilisation of natural resources (e.g. appreciation and importance of the natural ecosystems)	66	400	**26,314**	This involves the facilitation costs for conducting two sensitization events by end of project targeting 200 stakeholders @USD 66 for each event.
Sub-total			**286,643**	
COMPONENT 4: Supporting knowledge management and information sharing			**238,000**	
Outcome 4.1 Lessons and good practices shared and adopted			**238,000**	
***Output 4.1.1* Knowledge management and information sharing system developed**			**238,000**	
Activity 4.1.1.1 Facilitate experience sharing and cross-learning of innovative climate change adaptation interventions	930	100	**93,000**	This covers travel costs and up keep for up and other reimbursable costs to 50 key stakeholders @USD 930 per year in 2 years.

Activity 4.1.1.2 Organize learning events in climate change adaptation	500	100	**50,000**	This includes facilitation costs for conducting one learning event @USD 500 for 100 participants by end of project.
Activity 4.1.1.3 Document lessons, good practices, climate related case studies and disseminate for replication and up-scaling	900	50	**45,000**	Covers costs for regular field visits and meetings with key 50 stakeholders @ USD 50 per quarter (4) for 2 years targeting to document lessons,
Activity 4.1.1.4 Popularise existing frameworks (i.e. policies, Ordinances and by-laws	100	500	**50,000**	This includes the costs for formatting lay outs in 4 local languages and English @USD 25 and printing in bulk popular versions of the framework; targeting 500 copies.
Sub-total			**238,000**	
Project activities Total Budget (component 1, 2, 3, 4 & M&E)			***2,053,261***	
Project Co-ordination and Management				
Executing Entity fees			181,064.00	
Management and coordination costs			30,799	Facilitation for the Project Coordinator and 2 Field Staff per month for 36 months.
Sub-Total			30,799	
Implementing Entity fees			162,004.00	
Monitoring, Auditing and consulting services			72,000	Facilitation for M&E staff salaries, coordination and management staff, finance, procurement and admin per month.
Equipment and consumables			57,525	One (1) vehicle for M&E Staff operations and office equipment.
Operating costs			35,415	Travel costs, Daily Safari Allowance, printing and communication, office rent per month.
Sub-Total			164,940	
Grand total			**2,249,000.00**	

H. Disbursement schedule with time-bound milestones

Table 17: Disbursement schedule

Component/Outcome/Output/Activity	Total Budget ('000 USD)	Year 1	Year 2	Year 3
COMPONENT 1: Strengthening capacity of key grass root stakeholders for climate change adaptation	**289,196**	**123,328**	**125,081**	**40,787**
Outcome 1.1: Capacity of key grass root stakeholders in implementing climate resilient development initiatives strengthened	**122,362**	**103,328**	**19,034**	**0**
***Output 1.1.1:* Climate change Capacity building program for key grass root stakeholders established**	**122,362**	***103,328***	***19,034***	***0***
Activity 1.1.1.1 Undertake capacity needs assessment in relation to climate change for key grass root stakeholders	**16,315**	16,315		
Activity 1.1.1.2 Induct and empower grass root-duty bearers with knowledge in climate change	**54,383**	54,383		
Activity 1.1.1.3Training in roles and responsibilities of the duty bearers at the grass-roots	**32,630**	32,630		
Activity 1.1.1.4 Facilitate tool kit development for mainstreaming climate interventions in development initiatives	**19,034**		19,034	
Sub-total	**122,362**	**103,328**	**19,034**	**0**
Outcome 1.2 Governance of natural resources strengthened	**166,834**	**20,000**	**106,047**	**40,787**
***Output 1.2.1:* Community resource use group leaders orientated in leadership and management**	**166,834**	**20,000**	**106,047**	**40,787**
Activity 1.2.1.1 Facilitate the mainstreaming of Human Rights Based Approaches in climate change initiatives	**32,630**		32,630	
Activity 1.2.1.2 Facilitate communities in advocacy, lobbying and public relations through creation of dialogue platforms and conducting climate change campaigns	**32,630**		32,630	
Activity 1.2.1.3 Facilitate resource use negotiations and development of Management plans, MoUs between the communities and duty bearers of the natural resources	**20,000**	20,000		
Activity 1.2.1.4 Develop and strengthen the governance and leadership frameworks (Bye-laws, ordinances, guidelines)	**81,574**		40,787	40,787
Sub-Total	**166,834**	**20,000**	**106,047**	**40,787**

COMPONENT 2: Promoting establishment of appropriate water harvesting and storage technologies	**603,196**	**108,000**	**286,598**	**208,598**
Outcome 2.1:Increased water and food security	**603,196**	**108,000**	**286,598**	**208,598**
***Output 2.1.1:* Innovative multi-stakeholder water harvesting and storage technologies adopted**	**603,196**	***108,000***	***286,598***	***208,598***
Activity 2.1.1.1 Construct/rehabilitate agreed upon low cost and appropriate physical water storage facilities	**56,000**	28,000	28,000	
Activity 2.1.1.2 Facilitate development of simple biophysical water harvesting technologies for Agriculture and livestock production	**317,196**		158,598	158,598
Activity 2.1.1.3 Facilitate construction of micro-irrigation schemes as learning centres	**200,000**	50,000	100,000	50,000
Activity 2.1.1.4Procure appropriate seed and improved pastures for increased Agricultural and livestock production respectively	**30,000**	30,000		
Sub-total	**603,196**	**108,000**	**286,598**	**208,598**
COMPONENT 3: Supporting nature-based enterprises for sustainable socio economic development	**922,869**	**314,871**	**496,331**	**111,667**
Outcome 3.1 Increased income for improved stakeholder livelihoods	**636,226**	**158,393**	**366,167**	**111,667**
***Output 3.1.1* Nature-based enterprises promoted**	**420,226**	***130,226***	***240,000***	***50,000***
Activity 3.1.1.1 Establish Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass	**80,000**		80,000	
Activity 3.1.1.2 Procure necessary tools to improve productivity of the nature based enterprises	**150,000**	50,000	50,000	50,000
Activity 3.1.1.3 Procure viable high value germplasm	**50,226**	50,226		
Activity 3.1.1.4 Establish value chains for key and agreed upon nature-based enterprises (including production, processing, handling/storage, packaging/ eco-labelling,	**60,000**	30,000	30,000	
Activity 3.1.1.5 Provide inputs for selected vulnerable communities (women, elderly, youth, PWDs) to scale -up beekeeping, tree and fruit nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass production.	**80,000**		80,000	
Sub-total	**420,226**	**130,226**	**240,000**	**50,000**
***Output 3.1.2* Market linkages of products from nature-based enterprises established**	**128,000**	***6,667***	***79,667***	***41,667***
Activity 3.1.2.1 Facilitate stakeholders to participate in business forums, trade fairs & exhibitions	**20,000**	6,667	6,667	6,667

Activity 3.1.2.2 Facilitate business tours and pitches of business plans to the private sector	**38,000**		38,000	
Activity 3.1.2.3 Facilitate establishment and operation of a market information systems	**30,000**		15,000	15,000
Activity 3.1.2.4 Develop promotional materials for marketing of products	**40,000**		20,000	20,000
Sub-total	**128,000**	**6,667**	**79,667**	**41,667**
***Output* 3.1.3 Entrepreneur skills of stakeholders enhanced**	**88,000**	***21,500***	***46,500***	***20,000***
Activity 3.1.3.1 Facilitate registration of small-scale businesses	**20,000**			20,000
Activity 3.1.3.2 Train entrepreneurs in business management skills	**43,000**	21,500	21,500	
Activity 3.1.3.3 Develop business plans for translation into functioning businesses	**25,000**		25,000	
Sub-total	**88,000**	**21,500**	**46,500**	**20,000**
Outcome 3.2 Enhanced ecosystem health	**286,643**	**156,479**	**130,165**	**0**
***Output 3.2.1* Fragile ecosystems conserved**	**286,643**	***156,479***	***130,165***	***0***
Activity 3.2.1.1 Undertake ecosystem restoration activities (wetlands and riverbank restoration, Reforestation etc.)	**260,329**	130,165	130,165	
Activity .3.2.1.2 Sensitize stakeholders in sustainable utilisation of natural resources (e.g. appreciation and importance of the natural ecosystems)	**26,314**	26,314		
Sub-total	**286,643**	156,479	130,165	0
COMPONENT 4: Supporting knowledge management and information sharing	**238,000**	**53,500**	**31,000**	**153,500**
Outcome 4.1 Lessons and good practices shared and adopted	**238,000**	**53,500**	**31,000**	**153,500**
***Output 4.1.1* Knowledge management and information sharing system developed**	**238,000**	***53,500***	***31,000***	***153,500***
Activity 4.1.1.1 Facilitate experience sharing and cross-learning of innovative climate change adaptation interventions	**93,000**	31,000	31,000	31,000
Activity 4.1.1.2 Organize learning events in climate change adaptation	**50,000**			50,000
Activity 4.1.1.3 Document lessons, good practices, climate related case studies and disseminate for replication and up-scaling	**45,000**	22,500		22,500
Activity 4.1.1.4 Popularise existing frameworks (i.e. policies, Ordinances and by-laws	**50,000**			50,000
Sub-total	**238,000**	**53,500**	**31,000**	**153,500**
Project activities Total Budget (component 1, 2, 3, 4)	***2,053,261***	***599,699***	***939,010***	***514,552***
Executing Entity fees (1.5%)				

Management and coordination costs	30,799	10,266	10,266	10,266
Sub-Total	30,799	**10,266**	**10,266**	**10,266**
Implementing Entity fees (8.5%)				
Monitoring, Auditing and consulting services	72,000	24,000	24,000	24,000
Equipment and consumables	57,525	28,763	28,763	
Operating costs	35,415	11,805	11,805	11,805
Sub-Total	164,940	54,980	54,980	54,980
Grand total	**2,249,000**	**664,946**	**1,004,256**	**579,798**

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IE

A. Record of endorsement on behalf of the government[2]

Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:

*(**Mr Keith Muhakanizi. Permanent Secretary, Ministry of Finance, Planning and Economic Development**)*	Date*: **26 April 2021***

A. Implementing Entity certification

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (……list here…..) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

[6.] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

Name & Signature: ***Mr. Alfred Okot Okidi*** Implementing Entity Coordinator: **Permanent Secretary, Ministry of Water and Environment**	
Date: *26 April 2021*	Tel. and email: **+256784544270;** email:**alfred.okidi64@gmail.com**
Project Contact Person: **Dr Callist Tindimugaya and Mr. James Kaweesi**	
Tel. And Email: **:+256772521413; email: callist_tindimugaya@yahoo.co.uk/jkaweesi11@gmail.com**	

PART V: ANNEXES

Annex 1: Endorsement letter by the NDA

Telephone : 256 41 4707 000
: 256 41 4232 095
Fax : 256 41 4230 163
: 256 41 4343 023
: 256 41 4341 286
Email : finance@finance.go.ug
Website : www.finance.go.ug

In any correspondence on
this subject please quote No. ALD 79/251/02

THE REPUBLIC OF UGANDA

Ministry of Finance, Planning &
Economic Development
Plot 2-12, Apollo Kaggwa Road
P.O. Box 8147
Kampala
Uganda

22nd April 2021

The Adaptation Fund Board
C/o Adaptation Fund Board Secretariat
Email: secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

ENDORSEMENT FOR A PROJECT: ENHANCING RESILIENCE OF COMMUNITIES AND FRAGILE ECOSYSTEMS TO CLIMATE CHANGE IN KATONGA CATCHMENT UGANDA

I have the honor to refer to the above mentioned subject.

In my capacity as the Designated Authority for the Adaptation Fund in Uganda, I confirm that the above project proposal is in accordance with the national and regional climate Adaptation priorities of the Government of Uganda.

Accordingly, I am pleased to endorse the full project proposal for support from the Adaptation Fund. If approved, the project will be implemented by the Ministry of Water and Environment of Uganda in partnership with the Global Water Partnership Eastern Africa (GWP-EA).

Matia Kasaija (M.P)
MINISTER OF FINANCE, PLANNING AND ECONOMIC DEVELOPMENT

Copies to: The Hon. Minister of Water and Environment
Ministry of Water and Environment, Kampala, Uganda

The Permanent Secretary/Secretary to the Treasury,
MFPED, Kampala, Uganda.

The Permanent Secretary, Ministry of Water and Environment.
Kampala, Uganda

The Regional Coordinator, Global Water Partnership, Eastern Africa
Entebbe, Uganda.

Annex 2: Project Approval by the National Environment Management Authority

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)

NEMA House
Plot 17,19 & 21, Jinja Road.
P.O.Box 22255, Kampala, UGANDA.

Tel: 256-414- 251064, 251065, 251068
342758, 342759, 342717
Fax: 256-414-257521 / 232680
E-mail: info@nemaug.org
Website: www.nemaug.org

NEMA/4.5

19th April 2021

The Permanent Secretary
Ministry of Water and Environment
KAMPALA.

RE: CLEARANCE OF ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF) FOR RECOFE PROJECT IN UGA (KATONGA CATCHMENT)

Reference is made to your letter dated 13th April 2021 Ref; ADM/103/167/2019 requesting for the clearance of Environmental and Social Management Framework (ESMF) for the proposed project on "Enhancing resilience of communities and fragile ecosystems to climate change in Katonga catchment Uganda". A critical review of the ESMF has been finalized and we wish to appreciate the initiative to develop the framework that will address the environmental and social management risks associated the proposed project.

The review of the ESMF revealed that; 1) The proposed project components have been found adequate in terms of enhancing resilience of communities and fragile ecosystems to climate change; 2) environmental and social risk identification and description is adequate in terms screening criteria and proposed mitigation measures as indicated in the ESMP. However, the description of the project components is limited in scope and leaves out important details in terms of methodology and technologies to be used and this limits the scope of risk identification and mitigation; there is no evidence of stakeholder consultation which was necessary to enrich the framework and to help validate important aspects of the proposed components.
In view of the above, the Environmental Social Management Framework (ESMF) has been cleared with the following conditions;

1. The Environmental Social Management Framework (ESMF) be further improved to address the gaps identified above;

2. At the level of developing specific project components, ensure detailed description of the project activities in terms of methodology and technological requirements as well as indicating specific physical location sites to facilitate adequate risk identification and mitigation in compliance with environmental laws and regulations;

3. In line with the National Environment Act No.5 of 2019, ensure that all proposed project components undergo proper screening and Environmental and Social Impact Assessment to effectively address environmental and social management risks;

4. Effectively engage with the relevant stakeholders including this Authority during the implementation of the planned projects to ensure proper oversight on environmental and social safeguard issues including establishing an appropriate monitoring framework for the implemented projects.

Dr. Tom O. Okurut
EXECUTIVE DIRECTOR

ANNEX 3: ENVIRONMENTAL AND SOCIO-ECONOMIC BASELINE REPORT

1.0. INTRODUCTION

This baseline assessment report serves to inform decision makers and project developers of likely impacts the project(s) may have on the targeted communities in regard to their adaptability and food security. The catchment traverses part of the dry Ugandan cattle corridor[28], which is affected with a wide range of climate change effects. It is amongst the most climate-vulnerable regions in Uganda. Climate change effects in the Katonga catchment are expected to worsen the impacts of existing threats to the catchment's inhabitants and ecosystems and resultant effects include, more extreme and frequent periods of intense rainfall, erratic on-set and cessation of the rainy season, as well as more frequent episodes of drought. The increase in land use for agricultural practices and the widespread environmental changes are impacting heavily on the people who rely on ecosystem goods and services for their livelihoods, and the ecosystems in the catchment. The major issues related to environmental changes in the catchment include among others:

- Deforestation and forest degradation; excessive loss of forest cover evidenced by reduction in spatial extent of forested areas from 63% (8,739km^2) in 1999 to 5% (734.3km2) in 2017, of the total land area in the catchment.
- Wetland reclamation due to excessive drainage of wetlands, riverbanks and lakeshores are also degraded in the catchment through agriculture, mechanized industrial scale sand mining, growing of eucalyptus, and brick making among others.
- Soil erosion especially in hilly parts of the catchment such as Kalungu, Lyantonde, Mubende, etc., due to lack of soil and water management infrastructure.
- Severe water stress characterized by domestic and agricultural water demand deficit. Water stress underlined by prolonged droughts that lead to drying up of surface and ground water sources such as boreholes, valley tanks, valley dams, streams, etc., are leaving people and livestock desperate.
- Prolonged droughts also characterize the catchment as part of the cattle-corridor. Droughts are reportedly becoming severe due to climatic change effects, excessive deforestation, and forest degradation. They are associated with severe water scarcity, reduced pastures and overgrazing, school dropouts, wetland encroachment and wildfires.
- Food insecurity resulting from poor agricultural harvests leading to tremendous decline in yields of staple foods, or even total crop failure. The major drivers of food insecurity are animal diseases and crop pests, soil infertility, prolonged droughts, and human diseases.

Study Rationale

In lieu of amelioration of climate change impacts and issues in Katonga catchment as highlighted, the Ministry of Water and Environment (MWE) in partnership with Global Water Partnership Eastern Africa (GWPEA) are evolving a national project entitled "*Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda*". The Adaptation Fund Board approved the project concept note and consequently, the need for detailed preparatory studies to inform the designing and development of the full project document. Ministry of Water and Environment therefore commissioned preparatory studies including the **Environment and socio-economic assessment** which is here presented (This Report).

2.0. METHODS

2.1 STUDY AREA

Katonga catchment is located in Victoria Water Management Zone, one of the four zones in Uganda. River Katonga drains into Lake Victoria, and the river's basin (Figure 1) is what defines the catchment. Minimum elevation within the catchment is 1108m a.s.l; while the maximum is about 1581m a.s.l. The catchment is

[28] Cattle Corridor stretches from south-western to north-eastern Uganda, highly affected by climate change impacts e.g. droughts and is constituted by rangelands which form 44% of Uganda

generally flat, allowing satellite wetlands (permanently flooded papyrus and grass swamps along the River Katonga) to dominate, with about 2,478km^2 forming the Katonga wetland system. The main lake is L. Wamala.

In some parts (e.g. Kyegegwa District), the landscape is generally rocky with various rocky outcrops and steep slopes. Such a landscape is inherently sensitive to any changes in climate. It is susceptible to water erosion, especially after the vegetation cover has been disturbed, usually in the up-slopes and mid-slopes. On the other hand, the topography makes the down-slope more sensitive to flooding and silt deposition.

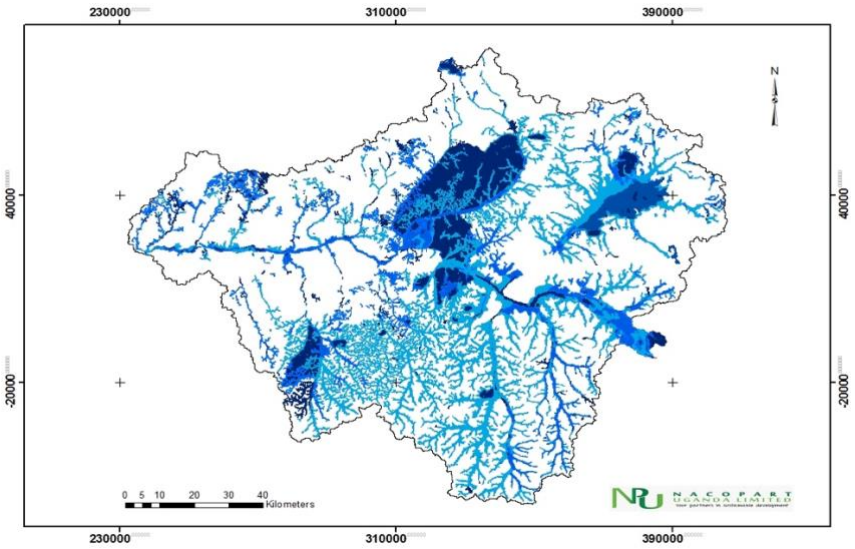


Figure 1. Katonga catchment drainage basin (Source: Nacopart Uganda Limited)

2.1.1 Flora and Fauna

River Katonga and its basin traverse different remnants of Langdale-Brown (1964) vegetation types. The northern part is mostly Dry *Combretum* savannah, whereas the southern part is mostly Forest/Savannah mosaic. On lower elevations are Papyrus/*Miscanthidium* swamps, and *Sorghastrum*/ *Echinochloa* grasslands. These are now isolated vegetation types in farmlands highly degraded, or occurring in smaller fairly intact patches. The key land cover types include rainfed farmland, isolated central and local forest reserves, a wildlife reserve, wetlands, forest plantations and irrigated farmland. The Map was generated based on spatially aggregated multipurpose landcover database for Uganda AFRICOVER (2015).

The Katonga catchment is known to have a viable Sitatunga *(Tragelaphus spekei)* population inhabiting the Katonga Wetland System. The IUCN Global Red List categorizes *T. spekei* as a species of Least Concern, but at National Level, it is categorized as a vulnerable species as a result of habitat loss (wetland reclamation), hunting and unsustainable harvesting of the plant species that constitute its food (MTWA, 2018[29]). The species has low resilience to these threats and this partly explains the its declining populations in Uganda.

Within the catchment is the Katonga Wildlife Reserve that habours high population of waterbucks, Hippos, Elephant, buffalo, bushbuck, reedbuck and birds. In 2015, about 60 Impalas and 5 Zebras were successfully translocated to the reserve in order to restock and boost animal populations for tourism. The population of impalas now stands at 300 individuals. The current bird checklist is over 150 including species specific to wetlands, savannah and forests. Other mammals include Black and White Colobus Monkey, the River Otter, and Olive Baboon, Uganda Kob, Leopard, and duiker and chevrotain. The Katonga Wildlife reserve is in addition, home to various reptiles, amphibians and butterflies (UWA, 2019).

2.1.2 Soils

Following the FAO soil classification, the predominant soil type in the catchment is Acric Ferralsols, followed by Luvisols, Gleyic Arenosols, Planosols and Dystric Regosols. The geology is comprised of Toro and Basement complex granites, quartz mica schists, Toro arkose, Toro gneisses and granites. Other parent rock material includes Toro quartzites, sandstones, schists and phyllites; Phyllites and quartz and schists. Research indicates declining soil fertility due to nutrient mining and little or no replenishment of nutrients.

[29] Ministry of Tourism, Wildlife and Antiquities, (2018). Red List of threatened species in Uganda.

2.2 Climate

Much as it falls short of being categorized as semi-arid, Katonga Catchment which falls within Uganda's cattle corridor exhibits semi-arid characteristics. These include: i) high rainfall variability; ii) periodic late onset rains/droughts; and iii) historical reliance on mobile pastoralism as coping strategy to resource variability.

2.2.1 Rainfall

The mean annual rainfall based on data measured in the period 1950-2004 ranges between 800mm-1300mm (MWE, 2018). Monthly rainfall patterns in the Katonga catchment portray two wet seasons that occur from March to May, and September to December. Maximum rainfall is recorded during April and October-November, while the driest months are observed during July-August and January-February. Based on CHIRPS data, there has been an unpredictable annual rainfall trend in the catchment in past 20 years. The rainfall patterns are variable both in time and spatial distribution. Heavy precipitation events are anticipated to increase, which would escalate the risk of disasters such as floods**.** The population thus lives in uncertain weather circumstances, which sometimes cause extremities leading to economic losses of crops and animals, depriving communities of a better livelihood. The special distribution of rainfall is reported in ICPAC[30], 2015.

Most climate models project increasing rainfall over East Africa (EA) in the coming decades, however, the long rainy season, March to May, has been experiencing devastating droughts whereas the October to December (OND) season's rainfall is increasing (Rowell, et. al, 2015).

2.2.2 Temperature

Temperature data from the USGS FEWSnet data portal for the VWMZ, projects a substantial increase in the mean annual minimum temperature by 1.3–4.5 ºC, and warming in the colder season (June to September) by 1.7–2.9 ºC under RCP 4.5 and 4.9 ◦C under RCP 8.5 by 2085. The mean annual maximum temperature is projected to increase throughout the Lake Victoria Basin (LVB) by about 1.0–1.50 C by 2030, and 1.2–1.80 C by year 2050, while the mean annual minimum temperature is projected to increase over the basin by 1.2–1.90 C by the 2030s, and 1.5 –2.40 C by year 2050 (Olaka *et al*. 2019[31]). Specifically, Katonga catchment temperature data (MODIS) retrieved for the period 2000-2020 conforms to this warming trend. Within this period, the variance in mean annual temperatures was unpredictable. Due to the warming trend, there is a potential for an increase in the frequency of extreme events (e.g. heavy rainstorms, flooding, droughts, etc.).

2.3 Demography

The population of the Katonga catchment is estimated at 3,020,638, of which 1,524,887 (50.5%) are female, and 1,495,751 (49.5%) males (UBOS, 2014). Whilst the total number of households in the catchment are estimated to be 678,076. The highest population growth (946,483) is in areas of Mubende, while the lowest population growth (26,159) is estimated for areas within Kyenjojo District. The trend suggests that the population could even double by 2040 with more than half of the population below the age of 14 years. The population estimates put in consideration that Sembabule and Bukomansimbi districts are the only ones that wholly lie within the catchment. Gomba district follows with about 90% of its area within the catchment, while Kyenjojo has the least area within the catchment.

2.4. Livelihoods

The Katonga catchment communities are dependent on rain-fed subsistence farming, livestock rearing, fishing and to a lesser extent Tourism for their livelihoods. Crops grown in the catchment include Maize, Bananas, Beans and coffee. Other economic activities include bee keeping (apiary management), mushroom growing, physical settlements, woodlots and quarrying/mining activities (i.e. sand, stones and phosphate/vermiculite). Katonga Wildlife Reserve and Bigo Byamugenyi stand out as the key tourist attraction, in addition to the Sitatunga populations that are much easily seen in the Katonga wetland system than in any other wetland ecosystems in Uganda.

2.5 Methods

A Rapid Evidence Assessment approach was used using a combination of ways that included Field visits, key informant interviews, Field visits, Focus Group Discussions and targeted literature searches.

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[30] IGAD Climate Prediction and Applications Centre

[31] Olaka A.L., Ogutu O.J.; Said Y.M., and Oludhe C., (2019). Projected Climatic and Hydrologic Changes to Lake Victoria Basin Rivers under Three RCP Emission Scenarios for 2015–2100 and Impacts on the Water Sector. *Water 2019, 11, 1449; doi:10.3390/w11071449*

2.5.1 Field Visit

A field-scoping mission was conducted to visibly assess and validate the status quo in the Katonga catchment, in regard to the condition and extent of the degradation as outlined in the catchment management plan, hence vulnerability of both the communities and ecosystems to climate change impacts, and current active players operating in the identified country. Key informant interviews targeting technical staff were held at district and sub county levels. The team traversed the catchment from the Upper sub catchment, through the middle, to lower sub catchments, interacting with technical staff and opinion leaders, in addition to direct observations for capturing land use and land cover changes.

2.5.2 Consultations

Four representative field level consultative meetings were held, one in each of four selected degraded hot spot districts in the Katonga catchment as defined in the Katonga Catchment Management Plan (Table 1). The districts were selected using stratified random sampling method, one representative district from each of the three sub catchments of Upper sub-catchment, Mid–sub-catchment, Lower sub-catchment, and lastly one district from the Eastern side of the catchment. The sub counties in addition, had minimally benefitted from any environment related projects to increase communities' and ecosystems' resilience to climate change impacts.

Table 1: Degradation hot spot sub-catchments, districts and Sub-Counties.

No.	Sub-Catchment	Most Degraded District	Focal Sub-Counties
1	Upper Katonga	Kyegegwa	Ruyonza Sub-county
2	Mid-Katonga	Sembabule	Lwemiyaga Sub-County
3	Kakinga	Lyantonde	Mpumudde Sub-County
4	Nabajjuzi	Kalungu	Bwesa Sub County

To ensure effective participation during the consultative meetings, the participants were assigned tasks and worked in small groups, and letter convened in plenary to share their assessment results

Figure 9: Community group work session in Kyengegwa during community consultations

Figure 10: Plenary session in Sembabule district during the consultations

2.5.3 Catchment and National Level Meetings

One consultative meeting at regional/catchment level, and another at national level helped in validating and internalizing the bigger picture for the catchment in regards to the baselines. Throughout the consultative meetings, relevant references were sought for literature review and these included district development plan

documents, district statistical abstracts, project reports. The assessments were conducted in collaboration with the Victoria Water Management Zone team.

2.5.4 Literature Review

This was to help locate major formative works in the field related to the planned project actions in the catchment. It included desk reviews of project documents, policies and institutions in place, related to vulnerability to climate effects, water resources, gender and climate change. Relevant documents included the existing Katonga catchment management plan, District Development Plans, District statistical abstracts, EURECCCA project reports, Adaptation fund reports, relevant Ministry documents.

FINDINGS

3.1 STAKEHOLDERS MAPPING

A stakeholder mapping was carried out for probable collaboration/synergies and avoidance of duplication or re-inventing the wheel in carrying out project processes and activities. This in addition, was in the spirit of leveraging resources, selection of entry points/appropriate sites for effective project developments, and not least, in enhancing integration or cooperation to deliver combined greater project impacts. From the regional level, seven natural resources/climate related projects are implemented in the catchment (Table 2). In addition to these, there are other government sustainable development program initiates geared towards alleviating poverty in collaboration with civil society organizations, hence contributing to the resilience of targeted communities to climate change effects (Appendix 1). A good number of these projects are in their first year of implementation such as the IFPA-CD and GCCCa+ projects, while some have been in existence since 2013 to date, such as the Water for people project. This sets a good and strong base to build on and effectively plan and implement new project actions to enhance resilience of both communities and ecosystems. Worthy to take note are the strong cultural and religious institutions that can be influential in promoting project actions. The Buganda Kingdom as a cultural institution is highly influential, and faith-based organizations such as Bisaka in Kamwenge be noted.

Table 2: Key Stakeholders' mapping

INSTITUTION	PROJECT	CATCHMENT PROJECT SITES		Remarks
		District(s)	*Sub county*	
Ministry of Water and Environment, National Forest Authority (NFA) and Uganda Wildlife Authority (UWA)	UGANDA Investing in Forests and Protected Areas for Climate Smart Development (IFPA-CD) Project	Kamwenge and Kyegegwa districts		Financed by WB, GCF, and GoU. Project is at inception phase and supports development and implementation of a resilient landscapes program in the Albert Water Management Zone and West Nile
Minsitry of Water and Environment (MWE) – Water for Production department	*Improving livelihoods through water for production*: Small scale irrigation systems	Kyegegwa	Rwentuha	15 acres
		Gomba	Kabulasoke	15 acres
			Kyegonza	10 acres
		Butambala	Bulo	10 acres
			Gombe	6 acres
		Kalungu	Kyamulibwa	15 acres
		Masaka	Mukungwe	6 acres
		Mpigi	Mpigi TC	20 acres
		Kassanda	Nalutuntu	18 acres
		Mityana	Manyi	10 acres
		Kiruhura	Kashongi	20 acres
		Lyantonde	Lyatonde rural	5 acreas
		Lwengo	Kisekka	10 acres
			Lwengo	10 acres
	Improving livelihoods through water for production: Valley tanks, earth dams and bulk water transfer schemes	Bukomansimbi		16 facilities
		Gomba		26 facilities
		Lyatonde		87 facilities
		Mityana		1 facility
		Sembabule		91 facilities
		Kiruhura		357 facilities
		Kyegegwa		2 facilities
		Mubende		12 facilities
Mubende district farmers association	Global Climate Change Alliance Plus (GCCA+)-	Mubende	Kitenga	Project is at inception phase and focuses on empowering rural

INSTITUTION	PROJECT	CATCHMENT PROJECT SITES		Remarks
		District(s)	*Sub county*	
Sembabule district farmers association and LWF	Uganda: Agricultural Adaptation to Climate Change project Implementing partners: Ministry of Water and Environment; Ministry of Agriculture Animal Industry and Fisheries;	Sembabule	Lugusuulu, Mateete and Lwebitakuli	communities in most vulnerable districts, to identify and adapt to climate change, through interventions that will also promote food security, income generation and sustainability of livelihoods.
Kalungu district farmers association		Kalungu	Lwabenge	
Gomba district farmers association		Gomba	Maddu, Kabulosoke	
Lyatonde district Farmers Association		Lyatonde	Mpumudde	
			Kaliro	
MWE – Rural Water Supply and Sanitation Department (RWSSD) under the Directorate of Water Development	Lwemiyaga Rural Growth Centres (RGC) Piped Water Supply and Sanitation Scheme	Sembabule	Lwemiyaga	Water supply system worthy UGX 2,161,586,008
Water for people Uganda	Institutional support and restoration of the wetlands	Kamwenge	Biguli	Wetlands restoration as part of an IWRM approach to ensuring sustainable supply of water resources – about 39.4 ha restored

3.2 COMMUNITY LIVELIHOODS

3.2.1 Socio-economic activities

A snap short at Livelihoods context in the Katonga catchment rangeland as presented in the four districts visited in the assessment, portrays high dependency on natural resources for livelihood needs (Tables 3-4). The resources serve as basic security against which communities base to improve their livelihood (Appendix 2). Their wellbeing is thus dependent on the capacity to use land, and access to the natural resources. Community livelihoods resilience and hence improvement, is hinged to building on these basic sources of livelihoods for the near future, pending extension of infrastructure and critical services to the area. True to the fact that economic activities/projects in the different districts are vulnerable to climate change effects, households within their means, attempt to deal with the challenges and have suggested coping strategies to enhance resilience (Table 3). There are a multitude of environmental and climate change challenges embraced by these communities that are affecting their livelihoods and therefore their vulnerability to climate change impacts such as unreliable rainfall patterns; Floods that destroy crops; Wild animals destroying people's crops/property; Pests and diseases; Strong winds as a result of extensive cutting down of trees in the catchment; wetlands encroachment; Dirty water; Water contamination (washing cars and motorcycles in the wetland); Dumping waste in wetlands; Drought; Infertile soils; Scarcity of water and the Poor/bad roads. Problem solution matrices were generated by participants in this study from respective districts to visually compare possible solutions as one way of informing selection of best course of appropriate actions that could easily be adopted in the catchment (Table 4).

Table 3: Economic activities in the catchment and coping strategies to enhance resilience

ACTIVITIES VULNERABLE TO CLIMATE HAZARDS	LOCAL COPING STRATEGIES
Ssembabule District	
Farming projects affected by prolonged drought leading to low yields and thus food insecurity.	Irrigation system Quick maturing crop varieties Sustainable land management
Animal rearing; scarcity of water & grass for animals	Preserving grass (Hay) for animals; Provision of alternative clean water sources
Roads: Floods destroy marrum roads	Raising of roads in flood prone areas (Swamps)
Lyatonde District	
-Valley dams dry up during dry seasons	Introducing pumped water systems Sustainable land management
Agricultural projects are affected by prolonged droughts	Irrigation/more valley dams; Improved farming methods; Introduction of quick maturing crops
Loss of livestock	Build more valley dams Sensitize farmers on improved farming methods including production of hay
Operation wealth creation	Identifying suitable technologies (enterprise development)
Kyegegwa District	
NAADS: Distributing seedling during dry seasons	Timely distribution of plating materials
DRDIP, Plants trees in the community and on the roadside is	Timely distribution of planting materials

ACTIVITIES VULNERABLE TO CLIMATE HAZARDS	LOCAL COPING STRATEGIES
affected by drought	Watering of trees
Domestic water supplies	Establishment of piped water systems (Ministry of water and environment piped water in progress)
OXFAM, planting trees like mangoes, orange, avocado among others in schools	Environmental greening – timely distribution of planting materials
Kalungu District	
Flooding and drought affect gardens of maize, beans, banana, coffee, cassava potatoes	Irrigation Sustainable land management Water storage / **No** to wetlands reclamations Quick maturing crops
Pests and diseases affecting crops	Early planting Control of Pests and Diseases Introduction of strong and resistant varieties of crops/coffee plants

Table 4: Problem and Solution Matrix

ISSUES/PROBLEMS	SUGGESTED SOLUTIONS	RESPONSIBLE PERSONS
Drought	Planting trees; Quick maturing seed/crops; Water dams; Boreholes Climate smart agriculture; irrigation	General public, Ministry of Agriculture, Animal Industries and Fisheries (MAAIF); Ministry of Water and Environment (MWE); District Local Government (DLG)
Changes in rainfall patterns	People should stop cultivating in wetlands Planting trees	National Environment Management Authority (; Ministry of Water and Environment (MWE)
Diseases & pests	Conservation of the Environmental; Control and management of Pests& diseases; Good quality pesticides	General public, MAAIF; DLG; National Drug Authority
Floods	Sustainable Land Management; sensitization of communities; Stopping wetland reclamation/cultivation	General public, MWE; MAAIF; DLG
Infertile soils	Sustainable land mgt practices	General public, MAAIF; MWE
Water scarcity	Water harvesting; soil and water conservation techniques; drilling boreholes; building dams	General public, private sector, government
Cutting down trees	Ordinances & byelaws; planting trees	General public, DLG, MWE
Poor/bad roads	Construction & maintenance of roads	DLG, MWE
Vermin	Vermin control methods	DLG; Uganda Wildlife Authority
Dumping waste in wetlands	Sensitization of communities on waste management; Formerly designate safe garbage dumping sites	Local leaders; Communities; DLG; Ministry of Lands, Housing, & Urban Development; MWE.

It was clearly outstanding that communities who are majorly dependent on the natural resources for livelihoods, were highly vulnerable to the effects of climate change. Climate change is affecting food security, health, water security, and household incomes. Much as there are gaps in Uganda's poverty data with no official publication of district and parish-level poverty statistics since 2014, recent years have seen poverty headcounts increase in western Uganda (within which the catchment falls) since 2014. The National poverty line set in 1990 ranges between US$0.88-1.04 depending on the region. This is believed to give a much more positive view of poverty trends than the World Bank's US%1,90 per person per day extreme poverty line updated in 2015. Most of the Katonga catchment falls in central region where UBOS 2019 poverty estimate is 24.3 percent of the regions population, and adjacent Tooro within which two of the Katonga catchment districts fall is about 20.5% of the region's population (Development Initiatives, 2020[32]). Particularly Kalungu district estimates that for every 1000 people, 198 of them are poor[33]. It is hence estimated that about 20% of the Katonga catchment population lives below the poverty line. The negative shocks, such as burdens of Covid-19 may worsen this status.

[32] Development Initiatives, 2020. Poverty in Uganda: National and regional data and trends fact sheet.
[33] Kalungu District Local Government, (2015). District development plan 2015/2016-2019/2020

3.2.2 Water, Sanitation and Hygiene

This is computed as percentage of people within 1 km (rural) and 0.2km (urban) of an improved water source. Access to water in 2020 was 65% (66.5% in rural areas, and 63.9% in urban areas), Table 5. Water access and sanitation are critical determinants of the health status of households as they are valuable for hygiene.

Table 5: People with access to safe water supply in Katonga catchment

	Access to water in Year 2017 [MWE Water Atlas 2017]					**Access to water in 2020 [MWE Water & Environment Sector Performance Report 2020]**		
District	Total Population (#)[34]	Population served (#)	Rural (%)	Urban (%)	Total (%)	Rural (%)	Urban (%)	Total (%)
Bukomansimbi	153,869	132,260	85	95	86	87	92	83
Butambala	103,907	98,712	95	95	95	95	95	95
Gomba	166,940	134,168	79	95	80	86	95	87
Kalungu	190,013	173,773	91	95	91	92	95	93
Kamwenge	467,658	351,768	74	95	75	73	95	74
Kiboga	159,394	115,946	80	49	73	85	46	76
Kiruhura	362,063	150,964	42	43	42	47	53	48
Kyegegwa	336,774	120,893	34	56	36	31	45	32
Kyenjojo	470,101	354,111	72	91	75	64	91	69
Lwengo	283,711	204,439	76	44	72	75	46	72
Lyantonde	102,499	53,133	47	82	52	43	74	48
Masaka	314,858	221,374	78	57	70	78	54	69
Mityana	348,258	271,910	75	95	78	79	70	77
Mpigi	268,712	214,595	84	61	80	83	59	78
Mubende	767,201	229,548	32	0	30	38	0	34
Rakai	547,918	250,428	45	55	46	36	36	36
Sembabule	273,060	103,207	37	44	38	38	41	38
Overall	**5,316,936**	**3,181,229**	**66.2**	**67.8**	**65.8**	**66.5**	**63.9**	**65.2**

3.2.3 Households source of energy for cooking

Most households (80.4%) use wood fuel for cooking (national value of 71.2% of rural households), and above 31% in the urban areas (Table 6). At national level, 22.9% of households in Uganda use charcoal for cooking. The high dependence on wood fuel for cooking contributes to environmental degradation, and negatively affects the health of households, most especially women through reduced exposure to smoke from wood fuels.

Table 6: Katonga catchment household source of energy for cooking.

District	**Electricity (%)**	**Gas (%)**	**Paraffin stove (%)**	**Charcoal (%)**	**Firewood (%)**	**Others (%)**	**Electricity (%)**	**Total (%)**
Bukomansimbi	1.5	0.2	1.0	9.1	86.5	1.1	1.5	100
Butambala	2.0	0.2	1.4	20.6	74.9	0.7	2.0	100
Gomba	1.8	0.3	0.8	11.7	84.4	0.8	1.8	100
Kalungu	1.8	0.3	1.5	16.6	78.3	1.1	1.8	100
Kamwenge	1.4	0.4	0.5	7.2	89.0	0.5	1.4	100
Kiboga	1.2	0.3	0.9	23.7	72.6	1.1	1.2	100
Kiruhura	1.3	0.3	0.4	9.3	87.8	0.5	1.3	100
Kyegegwa	1.3	0.5	0.3	8.4	88.8	0.5	1.3	100
Kyenjojo	1.4	0.5	0.6	6.5	90.2	0.6	1.4	100
Lwengo	1.7	0.3	1.0	16.7	79.3	0.7	1.7	100
Lyantonde	1.4	0.6	1.6	23.9	70.9	0.8	1.4	100
Masaka	3.9	0.7	2.9	35.9	54.9	1.2	3.9	100
Mityana	1.8	0.5	0.9	23.9	71.6	0.9	1.8	100
Mpigi	1.7	0.4	1.0	24.2	70.1	1.1	1.7	100
Mubende	1.8	0.4	0.6	16.6	79.8	0.6	1.8	100
Rakai	1.5	0.4	1.1	13.5	82.2	0.8	1.5	100
Sembabule	1.5	0.3	0.9	12.3	81.6	0.6	1.5	100
Overall	**1.7**	**0.4**	**0.9**	**15.3**	**80.4**	**0.7**	**1.7**	**100**

3.3 STATE OF NATURAL RESOURCES

3.3.1 Forest resources

[34] The population statistics are from UBOS Census 2014 and have been projected to April 2017 based on the district population growth rates published in the Census 2014.

With an increasing human population of 40+ million in Uganda, there is increasing pressure on finite natural resources that is pausing management challenges. Loss of vegetative cover has emanated majorly from converting forested areas to what is perceived as more gainful farmlands, and the demand for fuel wood. The forest cover in the country has thus declined from 23.8% (4.8 million ha) in 1990 to about 9.9 % (2 million ha) in 2017 (NEMA, 2019[35]). Forests on private land are most affected as owners gain more benefits in a short run from converting these areas to farmlands than retaining them as forests. Uganda is currently estimated to be losing about 200,000 hectares of forest per year (NBS[36] estimates for 2010-2015). The drivers of deforestation in the cattle corridor and savannah woodlands outside Central Forest Reserves (CFR) include opening up land for agriculture, ranching, settlements and charcoal making. The cattle corridor is most affected as a major area of charcoal production, supplying all urban centers as well as the neighboring countries of Kenya, Rwanda, and South Sudan. This scenario is no different from the situation depicted in the Katonga catchment (Figure 12). For the period between 2005 and 2010, at least 70,065ha were deforested and 29,132ha of forests were degraded (MWE, 2015[37]). The well-established refugee settlements in Kyegegwa and Kamwenge districts in the catchment aggravates the situation within their areas of establishment. The period of 2005-2010 conforms to the timeline and trends analysis by grassroot level stakeholders that indicate by 2010, population with in the catchment had increased, more farms were opened up, and deforestation, cutting down trees was at the onset (Appendix IV).

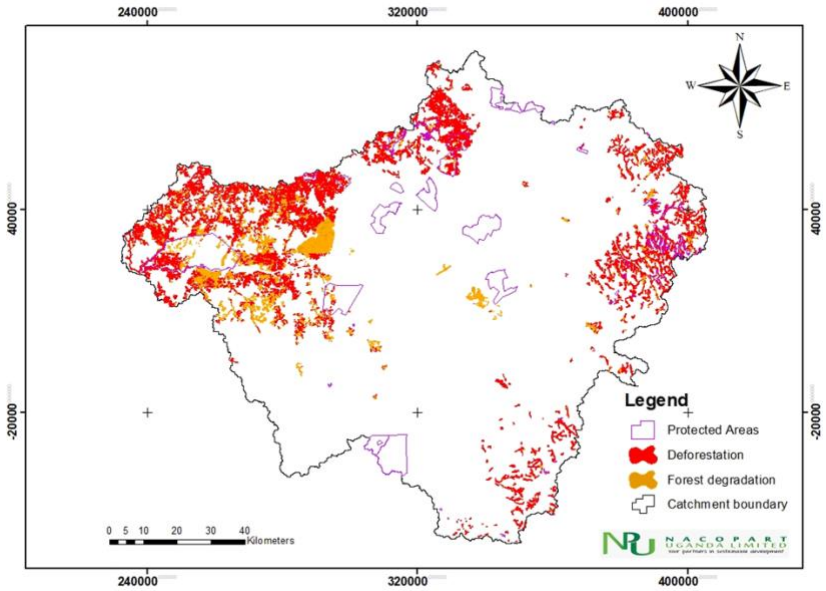

Figure 12: Katonga catchment deforestation and forest degradation map (2005-2010)

3.3.2 Land management

Soil degradation is a major threat to food security in Uganda and is responsible for siltation and pollution of lakes, rivers and open water sources, which has affected livelihoods. It is defined by reduction or exhaustion of soil nutrients and degradation of soil physical properties. Main stimulants of this soil degradation are nutrient depletion and soil erosion, which are on the raise as farmers are not using external sources of nutrients (Okoboi and Barungi 2012[38]) and are not adopting recommended soil and water management practices. Poor land husbandry practices such as over grazing in the cattle corridor, results in bare land, exposing it to the elements causing erosion (Karamage et al. 2017). Soil erosion is extreme in the cattle corridor in the country, with predicted erosion rates of over 10t ha-1yr-1. The recent population explosion seems to out-match farmers' ability to find arable land, with the consequence that continuous tillage is the norm (see Umezaki et al. 2000). Most of the Katonga catchment is highly degraded (62%), and only 1% is low degraded (Figure 13 & 14).

[35] National Environment Management Authority – NEMA (2019). National State of The Environment Report 2018-2019: "Managing the Environment for Climate Resilient Livelihoods and Sustainable Economic Development"
[36] National Biomass Study
[37] Ministry of Water and Environment – MWE, (2015). Restoration Opportunities Assessment Report for Uganda.
[38] Okoboi, Godfrey & Barungi, Mildred, (2012). "Constraints to Fertiliser Use in Uganda: Insights from Uganda Census of Agriculture 2008/9," Research Series 150240, Economic Policy Research Centre (EPRC)

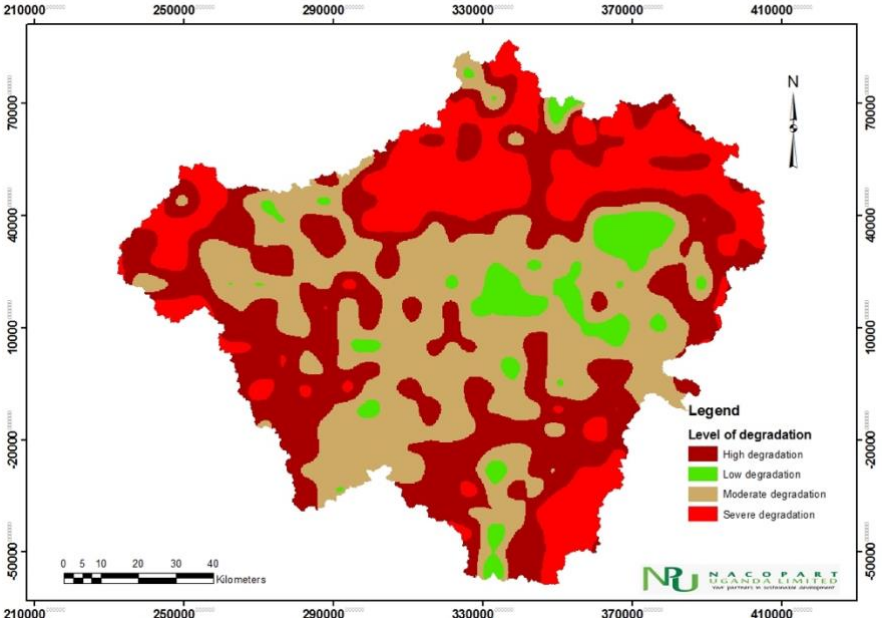

Figure 13: Map of Katonga catchment showing levels of degradation

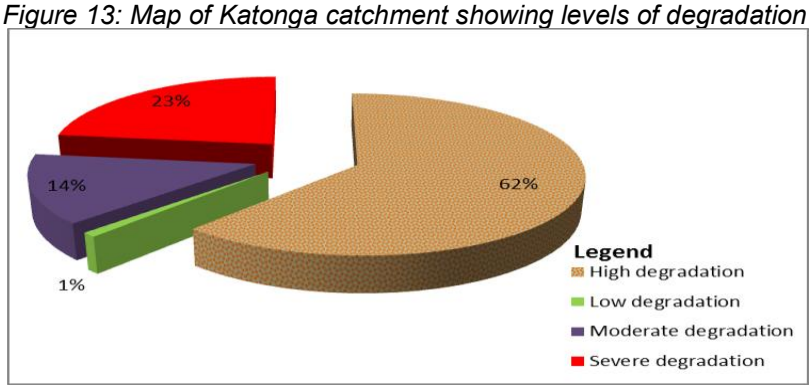

Figure 14: Proportion of degraded areas in Katonga catchment

3.3.3 Wetlands resources

Wetlands are important ecosystems as they provide regulatory and provisioning services to communities in the catchment. They are a source for construction materials, fishing and domestic water supply among other functions. Wetlands are also considered to have a back-and-forth relationship with groundwater, thus can be a source of replenishment for a groundwater aquifer and need to be conserved, most especially in cattle corridor areas with characteristic semi-arid environments.

Despite their importance, the extent and rate of wetland degradation (53.8%) in the Katonga catchment is high. The wetlands are degraded through human activities, mainly crop agriculture, brick making, sand mining, and water draining tree species such as eucalyptus that were planted and are thriving in the fragile ecosystems. Water draining trenches and alien plant species, mainly crops and trees introduced in the sensitive ecosystems are reducing the wetlands' ability to perform their natural functions of filtration, flood control, aquifer replenishment, and providing habitat to wetland adapted flora and fauna.

Wetland restoration to ensure sustainable supply of water resources has been piloted by '*water for people Uganda*', upstream in Biguli Sub County, Kamwenge district, in the Katonga Catchment, and lessons from this initiative are invaluable. Ground water monitoring project findings from 7 CTD divers installed in the sub county indicate that most of the drilled wells in Biguli Sub County consist of unconfined aquifer which highly depends on precipitation for recharge (Kanweri, Okettayot, and Nimanya, 2019). Sustaining recharge throughout the year therefore requires a system (such as a restored wetland), that holds the surface runoff that flows during rainy season to ensure constant recharge during the rainfall off seasons.

The degradations of the environment in Katonga catchment is failing ecosystems to function as they should, therefore rendering them to be vulnerable to climate change impacts. This makes the communities even more vulnerable as they are heavily dependent on the naturals resources as source of their livelihoods.

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ANNEX 4: VULNERABILITY ASSESSMENT REPORT

1.0. INTRODUCTION

1.1. Context of the assessment

Natural ecosystems provide crucial ecosystem services that support livelihoods and the socio-economic development. Due to insufficient protection and management, their role in mitigating Climate Change, supporting climate resilience and safeguarding ecosystem services (e.g. provision of water, food and energy) is currently threatened. The past and current population and economic growth across communities in the Katonga Catchment is exerting increasing pressure on the natural resources. Moreover, there is a concern that climate shocks may increase the pressure on governments to degazette parts of PAs such as the Katonga Wildlife Reserve in order to avoid food insecurity and displacement of people.

The proposed project titled *"Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda (RECOFE)"* is designed to reverse this trend. The aim is: "To strengthen the resilience of communities and fragile ecosystems to climate change impacts by promoting appropriate water infrastructure investments and nature- based solutions". The objectives are:

- To strengthen the capacity of key grass root stakeholders for climate change adaptation
- To promote appropriate water storage technologies for increased water and food security
- To support establishment of nature-based enterprises for improved community livelihoods
- To support knowledge management and information sharing

The anticipated outputs of the project are:

- Capacity of grass root stakeholders in implementing climate resilient development initiatives strengthened
- Governance of natural resources strengthened
- Increased water and food security
- Increased income for improved stakeholder livelihoods
- Enhanced ecosystem health
- Lessons and good practices shared and adopted

The project will contribute towards the attainment of the Sustainable Development Goals (SDGs) especially SDG15 that seeks to protect, restore and promote the sustainable use of terrestrial eco- systems, sustainably manage forests, combat desertification, and halt/reverse land degradation so as to end biodiversity loss. Others SDGs that the project will contribute to, include SD1 (ending poverty), SDG6 (providing clean water and sanitation) and SDG13 (climate action).

Project Justification requires a baseline of current effects of climate change on communities and their vulnerabilities. This clarifies how Ecosystem Services will be affected by future changes. Forecast climatic conditions at high spatial resolution across the Catchment will serve conservation planning needs. The forecasts need to be robust, taking account of exposure, adaptive capacity and sensitivity components.

Tt is vital to clarify how threatening processes (e.g. Invasive species, sand mining, land use, disease, livestock and wildlife) will change under different climate change scenarios. The high spatial variability of climate across the Katonga Catchment necessitates that each of the major ecosystems is assessed individually for its climate change sensitivity and response. It is in this context that this study was undertaken.

1.2. Statement of the problem

The vulnerability (exposure, sensitivity and adaptive capacity) of households that are increasingly dependent on agricultural related activities in the River Katonga Catchment to climate change is unclear. There is rapid

development accompanied by widespread environmental change within the Katonga Catchment. As agriculture is the economic mainstay, increase in land use for agricultural practices is impacting heavily on the ecosystems. The major issues related to environmental change in the catchment therefore include among others: deforestation and forest degradation; wetland reclamation; soil erosion; and prolonged drought. These have resulted in water stress and food insecurity with adverse effects on livelihoods making the communities vulnerable. The community-based enterprises are faced with difficulties threatening the gains in development. Therefore, efforts are needed to diversify the adaptation strategies beyond the current options. This study was undertaken to generate information on the current status as a justification and guidance for the project.

1.3. Objectives of the current assessment

The purpose of this study was to collect field data for elaboration of preparatory studies as a basis for the detailed proposal to be developed. As mentioned earlier, the project is titled: "Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda (RECOFE)". The study focused on vulnerability of the communities to Climate Change risks (and associated impacts) and the adaptation strategies of communities. The specific objectives were to:

1. Describe how species, ecosystems, and ecological processes within the Katonga Catchment are affected by climate change so as to determine how ecosystem services will be affected by the changes;
2. Undertake forecast climatic conditions taking account of exposure, adaptive capacity and sensitivity;
3. Describe how current threatening processes such as invasive species, mining, land use, diseases of humans, livestock and wildlife will change under different climate change forecasts and what these changes mean for local livelihoods and the future of the Katonga Catchment;
4. Propose appropriate actions for managing and mitigating negative changes in biodiversity and ecosystem services in the Katonga Catchment.

The findings should provide the status report on Vulnerability Assessment to enable a better justification and or baselines for the proposed project.

2.0. PROJECT AREA AND METHODS

2.1. Project Area

Uganda's drylands area, referred to as the "Cattle Corridor," stretches along a broad swath across the country from the southwest to the northeast covering 84,000 Km^2. The area receives irregular and low rainfall, experiencing periodic and extreme drought. Thus, it covers some of the country's most fragile ecosystems (Stark 2011). Within this corridor lies the Katonga Catchment which is the focus of the current assessment. The Katonga Catchment derives its name from R. Katonga, located in the south-central Uganda near the Katonga Wildlife Reserve (> 120km from Lake Victoria into which it drains). The catchment, thus, traverses part of the dry cattle corridor affected by many climate change effects. It covers about 13,837Km^2 in 16 districts.

The Katonga Catchment is a diverse landscape that is rich in biological and physical resources (e.g. biodiversity, fertile lands, wood, and water, among others). In terms of hydrology, the catchment is generally flat, allowing satellite wetlands to dominate. During the wet seasons, raised water levels in the vicinity of the swampy watershed occasionally forces some water to flow west into the western section of Katonga River which feeds L. George but, the bulk of the flow still continues eastwards into L. Victoria. To the west of its catchment, R. Katonga is also fed by several tributaries along its course to L. George. The principal mouth of the river enters L. Victoria near Lukaya in Kalungu district.

Local communities depend on natural resources contributing to livelihoods and Uganda's GDP. However, recently there has been an influx of refugees in the catchment with settlements Gazetted by Government. These have come in with increased pressure on resources and changes in resource use practices. Hence, the Catchment is threatened by over exploitation of species (through hunting, agriculture, timber harvesting, and habitat loss), among others. Climate Change is also believed to exercise confounding effects, exacerbating the impacts of these threats to the livelihoods of the local communities, biodiversity and ecosystem services.

Thus, climate change is anticipated to have impacts on biodiversity (genes, species and ecosystems) with far reaching consequences on the local communities. Where the climate has changed or habitats have been destroyed, there is uncertainty about the impacts on plants and animals that live in such sites, as well as the communities that rely on such resources. The present study was undertaken to determine how the communities would adjust to the changed climate as a justification for the proposed project.

Predictions show that climate change may lead to additional stress on habitats and ecosystems that are already stressed by anthropogenic activities. This will have major implications for the areas within the Katonga Catchment by causing a reduction in habitat size leading to loss of fauna. Significant local extinctions of plant and animal species, many of which are important resources for people, are projected, and if they occur, would affect rural livelihoods and genetic resources (IPCC, 2007). Pressures on ecosystems (e.g. conversion of land for agricultural expansion and settlement due to population growth, pollution, and the introduction of Invasive Alien Species (IAS)) are likely to change the integrity of ecosystems.

The rapidly increasing human populations across the catchment increases stress on the Ecosystem Services because climate change may affect species and ecosystems in numerous ways. This has implications for the livelihoods of communities. The most important likely impacts include increased water stress and the associated changes in productivity and viability of agricultural practices. This mirrors the general scenario in Africa where it projected that the population at the risk of increased water stress alone lies between 75–250 million and 350–600 million people by the 2020s and 2050s respectively (Boko *et al.* 2007), while agricultural productivity is expected to decrease by 17–28% by the 2080s as a result of climate change (Cline 2007).

2.2. Methods

2.2.1. Sampling Design

The Selection of the Focal Districts and Sub-Counties was based on the Katonga Catchment Management Plan (CMP). Within this plan, the catchment is divided into eight sub-catchments with the most degraded districts per sub-catchment indicated (Table 1, Figure 1). The Districts have been selected as hot spots for IWRM including degradation levels and the respective sub-counties. One District was selected from each of the Upper, Mid, and Lower sub-catchments as well as the Eastern side of the catchment.

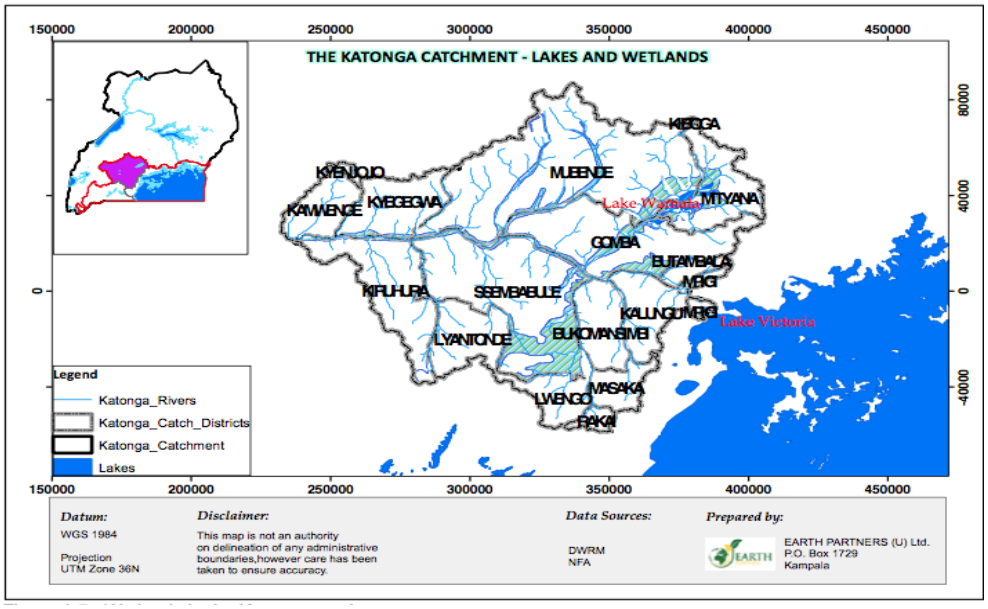

Figure 1: Districts and Wetlands of the Katonga Catchment

Table 1: Degradation hot spot sub-catchments, districts and Sub-Counties selected for field level consultative meetings for developing the RECOFE project in Katonga Catchment

No.	Sub-Catchment	Most Degraded District	Focal Sub-Counties
1	Upper Katonga	Kyegegwa	Ruyonza Sub-county
2	Mid-Katonga	Sembabule	Lwemiyaga Sub-County
3	Nabakazi	Mubende	Nabingoola Sub-County
4	Kakinga	Lyantonde	Mpumudde Sub-County
5	Bwogero	Mubende	Kasambya Sub-County
6	Nabajjuzi	Kalungu	Bwesa Sub County
7	Wamala	Mityana	Kakindu Sub-County
8	Kyogya	Lwengo	Kkingo Sub-County

2.2.2. Data Collection

Literature review

Information on communities and ecosystems, as well as the climate risks and actions undertaken to address the effects climate related risks were obtained by reviewing of literature in form of project documents, general management plans, and journal articles.

Field visits

Field data collection was conducted between 21/02/2020 to 27/02/2021. Site visits were conducted to ascertain the existence, current status, vulnerability/risks and adaptation measures to Climate Change. The visits were conducted to selected sites and settlements. Changes, and interventions reported by stakeholders were documented. The existence and magnitude of threatening processes such as invasive alien species, land degradation, diseases of humans, livestock and wildlife were documented. The desire was to determine how these may change under different climate change forecasts and what the changes mean for the future of the Catchment.

Consultations/meetings

Consultative meetings, Key Informant Interviews on community meetings were held at field level with various stakeholder including the Technical Staff/ Local Government Leadership, Resource Users, and the local community respectively. A key informant interview guide was used to guide discussions on:

- Vulnerability i.e. Exposure, Sensitivity and adaptive capacity
- Vulnerability of the biodiversity, ecosystems and local communities/households
- Gaps in knowledge about the Climate Change and its impacts on the communities and landscapes;
- Current threatening processes (e.g. invasive species, mining, land use, diseases of humans, livestock and wildlife) and how they may change under different climate change forecasts
- What the changes mean for the catchment and community livelihood
- Current mitigations/adaptation measures/interventions and best practices
- Key recommendations/appropriate actions for managing and mitigating the negative impacts

Vulnerability Assessment

Vulnerability was assessed to determine the factors that make the human communities and biodiversity vulnerable to climate change and other threats. The assessment considered how biodiversity and livelihoods within the Katonga Catchment are affected by climate change in order to understand how ecosystem services will be affected by future changes. Data were collected on land use, socio-economics, impacts of climate change, interventions, adaptive capacities and management measures. We needed to understand how threatening processes may change under climate change forecasts by the communities and what these changes meant for the future of the catchment. This information would be used to support project proposals on appropriate actions for managing and mitigating negative changes in biodiversity, ecosystem services and livelihoods. This would consider the identified knowledge on vulnerabilities to impacts of climate change obtained through consultations with key stakeholders.

2.2.3. Data Analysis

Qualitative data obtained from the Consultative meetings, Key Informant Interviews and community meetings were analysed using qualitative techniques (thematic analysis, discourse analysis and content analysis). Overall, the process involved data reduction, displaying data and drawing conclusions.

3.0. FINDINGS

3.1. Exposure to Climate Change

The degradation levels within the Katonga Catchment are already considered to be quite high and the catchment may, therefore, be considered as one of the most climate-vulnerable regions of Uganda.

The communities experienced a range of climate change risks including drought, flooding and soil erosion (Table 6). The severity of climate related risks varied across the catchment. These are summarized by district.

Table 6. Vulnerability assessment and adaptation strategies of communities to climate change impacts in the Katonga Catchment (A: Ssembabule District, B: Lyantonde District, C: Kyegegwa District), and D: Kalungu District)

A. SSEMBABULE DISTRICT

CLIMATE HAZARDS AFFECTING AREA	IMPACTS OF THESE HAZARDS	ADAPTATION STRATEGIES
Shortage of water for domestic use and production	Floods destroy houses, Marram roads Diseases as a result of flooding Food insecurity which results in malnutrition	-Sensitization of farmers on new farming technologies -Vacating of flooded areas
Prolonged drought	Food insecurity Death of animals Water scarcity	-Afforestation -Construction of water tanks -Adoption of irrigation system
Deforestation		
Food insecurity	Destruction of crops	-Mulching -Terracing
Increase in pests and diseases		
Too much heat		
Disturbance of ecosystems		
Floods	Soil erosion	
Intense Rainfall and Hailstones	Destruction of crops and livestock	

B. LYANTONDE DISTRICT

IMPACTS OF CLIMATE CHANGE	CLIMATE HAZARDS	IMPACTS OF EACH HAZARD	ADAPTATION STRATEGIES CURRENT	ADAPTATION STRATEGIES PROPOSED
1. Unreliable rainfall (expected in March and September but now occurring in February)	Low crop production	Famine	Clearing land and planting trees	Afforestation/tree planting
	Low income	Poverty		
		School dropouts		
		Theft		
		Family breakups		
		Early marriages		
	Famine			
2. Floods (e.g. in Kanyeganyegye and Rwamabala villages)	Soil erosion	Loss of soil fertility	Practicing climate smart technologies like terraces and mulching	Technical training in terracing and mulching
			Construction of small dams and wells	Construction of large valley dam
		Introduction of alien species of plants		
	Outbreak of diseases like Cholera	Death due to disease outbreaks?		
	Water siltation			
3. Prolonged dry spells	Water scarcity	-Drying of boreholes and valley dams -Failure of water related projects		
	Shortage of pastures for livestock	Death of livestock		
4. Strong winds (Affecting Plantations and Houses Occurring in September)	Destruction of infrastructure like houses, roads, schools and hospitals	Divorce	Planting wind breaks	Supplying tree seedlings
		Migration		
		Poverty		
	Spread of airborne diseases like flu	Death		

5. Outbreaks of pests and diseases			Spraying animals and crops with chemicals	Providing training in use of chemicals
6. Land disputes	Land fragmentation	Low development		
	Enmity	Insecurity		

C. KYEGEGWA DISTRICT

IMPACTS OF CLIMATE CHANGE	HAZARDS AFFECTING AREA	IMPACTS OF THESE HAZARDS	ADAPTATION STRATEGIES
Changes in rainfall amount, patterns and intensity	Flooding	-Poor road infrastructure -Destruction of property and infrastructure	
	Dirty water sources	-Disease outbreaks e.g. Cholera	Participating in communal work to protect water sources
Reduction in rainfall amounts	Prolonged drought	-Food insecurity (low yields) -Scarcity of water - Shortage of food	Acquiring storage facilities
Changes in patterns and strength of winds	Strong winds	--Destruction of property and infrastructure	

D. KALUNGU DISTRICT

IMPACTS OF CLIMATE CHANGE	CLIMATE HAZARDS	IMPACTS OF THESE HAZARDS	ADAPTATION STRATEGIES
Reduced Rainfall Amounts	Prolonged drought	Drying up rivers, plants -Famine	Selling animals and crops at a lower price for survival
Heavy rains	Destruction of crops by hailstones	-Displacement of people	-Taking bank loans to handle damage of hailstones -Higher demand for natural resources due to high population
	Flooding	Outbreak of diseases both people and animals	
		Destruction of property	Relocating to safe places
Changes in patterns and strength of winds	Strong winds	Destruction of property	Relocating to safe places

In summary, the communities in each of the sample districts were exposed to the following climate change related risks (Table 7). These risks are explained in the text following Table 7.

Table 7: Climate change risks communities are exposed to in Katonga Catchment

District	Perceptions if communities experienced Climatic Change Related hazards and perturbations	Climatic hazards and perturbations experienced			
		Drought	Landslides	Flooding	Soil erosion
Sembabule	Yes	√	X	√	√
Lyantonde	Yes	√	X	√	√
Kyegegwa	Yes	√	X	√	√
Kalungu	Yes	√	X	√	√

Drought

Most of the communities experienced drought as the main climate risk they were exposed to. The drought was however, more severely experienced in the upper catchment. During periods of drought, the amount of water flowing through the River Katonga downstream decreased leading to reduced water volumes for the sources, affecting the agricultural and domestic activities adversely.

Floods

During the heavy rains, there is flooding which is severest in the lower catchment, with soil erosion mainly occurring in the upper and middle catchments. The floods were destructive, sometimes cutting off travel between localities. The communities are affected when floods sweep away access routes to developments.

3.2. Sensitivity to Climate Change

3.2.1 Effect of changes in climate on households

Within the last 20 years the communities have noticed changes in climatic factors including rainfall, drought, temperature and winds. The severity of changes in climate was generally perceived as high. The most highly ranked change noticed was in rainfall patterns, followed by drought occurrence, high prevalence of strong winds and general increase in temperatures among others. The observed changes had negatively affected communities. The most commonly reported effects were low crop yields, inadequate food/food insecurity, and loss of farmlands.

3.2.2. Economic activities prone to climate-related hazards

Several economic activities undertaken by the households are prone to climate-related hazards. The most affected was crop farming, followed by livestock keeping, transport service e.g. Boda-Boda, Business/trade, Charcoal burning, and Extraction of resources from the wild. The communities believed that with eminent prevalence of climate related risks affecting their sources of livelihoods, they were most likely prone (likely to be affected) by climate change related hazards.

3.2.3. Drivers of high sensitivity to climate related risks

There are a number of factors that render the Katonga Catchment sensitive to changing climate conditions as perceived by the communities. These include:

(i) **Topography**

The landscape is generally rocky with various rocky outcrops and steep slopes. Such a landscape is inherently sensitive to any changes in climate. It is susceptible to water erosion, especially after the vegetation cover has been disturbed, usually in the up-slopes and mid-slopes. On the other hand, the topography makes the down-slope more sensitive to flooding and silt deposition.

(ii) **Soils**

The soils are generally fragile and may be considered relatively rich in nutrients. They are relatively fertile and thus support agricultural activities. They support the growth of crops including Maize, and Coffee. However, the soils are loose, and unstable. Such soils are thus vulnerable to erosion, especially where land management measures are not appropriate for soil and water conservation.

(iii) **Increasing population density**

The Katonga Catchment is characterized by a rapidly increasing population. The high population density, for example following the settlement of refugees, presents a challenging and extremely high demand for ecosystem services especially from the natural resources as alternative sources of livelihoods. Due to the increased demand for resources, communities encroach on forests uphill, wetlands down slope as they convert these lands to agricultural crop farmlands and for settlement. Land shortage is increasingly making these areas sensitive to climate change. The high population densities are also increasing the sensitivity by exacerbating soil/land degradation through over-cultivation.

(iv) **Deforestation**

Within the Katonga Catchment, deforestation has been rampant with a matrix of cropland and settlements. These are testimony to the habitat degradation in the region. One example is the Buyaga Central Forest Reserve in Mpumudde Sub County, Lyantonde District that the communities have encroached on causing severe deforestation. Additionally, the high populations are increasing the demand for fuel thus leading to rampant deforestation for fuelwood and charcoal derived from within and outside the Protected Areas.

(v) **Alienation of local people from natural resources**

The value attached to natural resources and or ecosystems in general influences the sensitivity to climate change. People who care less about the natural resources like forests and wetlands are more insensitive to climate change hazards. In some parts of the Katonga Catchment, the relations of communities with Environment Protection staff (e.g. NEMA) remain poor in some cases. What the staff may define as genuine law enforcement is perceived as harassment, as people are sometimes arrested and punished for indulging in illegal activities. As much as the dependence of the communities on natural resources is high, the local communities sometimes feel they are not part of the resource system and as such cannot care for it.

vi) **Wildfires**
Wild fires are a common phenomenon and are particularly caused by prolonged drought and increased human activities such as cattle grazing. More fires will lead to changes in vegetation composition as certain plants become more competitive with decreasing moisture and increasing fire frequency which will affect plants and animal distributions. The arrival of invasive alien species may be associated with increased fires and the associated degradation.

3.3. Adaptation Strategies and Adaptive Capacity

3.3.1. Adaptive Capacity

Based on the information presented in the earlier sections of this report, it is clear that climate change is occurring in the Katonga Catchment leading to impacts such as soil erosion, disease outbreaks, flooding and drought. In adapting to the change, there are a number of capacities and resources aimed at enhancing resilience to climate change through adaptation. The key actions taken to deal with climate change occur at the individual, household and community levels. However, institutions (government and non-governmental) also play a vital role in providing policy, technical and financial resources to adapt to climate change.

3.3.2. Management of changes in climate among the communities

The communities adapted to the climate related risks by implementing different measures including planting trees, terracing, mulching, fallowing, small-scale irrigation, and crop rotation among others (Table 8). Numerous measures are undertaken but they were reportedly effective up to only about 60%. Most of the community perceived generally that measures against soil erosion were the most effective compared to actions against drought and flooding.

Table 8: Measures undertaken by communities to cope with climatic related hazards

SEMBABULE

)APTATION STRATEGIES
Sensitization of farmers on new farming technologies Vacating of flooded areas
Afforestation Construction of water tanks Adoption of irrigation system
Mulching Terracing

LYANTONDE

ADAPTATION STRATEGIES CURRENT	ADAPTATION STRATEGIES PROPOSED
Clearing land and planting trees	Afforestation
Practicing climate smart technologies like terraces and mulching	Technical training in terracing and mulching
Construction of small dams and wells	Construction of large valley dam
Planting wind breaks	Supplying tree seedlings
Spraying animals and crops with chemicals	Providing training in use of chemicals

KYEGEGWA

)APTATION STRATEGIES
Participate in communal work to protect water sources
Acquire storage facilities

KALUNGU

)APTATION STRATEGIES
Selling animals and crops at a lower price for survival
-Taking bank loans to address the damages of hailstones -Higher demand for natural resources due to high population
Relocating to safe places
Relocating to safe places

Table 9. Summary of measures undertaken by the communities to adapt to climate change effects

Main actions undertaken to cope with climatic hazards and perturbations	Sembabule	Lyantonde	Kyegegwa	Kalungu
Afforestation/Tree planting on farm/gardens	√	√		
Terracing	√			
Mulching	√			
Fallowing				
Small scale irrigation systems	√			
Contour bands stabilized with grass/vegetation				
Crop rotation				
Planting fodder crops for livestock				
Planting improved crop varieties				
Digging trenches/drainage channels				
Avoiding deforestation				
Leaving river banks uncultivated				
Protecting river banks by planting				
Stopping cultivation on steep slopes				
Retaining indigenous trees on farm				
Construction of culverts/bridges				
Protecting the wetlands				
Acquiring land in other areas				
Applying organic fertilizers				
Using pesticides				
Rainwater Harvesting and storage			√	
Intercropping/Mixed cropping/plant cover crops				
Using alternative and efficient energy solutions e.g. energy saving stoves and solar power				
Engaging in other IGAs				
Controlling Invasive Alien Species				
Storing food for food security				
Technical Training in Terracing		√		
Construction of large valley dams		√		
Suppling tree seedlings		√		
Training in use of herbicides/herbicides		√		
Training farmers on new farming techniques	√			
Vacating flooded areas	√			
Construction of water tanks	√			
Communal work to protect water sources			√	
Selling animals and crops at lower prices				√
Taking bank loans to handle damage of hailstones				√
Higher demand for natural resources due to high population				√
Relocating to safe places				√

Some of the actions undertaken by the communities are quite innovative such as the 'Roof Top Gardens', Figures 3 and 4.

Figure 3. 'Roof Top Gardens', a '3 in 1 climate change adaptation measure' to hold roofs against strong winds, moderate high day-time temperatures, and grow vegetables as food security

Figure 4. Solar Panel as an alternative energy source

4.0. DISCUSSION

To prevent and overcome the threats of climate change in the landscape, it has been proposed that nature-based measures should be undertaken. Such measures include enhancing availability of natural resources including water, energy, and sustainable land management measures aimed at improving land productivity. On-farm tree planting, controlling/reducing deforestation, terracing and crop rotation are the most important measures for mitigating negative changes.

None of the community members representing individual households have significant buffers against additional stress. Village focus group results indicate that they all face major challenges indirectly related to climate, such as declining soil fertility and increasing land pressure. On average, the communities are food insecure. Specific attributes made some households more sensitive to climate variability and change. More vulnerable households were those with many of the following characteristics:

- Lower proportion of able-bodied (working) members;
- Less well educated;
- More likely to be headed by females;
- Less likely to sell a portion of their crops or livestock;
- Less access to loans;
- Participate less frequently in community groups such as producer associations, cultural or labor savings groups, and religious organizations; and
- Earn income less frequently from off-farm sources (and when they do, that income is less than the amount that more secure households earn).

The vulnerability also stems from the fact that they depend heavily on crops whose value chains are sensitive to climate variability and change; any change in food production critically increases overall vulnerability. For example, maize is an essential part of the diet of the most vulnerable households, and they sell a small portion of their harvest; yet this small amount of maize they sell represents a significant source of cash for the household. Less vulnerable households plant maize more often, sell a greater portion of their harvest, and have other more important sources of income. Similarly, the most vulnerable households in coffee-growing districts sell coffee less often, but they rely more heavily on it for income.

Adaptive Capacity: The level of income diversity affects the ability of households to adapt to climate change. The assessment concludes that households with greater adaptive capacity manage more diverse agricultural portfolios; they plant more crops and invest in livestock. They also have a more varied mix of on-farm and off-farm income sources. Marked differences by districts significantly affect this diversity. Access to land plays a strong role in on-farm diversification; as a result, land pressure in more densely populated districts increases vulnerability. Proximity to urban centers also increases off- farm income and thus significantly reduces vulnerability to climate variability and change.

The assessment identified a wide range of measures that households employ to adapt to climate variability and change. They modify their management practices by shifting planting dates, preparing soil differently, or changing the mix of crops farmed on the same plot. Households also address risks by planting additional crops and crop varieties, and by investing in livestock or fruit trees. Additionally, households seek sources of income outside of agriculture, both through short-term 'coping' strategies, such as hiring themselves out as manual labor or by producing charcoal; and through longer-term strategies, such as migration and investments in the education of their children.

5.0. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusions

Access to information, if not well addressed, hinders adoption of interventions to climate change hazards and risks. Drought affects the communities that have not planted any trees on their land or around their homes. The floods may affect many people who have terraced or dug trenches on their land respectively.

The study, as expected, shows that climate change is occurring in the Katonga Catchment and is mainly driven by anthropogenic factors, especially increased land use intensity. This is driven by increased population growth and its associated demand for land for agriculture and settlement. In addition, there is unsustainable utilisation of natural resources.

Climate change will negatively affect species, ecosystems and ecological processes in the Katonga Catchment if appropriate mitigation and adaptation actions are not implemented. However, the Katonga Catchment still has the potential to provide a wide range of ecosystem services that vary spatially, but these have to be protected from degradation. In cases where they are already degraded, restoration measures should be put in place.

The projected climatic conditions will thus affect several ecosystem services and processes in the Katonga Catchment, but the proposed project is likely to help in dealing with some of the challenges.

5.2. Recommendations and Adaptation Options

Sustainable Land Management Practices such as Mulching, Terracing, Planting Trees must be encouraged and scaled up. In addition, alternative livelihood strategies must be identified for the most vulnerable households.

The adaptive capacity of communities that are increasingly dependent on agricultural related activities in the Katonga Catchment is weak. The droughts and other associated effects could have adverse effects on agriculture making the communities vulnerable. Hence, efforts need to be made to diversify the livelihood options beyond the current level.

The Katonga Catchment is faced with increasing population pressure and the demand for resources, hence there is a need to manage the human population increase. Restoration of degraded ecosystems must be treated as a matter of priority. Current measures are inadequate in many cases. Livelihoods of communities requires additional attention by sustaining promising/successful interventions.

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ANNEX 5: ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

CHAPTER ONE: INTRODUCTION

1.1. Project Background

Uganda has experienced an increase in the frequency and intensity of droughts and floods in recent years. The percentage of rainfall coming in the form of heavy precipitation events is anticipated to increase, escalating the risk of disasters such as floods and landslides.

The Katonga catchment is amongst the most climate-vulnerable regions in Uganda. The catchment traverses part of the dry Ugandan cattle corridor[39], which is affected with a wide range of climate change effects. Climate change is expected to exacerbate the impacts of existing threats to the catchment's inhabitants and ecosystems[40]. Climate change effects in the catchment include, more extreme and frequent periods of intense rainfall, erratic on-set and cessation of the rainy season as well as more frequent episodes of drought.

In addition, majority of the farmers in Katonga catchment are small scale farmers with land holding ranging between 0.5ha and 1ha. Annual crops grown include mainly millet, maize, beans and sweet potatoes. Land fragmentation is common due to high population density especially in hilly areas thus, severe degradation of shallow soil areas. The catchment population depends on the natural environment for their livelihoods and most especially for food and biomass energy. The communities have also drained wetlands in some areas for cultivation and others have cleared the shrubs and thickets, especially in drier areas for charcoal burning. Some activities in the catchment have directly impacted on the availability and sustainability of water resources especially land use change for agricultural production through deforestation and forest degradation, and reclamation of wetlands.

It is against this background that the Ministry of Water and Environment in partnership with Global Water Partnership and lower local governments in the Katonga catchment have designed the project "Enhancing resilience of communities and fragile ecosystems to climate change in Katonga catchment Uganda (RECOFE).

The overall goal of the project is strengthening the resilience of communities and fragile ecosystems to climate change impacts through promoting appropriate water infrastructure investments and nature- based solutions. The specific objectives of the project are to:

- Strengthen the capacity of key grass root stakeholders for climate change adaptation
- Promote appropriate water storage technologies for increased water and food security.
- Support establishment of nature-based enterprises for improved community livelihoods.
- Support knowledge management and information sharing.

The project has four components:
Component 1: ***Strengthening the capacity of key grass root stakeholders for climate change adaptation***. This will focus on undertaking capacity needs assessment in relation to climate change for key grass root stakeholders, inducting and empowering grass root-duty bearers with knowledge in climate change, training in roles and responsibilities of the duty bearers at the grass-roots, facilitating tool kit development for mainstreaming climate interventions in development initiatives. The tool kit will provide reference and guide the climate change interventions as well as Integrating Climate change issues into the Katonga catchment Management Plan (CMP).

Others include facilitating the mainstreaming of Human Rights Based Approaches in climate change initiatives, facilitating communities in advocacy, lobbying and public relations through creation of dialogue platforms and conducting of climate change campaigns/dialogues, facilitating resource use negotiations and development of

[39] Cattle Corridor stretches from south-western to north-eastern Uganda, highly affected by climate change impacts e.g. droughts and is constituted by rangelands which form 44% of Uganda
[40] *Katonga catchment water resources development and management plan 2018*

Management plans, Memorandum of Understanding (MoUs) between the communities and duty bearers of the natural resources and developing and strengthening the governance and leadership frameworks (by-laws, ordinances, guidelines).

Component 2: Promoting appropriate water storage technologies for increased water and food security. This will focus on construction or rehabilitation of agreed upon low cost and appropriate physical water storage facilities, facilitating development of simple biophysical water harvesting technologies for crop and livestock production, facilitating construction of micro-irrigation schemes as learning centers and procuring appropriate seed and improved pastures for increased crop and livestock production respectively.

Component 3: Supporting nature-based enterprises for sustainable socio-economic development. This will focus on establishing Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agro-waste biomass, procuring necessary tools to improve productivity of nature-based enterprises and viable high value germplasm, establishing value chains for key and agreed nature-based enterprises (including production, processing, handling/storage, packaging/ eco-labelling and Identifying and finding probable Sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, People With Disabilities-PWDs) to scale -up nature-based enterprises.

Others include facilitating stakeholders to participate in business forums, trade fairs & exhibitions, business tours and pitches of business plans to the private sector, establishment and operation of a market information systems and development of promotional materials for marketing of products. Lastly it will involve facilitating registration of small-scale businesses, training entrepreneurs in business management skills, developing business plans for translation into functioning businesses, undertaking ecosystem restoration activities (wetlands and river bank restoration, reforestation etc.) and sensitization of stakeholders in sustainable utilization of natural resources (e.g. appreciation and importance of the natural ecosystems).

Component 4: Knowledge management and information sharing. Involves facilitating experience sharing and cross-learning of innovative climate change adaptation interventions through learning events, documenting lessons, good practices and disseminating them for replication and up-scaling, documenting climate related case studies, packaging existing and new information into usable forms including policy briefs, flyers and leaflets as well as popularizing existing frameworks (i.e. policies, Ordinances, by-laws).

1.2. Rationale for Environmental and Social management Framework (ESMF)

One of the key requirements for the approval of the RECOFE project by the Adaptation Fund is a need to develop an Environmental and Social management Framework for the project and associated activities. The ESMF including a detailed Environmental and Social management plan (ESMP) is intended to ensure that the project activities enhance positive environmental and social impacts while minimizing and mitigating the negative/adverse social and environmental impacts. The ESMF is a tool intended to guide project implementers to ensure sound environmental and social management practices during project implementation.

Specifically, the ESMF will:

i. Establish clear procedures and methodologies for environmental and social planning, review, approval and implementation of activities to be executed under the project;
ii. Assess the potential environmental and social impacts of envisaged projects activities;
iii. Propose mitigation measures which will effectively address identified negative impacts;
iv. Specify appropriate roles and responsibilities, and outline the necessary reporting procedures for managing and monitoring environmental and social concerns related to this project; and
v. Determine the training, capacity building and technical assistance needed successfully implement the provisions of the ESMP by the various stakeholders.

The ESMF is structured as follows:

i. Overview of the project, including activities and documentation on target areas;
ii. Policy Legal and Institutional Framework relevant to the project
iii. Risk Identification and Categorization; and
iv. ESMP

CHAPTER TWO: POLICY LEGAL AND INSTITUTIONAL FRAMEWORK

Uganda's policy, legal and regulatory frameworks that are relevant to and that will guide implementation of Environmental and social issues for the RECOFE Project are summarized below

2.1. Policy Framework

Policy	Relevance to the Project
The National Environment Management Policy 1995	The NEMP sets out the overall policy goals, objectives and principles for environmental management in Uganda. Its overall goal is sustainable social and economic development, which maintains and enhances environmental quality and resource productivity to meet the needs of present generations without compromising the ability of the future generations to meet their own needs[41]. It recognizes that Uganda faces a number of environmental issues including: soil degradation, deforestation, loss of biodiversity, increasing pollution and environmentally related diseases. These problems are compounded by poverty, low amounts of environmental awareness and low levels of technology. Specifically, the policy recognizes climate as a 'vital natural resource' that needs to be monitored in order to better direct land use, encourage sustainable economic development, and manage air pollution, and GHG emissions. All the project components 1, 2, 3 and 4 are in line with the objectives of this overarching policy.
The National Climate Change Policy 2015	The goal is to ensure a harmonized and coordinated approach towards a climate- resilient and low-carbon development path for sustainable development in Uganda. The Policy adopts a comprehensive approach to address climate change, identifying as priority concerns: adaptation, mitigation, monitoring, and research. To address these concerns, the Policy promotes the implementation of activities relating to: education and increased awareness; gender issues; promoting and diffusing research; monitoring and transferring knowledge; and institutional capacity building. Other activities include promotion of sustainable activities in the sectors of agriculture and livestock, fishery production, water management, forestry, wetland, biodiversity and ecosystem services and tourism are identified are important needs to develop Uganda's approach to adaption to climate change. The costed Implementation Strategy provides a detailed account on implementation of the Policy, including an indicative costing for programmes and activities to be developed. The project components and activities are aligned and contribute to the attainment of the policy objectives.
The National Water Policy 1999	The policy is for management and development of water resources in Uganda in an integrated and sustainable manner so as to secure and provide water of adequate quality and quantity for all social and economic needs for present and future generations with the full participation of all stakeholders. This Project is planned to ensure provision of adequate water needs for domestic use, irrigation and livestock in the target communities. Activities under component 2 are in line with and will be guided by this Policy.
The National Policy for Disaster Preparedness and Management 2010	It is the framework policy for disaster and risk management and preparedness in Uganda, including disasters caused by climate change. Has mechanisms and structures for effective management of disasters including: vulnerability assessments, mitigation, preparedness, and response and recovery. Explicitly sites climate variability, climate change, and environmental degradation among the increasing vulnerabilities Uganda faces and needs to prepare for[42]. All project components 1, 2, 3 and 4 are geared towards reducing climate vulnerabilities and increasing resilience of communities and ecosystems hence they are in line with this policy and contribute to the attainment of its objectives.
The National Land Use Policy 2006	The overall policy goal is to achieve sustainable and equitable socio-economic development through optimal land management and utilization in Uganda. The policy recognizes amongst others, the need for the protection and sustainable use of land resources through conducting environmental assessments and implementation of measures outlined in such assessment studies. It also recognizes the 3 Rio Conventions and notes that increasing climatic variability is responsible for drought and accelerates desertification, thereby contributing to increased aridity and reduction in the area available for cultivation or grazing
National Policy for the Conservation and Management of Wetland Resources, 1995	The policy has established principles by which, wetlands resources can be optimally used and their productivity maintained in the future and stop existing unsustainable exploitative practices in wetlands. This project aims at catchment protection including development of catchment management plans and involvement of the community members on how to protect the wetlands. Components 2 and 3 contributes to this policy.

[41] https://climate-laws.org/geographies/uganda/policies/national-climate-change-policy
[42] https://climate-laws.org/geographies/uganda/policies/national-policy-for-disaster-preparedness-and-management

Renewable Energy Policy for Uganda 2007	Among other priorities the policy aims to respond to threats posed by the increasing energy prices, environmental degradation, climate change, as well as Government's commitment to poverty and gender responsive energy actions[43]. Furthermore, implementation of the Renewable Energy Policy will result in the disposition of Uganda's commitments at the Bonn Conference on Renewable Energy in 2004.The project focuses on addressing issues of environmental degradation and climate change.
The National Forest Policy 2001	Key issues include how to maintain and enhance the Permanent Forest Estate, improve the management of forest resources on private and customary land, address the underlying causes of deforestation, including lack of policy support, market failure, weak regulation and rural poverty, capitalize on the economic, social and environmental opportunities in forestry without undermining the resource base, ensure the survival of forest biodiversity and to balance this with the pressing development needs of the country, how to rehabilitate and conserve key watershed forests, how to promote and maintain the greening of the urban environment, as well as ensuring improved tenure to land and trees that acts as an incentive for individuals, and women in particular, and communities to invest in forestry among others. Forestry plays a very important role in enhancing the resilience of ecosystems and some of the activities under components 1, 2 and 3 are in line with this policy.
The National HIV/AIDS Policy, 2004	The policy applies to all current and prospective employees and workers, including applicants for work, within the public and private sectors. It also applies to all aspects of work, both formal and informal. The project will mainstream HIV/AIDS interventions into its activity implementation plans especially activities under sub-projects in components 2 and 3 that may require congregation of labor from different while undertaking activities like construction of mini-irrigation schemes and other water related infrastructure.
The National Cultural Policy, 2006	The National Culture Policy, 2006 complements, promotes, and strengthens the overall development goals of the country. Its specific objectives include amongst others, the need to promote and strengthen Uganda's diverse cultural identities and to conserve, protect, and promote Uganda's tangible and intangible cultural heritage. This ESMF outlines Chance Finds Procedures to ensure protection and conservation of any PCRs that will be encountered during project implementation. In addition, the project will be implemented in areas adjacent to Katonga Wildlife Reserve. Therefore, extra care share be undertaken not to disturb or encroach on the Wildlife reserve during project implementation.
The National Gender Policy 2007	The Uganda Gender Policy is an integral part of the national development policies. It is a framework for redressing gender imbalances as well as a guide to all development practitioners. The aim of this policy is to guide all levels of planning, resource allocation and implementation of development programmes with a gender perspective[44]. The emphasis on gender is based on the recognition that "gender" is a development concept useful in identifying and understanding the social roles and relations of women and men of all ages, and how these impact on development. This is applicable to all the four project components and efforts shall be made to ensure that all categories of people benefit from the project without discrimination.
The National Agriculture Policy 2013	The overall objective of the policy is to meet Uganda's high-level national commitment to achieve food and nutrition security and improve household incomes. The policy focuses on enhancing sustainable agricultural productivity and value addition, providing employment opportunities, and promoting domestic and international trade[45]. Activities under component 2 and 3 are in line with this policy.
National Irrigation Policy 2017	The overall policy objective of the draft irrigation policy is "Poverty Alleviation and Economic Growth as a result of the sustainable realization of the country's irrigation potential mitigating the effects of climate change and contributing to the transformation of Ugandan society from a peasant to a modern and prosperous country"[46]. Component 2 of the project contributes to this policy.

[43] https://climate-laws.org/geographies/uganda/policies/the-renewable-energy-policy-for-uganda
[44] http://extwprlegs1.fao.org/docs/pdf/uga163564.pdf
[45] http://agriculture.go.ug/wp-content/uploads/2019/04/National-Agriculture-Policy.pdf
[46] https://www.mwe.go.ug/sites/default/files/library/Uganda%20National%20Irrigation%20Policy.pdf

2.2. Legal Framework

Legislation	Relevance to the Project
The Constitution of the Republic of Uganda, 1995	The right to a clean and healthy environment is enshrined in Article 39 of the Constitution of Uganda, 1995 as well as integration of people in the development process. In particular, the Constitution guarantees a range of basic human rights to the people of Uganda which include: gender balance and fair representation of marginalized groups in development process; protection of the aged; the right to development; access to clean and safe water; basic medical services; and access to education. The project components are in line with the constitution.
The National Environment Act, 2019	Article 69 of the Act on the Management of climate change impacts on ecosystems states that a lead agency may, put in place guidelines and prescribe measures to 1) address the impacts of climate change on ecosystems, including by improving the resilience of ecosystems, promoting low carbon development and reducing emissions from deforestation and forest degradation, sustainable management of forests and conservation of forest carbon stock, and 2) advise institutions, firms, sectors or individuals on strategies to address the impacts of climate change, including those related to the use of natural resources, 3) take measures and issue guidelines to address the impacts of climate change, including measures for mitigating and adaptation to the effects of climate change, and 4) liaise with other lead agencies to put in place strategies and action plans to address climate change and its effects[47]. All project components are in line with this Act.
The Land Act, Cap 227	The Act and the Constitution of the Republic of Uganda vest land ownership in Uganda in the hands of Ugandans and guide matters of land acquisition for development project through compensation which has to be fair, timely and adequate. The Act advocates for managing and utilizing land in accordance with the Forests Act, the Mining Act, the National Environment Act, the Water Act, the Uganda Wildlife Act and any other law; and Obtaining concessions or licenses or permits in respect of wetlands, forest reserves, national parks and any other land reserved for ecological and touristic purposes, subject to any law. Project activities shall be undertaken in accordance with the provisions of Act.
National Forestry And Tree Planting Act, 2003	The National Forestry and Tree Planting Act 2003 is the main law that regulates and controls forest management in Uganda by ensuring forest conservation, sustainable use and enhancement of the productive capacity of forests, to provide for the promotion of tree planting on private and communal lands and through the creation of forest reserves in which human activities are strictly controlled. Specifically, the Act will provide guidance for afforestation, restoration and other tree nursery and irrigation subprojects under components 2 and 3.
Uganda National Meteorological Authority Act, 2012	This Act establishes the Uganda National Meteorological Authority as a body corporate and provides with respect to its administration, internal organizations, functions and powers, etc. The Authority shall, among other things, establish and maintain systems for the rapid exchange of meteorological and related information, establish networks of stations for taking, recording and transmitting meteorological observations as well as hydrological and other geophysical observations related to meteorology. Among the Authority's functions, it should interpret, review and recommend appropriate changes in the climate policies, as well as international instruments. Components 1 and 4 of the project.
Uganda Wildlife Act 2019	The Act provides for the conservation and sustainable management of wildlife; to strengthen wildlife conservation and management; to streamline the roles and responsibilities of institutions involved in wildlife conservation. To this end, the Act addresses Wildlife conservation, protected species; wildlife use rights; hunting and trapping; management of problem animals; and international trade in species and specimens. Activities under component 3 will contribute to this Act. The Uganda Wildlife Act (2019): Under Section 23 of the Act, projects which may have a significant effect on any wildlife species or community are required to undertake an environmental impact assessment. The project activities shall be implemented in areas around Katonga Wildlife Reserve are intended to promote natural resource conservation and reduce pressure on the resources in the Wildlife Reserve.
Historical Monument Act, 1967	The Act provides for the preservation and protection of historical monuments and objects of archaeological, paleontological, ethnographical and traditional interest. Section 10(2) requires that any person who discovers any such object takes such measures as may be reasonable for its protection. This implies that the project will undertake the Chance Finds Procedures in addressing possible encounters of any archaeological resources during project implementation especially under components 2 and 3.
The Occupational Safety and Health Act, 2006	The Act provides for the prevention and protection of persons at all workplaces from injuries, diseases, death and damage to property. The key provision of this Act is safety and welfare of workers. ESMF provides for safety gear for workers during implementation of project activities especially for water infrastructure works among other subprojects

[47] https://www.mwe.go.ug/library/national-environment-act

The Employment Act, 2006	This Act spells out general principles regarding forced labor, discrimination in employment, sexual harassment and provisions to settle grievances. It further provides that, a child under the age of twelve years shall not be employed in any business, undertaking or workplace. Therefore, project implementers will not engage any child workers at the project sites at any one time during the project lifecycle especially under components 2 and 3 with labour intensive activities.
The Workers Compensation Act 2000, Cap 225	The act provides for compensation to workers for injuries suffered in course of their employment. According to the Act, an employee is entitled to compensation for any personal injury from an accident or disease arising out of and in the course of his or her employment even if the injury or disease resulted from the negligence of the employee. Under this Act, compensation is automatic. This will mainly apply to activities under component 3.
Nationally Determined Contribution (NDC) 2015	NDCs are national climate plans highlighting climate actions, including climate related targets, policies and measures governments aims to implement in response to climate change and as a contribution to global climate action. Through this NDC, Uganda hopes to reduce emissions from its business-as-usual (BAU) scenarios by 22% by 2030 via a series of policies and measures to mitigate and adapt to climate change[48] . All project components shall contribute towards the objectives of the NDCs.
Uganda NDC Partnership Plan For Climate Action 2018.	The five priority areas for Uganda identified in its NDC Partnership Plan are: strengthened operational and gender-responsive policy and institutional frameworks for the effective governance of climate change; increased climate financing for planning and budgeting on the national and local levels; effective and institutionalized measurement, reporting and verification (MRV) systems to monitor greenhouse gas emissions and gender-responsive adaptation measures; strengthened capacity of government officials, civil society, the private sector and academia to effectively integrate NDC and Sustainable Development Goal (SDG) commitments with a gender lens into existing and future programs; and accelerated project financing for NDC implementation[49]. All project components shall contribute towards the objectives of the Plan.
Vision 2040	Vision 20140 advocates for need to develop appropriate climate change adaptation and mitigation strategies in all sectors to ensure that the country is resilient to the adverse impact of climate change. In addition is developing guidelines for incorporating climate change in sectorial and local government plans and budgets.
The Uganda National Climate Change Communication Strategy 2017-2021	The strategy was developed after the Government identified the need for more effective dissemination of climate change adaptation and mitigation information across the country. It is mean to enhance sustainable development and improve community knowledge, attitudes and practices towards climate change[50]. Component 4 of the project contributes to this strategy.

2.3. Regulatory Framework

Regulations	Relevance to the Project
The National (Environmental and Social Assessment) Regulations, 2020.	The ESIA Regulations give a systematic ESIA procedure in Uganda. They give a legal mandate to EIA, thus paving the way for an enabling environment for its use as a tool for environmental protection. The regulations also have punitive measures for offenders. The EIA Regulations further provide for: enabling participation of communities in undertaking environmental impact assessment studies; seeking views of people in communities which may be affected by project activities including reforestation and afforestation activities; publication of intended project activities through mass media and holding meetings with the affected communities; holding of public hearings and producing reports of the hearings; and ensuring that all environmental impact assessment reports including terms of reference, public comments, reports of public hearings or any other information submitted to NEMA are public documents. Further assessments shall be done especially for activities under components 2 and 3.
Conduct and Certification of Environmental Practitioners Regulations, 2003	Provides guidance on conduct and Registration and certification of EIA practitioners.
Guidelines for strategic Environmental assessment	Strategic environmental assessment (SEA) is the systematic and participatory process of evaluating the likely environmental, health and social consequences of proposed policy, plan or programme initiatives and alternatives, to ensure that they are integrated and appropriately addressed

[48] http://ccd.go.ug/wp-content/uploads/2019/10/INDC-Uganda-final-14-October-2015.pdf
[49] https://ndcpartnership.org/news/uganda-releases-first-ndc-partnership-plan-climate-action-africa
[50] https://www.mwe.go.ug/library/uganda-national-climate-change-communication-strategy

(SEA) in Uganda 2020	at the earliest stage of decision making in line with economic, environmental, health and social considerations[51]. Focuses on decisions regarding the implications of policies, plans and programmes which should inform decisions at project level. Focuses on decisions regarding projects which should conform to relevant policies, plans or programmes.
The National Environment (Audit) Regulations, 2020:	The Audit Regulations reinforce the requirement to undertake Self-Environmental Audits as contained in the EIA Regulations. Normally, under approval conditions of NEMA, it is a requirement to undertake Audits for projects, which comply with the EIA requirement as part of the conditions of EIA approval. Some activities under component 2 may require Audits during their operation Phases.
Water Abstraction Regulations, 1998	Regulation 18 provides for the establishment of a controlled water abstraction mechanism through issuance of permits to regulate the amount of water abstraction. The regulation requires that, a Water Abstraction Permit either for ground or surface water abstraction are pre-requisites for motorized and/or abstracting of quantities above 400m3/day for persons involved in construction (damming, diverting surface water). Under water related projects, compliance to water abstraction regulations by water supply schemes needs to be established and associated water abstraction permits need to be verified. This important for activities under component 3.
The Water (Waste Discharge) Regulations, S.I. No. 32/1998	Specifies what quality is acceptable in terms of effluent released into rivers, promotes water pollution prevention and provides for effluent discharge in aquatic and sewerage system standards. These need to be observed especially under component 3 of the project.
National Environment (Waste Management) Regulations, 1999	These regulations promote cleaner production methods and require a facility to minimize waste generation by eliminating use of toxic raw materials; reducing toxic emissions and wastes; and recovering and reuse of waste wherever possible. The Regulations oblige the Developer to put in place measures for proper management of waste. These apply to activities under components 2 and 3.
Wetlands, River Banks and Lake Shores Management) Regulations, S.I., No. 3 /2000	Provides for protection of Wetlands, River Banks and Lakeshore Zones. Every landowner, occupier or user who is adjacent or contiguous with a wetland, River Banks and Lakeshore shall have the duty to prevent the degradation or destruction of these ecosystems and shall maintain their ecological and other functions[52]. Project activities will enhance the conservation of these ecosystems in the Project areas.
The National Environment (Mountainous and Hilly Areas Management) Regulations, 2000. 2000 No. 2	Provides guidance on the use of hilly and mountainous areas, the activities and associated measures to ensure sustainable land management. Some of the project under component 2 and 3 may be implemented in hilly and mountainous areas.
The National Environment (Noise Standards and Control) Regulations, 2003.	Section 7 of these regulations requires that no person shall emit noise in excess of permissible noise levels, unless permitted by a license issued under these Regulations. Section 8 imparts responsibility onto project developers to use the best practicable means to ensure that noise does not exceed permissible noise levels. This mainly applies to sub-projects under components 2 and 3.

[51] https://nema.go.ug/sites/all/themes/nema/docs/Strategic%20Environmental%20Assessment%20(SEA)%20Guidelines%20Pdf%202020.pd
[52] https://nema.go.ug/sites/all/themes/nema/docs/wetlands_riverbanks.pdf

2.4. Institutional Framework

Institution	Relevance to the Project
Policy Committee on Environment	The Policy Committee on Environment established under the National Environment Act, 2019 provides strategic policy guidance on climate action in Uganda
Parliamentary Standing Committee on Climate Change	Launched in 2019 with the mandate to review, consider, and scrutinize all matters related to climate change mitigation and adaptation, make recommendations to Parliament on responses to address climate change among their other mandates
The National Climate Change Advisory Committee (NCCAC)	The National Climate Change Policy of 2015 established the NCCAC chaired by the Permanent Secretary of Ministry of Water and Environment. NCCAC is a high-level technical multi sectoral stakeholder platform which provides technical guidance on issues related to implementation of the policy strategic interventions.
The Ministry of Finance, Planning and Economic Development (MoFPED)	In addition to its mandate, MoFPED, ensures that national, sectoral and district-level budgets and indicative planning figures integrate climate change through appropriate provisions for the implementation of the policy and its strategy. MoFPED also facilitates the introduction of relevant financial mechanisms and tools to support financial resource mobilization and investment for the implementation of the policy.
The National Planning Authority	In executing its planning function, NPA also ensures that climate change is integrated through adequate provisions in plans of Ministries, Agencies and local government.
National Environment Management Authority (NEMA)	National Environment Management Authority (NEMA) is responsible for environmental coordination, supervision and monitoring. NEMA has a direct role in terms of approval of Environmental and Social Impact Assessment and Audit Reports as well as monitoring the implementation of the Project ESMP.
Uganda National Meteorological Authority (UNMA)	The Uganda National Meteorological Authority (UNMA) is responsible for establishing and maintaining weather and climate observing stations network, collection, analysis and production of weather and climate information, (including warnings/advisories) to support social and economic development[53]. The key sectors served by UNMA include; transport (mainly aviation and marine), defense, agriculture, disaster preparedness, environmental and water resources management, tourism and construction industry. UNMA accomplishes these responsibilities in collaboration and coordination with the World Meteorological Organization (WMO) and its Member States and other global and regional meteorological centers.
Ministry of Water and Environment/ Climate Change Department (MWE/CCD)	The overall goal is to coordinate climate change related issues. MWE/CCD is also the National Focal Point for the United Nations Framework Convention on Climate change. MWE/CCD works with climate change coordination units in different Ministries, Departments and Agencies (MDAs) to ensure the mainstreaming of climate change in the different sectors of the economy. It also works with the Ministry of Local Government (MoLG) and NPA to ensure integration of climate change in District Development Plans (DDPs) and Ministries and Agencies respectively.
Ministry of Water and Environment/ Climate Change Department (MWE/CCD) – Directorate of Water Resources Management.	The directorate of Water resources management will take lead in the implementation of this project.
The Ministry of Local Government	In addition to its mandate, the Ministry of Local Government provides guidance to the districts to translate the policy priorities and the implementation strategy into coherent plans at the district level and ensures that adequate provisions in district development plans, annual work plans and budgets for the implementation of the Climate Change Policy.
District Environment and Natural Resources Committees/District Disaster Management Committees	Responsible for climate change matters in the district
District Environment and Natural Resources and Production departments	Responsible for implementation of climate change interventions in the district

CHAPTER THREE: ENVIRONMENTAL AND SOCIAL POLICY OF THE ADAPTATION FUND (APPROVED: NOVEMBER 2013; REVISED IN MARCH 2016)

The Environmental and Social Policy of the adaptation fund emphasizes the need to ensure that projects/programmes supported by the Fund do not unnecessarily harm the environment, public health or vulnerable communities[54]. All implementing entities are required to have an environmental and social management

[53] https://www.devex.com/organizations/uganda-national-meteorological-authority-unma-135238
[54] https://www.adaptation-fund.org/documents-publications/operational-policies-guidelines/

system that ensures environmental and social risks are identified and assessed at the earliest possible stage of project/programme design, adopt measures to avoid or where avoidance is impossible to minimize or mitigate those risks during implementation, monitor and report on the status of those measures during and at the end of implementation as well as ensure adequate opportunities for the informed participation of all stakeholders in the formulation and implementation of projects/programmes supported by the Fund.

3.1. Environmental and Social Principles of the Adaptation Fund

To ensure that all projects/programmes supported by the Fund comply with its environmental and social requirements the fund formulated 15 Environmental and Social Principles and all the projects are designed and implemented to meet these principles. However, it is recognized that depending on the nature and scale of a project/programme all of the principles may not be relevant to every project/programme. The Environmental and social principles of the adaptation fund are summarized in Table 5 below:

Environmental and social principles	Details
Compliance with the Law	Projects/programmes supported by the Fund shall comply with all applicable domestic and international law.
Access and Equity	Projects/programmes supported by the Fund shall provide fair and equitable access to benefits in a manner that is inclusive and does not impede access to basic health services, clean water and sanitation, energy, education, housing, safe and decent working conditions, and land rights. Projects/programmes should not exacerbate existing inequities, particularly with respect to marginalized or vulnerable groups.
Marginalized and Vulnerable Groups	Projects/programmes supported by the Fund shall avoid imposing any disproportionate adverse impacts on marginalized and vulnerable groups including children, women and girls, the elderly, indigenous people, tribal groups, displaced people, refugees, people living with disabilities, and people living with HIV/AIDS. In screening any proposed project/programme, the implementing entities shall assess and consider particular impacts on marginalized and vulnerable groups.
Human Rights	Projects/programmes supported by the Fund shall respect and where applicable promote international human rights.
Gender Equality and Women's Empowerment	Projects/programmes supported by the Fund shall be designed and implemented in such a way that both women and men (a) have equal opportunities to participate as per the Fund gender policy (refer to Annex 4 for details); (b) receive comparable social and economic benefits; (b) receive comparable social and economic benefits; and (c) do not suffer disproportionate adverse effects during the development process
Core Labour Rights	Projects/programmes supported by the Fund shall meet the core labour standards as identified by the International Labor Organization.
Indigenous Peoples	The Fund shall not support projects/programmes that are inconsistent with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples.
Involuntary Resettlement	Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids or minimizes the need for involuntary resettlement. When limited involuntary resettlement is unavoidable, due process should be observed so that displaced persons shall be informed of their rights, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation.
Protection of Natural Habitats	The Fund shall not support projects/programmes that would involve unjustified conversion or degradation of critical natural habitats, including those that are (a) legally protected; (b) officially proposed for protection; (c) recognized by authoritative sources for their high conservation value, including as critical habitat; or (d) recognized as protected by traditional or indigenous local communities
Conservation of Biological Diversity.	Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species
Climate Change	Projects/programmes supported by the Fund shall not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change.
Pollution Prevention and Resource Efficiency	Projects/programmes supported by the Fund shall be designed and implemented in a way that meets applicable international standards for maximizing energy efficiency and minimizing material resource use, the production of wastes, and the release of pollutants
Public Health	Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids potentially significant negative impacts on public health.
Physical and Cultural Heritage	Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids the alteration, damage, or removal of any physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level. Projects/programmes should also not permanently interfere with existing access and use of such physical and cultural resources.
Lands and Soil	Projects/programmes supported by the Fund shall be designed and implemented in a way that promotes soil conservation

Conservation	and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services.

3.2 Other International guidelines and Conventions

Other key international guidelines and conventions relevant to the Project include among others:

United Nations Convention on Biological D (UNCBD) 1993 - The Convention on Biological Diversity (CBD) entered into force on 29 December 1993[55]. It has 3 main objectives that include conservation of biological diversity, sustainable use of the components of biological diversity and fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

United Nations Framework Convention on Climate Change (UNFCCC) 1994 - The main objective of the Convention is to stabilize greenhouse gas concentrations "at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system." It states that "such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened[56], and to enable economic development to proceed in a sustainable manner."

United Nations Convention to Combat Desertification 1994 - The United Nations Convention to Combat Desertification (UNCCD), adopted in 1994, is the sole legally binding international agreement linking environment and development to sustainable land management. It aims at combating aims to combat desertification and the ill-effects of drought.

The Paris Agreement **2015-** The Paris Agreement requires all countries—developed and developing—to make significant commitments to address climate change. The Paris Agreement includes a stronger transparency and accountability system for all countries—requiring reporting on greenhouse gas inventories and projections that are subject to a technical expert review and a multilateral examination. Countries will continue to provide climate finance to help the most vulnerable adapt to climate change and build low-carbon economies.

Ramsar Convention 1975 - The mission of the Convention is to conserve and use wisely all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world[57].

CHAPTER FIVE: ENVIRONMENT AND SOCIAL RISK IDENTIFICATION AND DESRIPTION

5.1. Environmental and Social Issues in the Catchment

Key environmental issues that came out from field consultations and literature review include drought, diseases & pests, floods, infertile soils, water scarcity, cutting down trees/deforestation, degradation of wetlands including the Katonga wetland ecosystem for grazing and cultivation of crops, poor/bad roads and vermin.

Key social issues that came out from field consultations and literature review include resources use conflicts especially land issues, selective implementation regulations especially on management of wetlands, access and control of land, limited participation of women in decision making, limited livelihood options and access to finance and credit among others.

5.2. methods environment and social risk identification and desription

The Environmental and Social Policy (ESP) of the Adaptation Fund is meant to ensure that projects supported by the Fund promote positive environmental and social benefits and mitigate or avoid adverse environmental and social risks and impacts. The ESP, in effect since November 2013, require that all AF projects enhance positive social and environmental opportunities and benefits as well as ensure that adverse social and environmental risks and impacts are avoided, minimized, and mitigated.

The ESP has 15 principles to manage unnecessary risks that are put into practice during the development of projects. Among them are compliance with the law, access and equity, marginalized and vulnerable groups,

[55] https://www.cbd.int/intro/
[56] https://unfccc.int/process-and-meetings/the-convention/what-is-the-united-nations-framework-convention-on-climate-change
[57] https://byjus.com/free-ias-prep/ramsar-convention/

human rights, gender equality and women's empowerment, core labour rights, indigenous people, involuntary resettlement, protection of natural habitats, conservation of biological diversity, Climate Change, pollution prevention and resource efficiency, public health, physical and cultural heritage and lands and soil conservation.

The purpose of screening is to identify potential adverse environmental and social impacts and risks early in the project cycle and help in drawing up action plans to mitigate them, as well as to allow for meaningful and inclusive multi-stakeholder consultations and engagement throughout the lifecycle of the project.
The objectives of the identification and evaluation of socio-environmental risk are to:

- Integrate the ESP Principles in order to maximize social and environmental opportunities and benefits and strengthen social and environmental sustainability,
- Identify potential social and environmental risks and their significance; and,
- Determine the level of social and environmental assessment and management required to address potential risks and impacts.

The assessment of socio-environmental risk ensures that throughout project implementation, the project team continuously screens all the activities proposed under the project and monitors potential unintended environmental and social impacts properly and sufficiently as required.

Where risks and potential impacts are identified and if these are unavoidable, suitable mitigation measures will be properly planned to adequately compensate for residual impacts and to provide for restoration. The methodology builds on two key steps:

5.3. Screening to identifying specific environmental and social risks at the project level

Each activity of the project will undergo screening against the 15 Environmental and Social Principles of the Adaptation Funds. *Project Activities Screening in accordance with the AF ESP "* assesses generic activities for potential environmental and social risks. As such impact identification is still rather preliminary and the table below should be understood as indicative. This assessment excludes. This is not applicable to the unidentified Projects that may require further assessment later during project implementation.

Screening of Project Activities in accordance with ESP of the Adaptation Fund

Component/Activity	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
Component 1															
Activity 1.1.1.1 Undertake capacity needs assessment in relation to climate change for key grass root stakeholders		√	√		√										
Activity 1.1.1.2 Induct and empower grass root-duty bearers with knowledge in climate change		√	√		√										
Activity 1.1.1.3 Training in roles and responsibilities of the duty bearers at the grass-roots.		√	√		√										
Activity 1.1.1.4 Facilitate tool kit development for mainstreaming climate interventions in development initiatives		√	√		√						√				
Activity 1.1.1.5 Integrate Climate change issues into the Catchment Management Plan (CMP)											√				
Activity 1.2.1.1 Facilitate the mainstreaming of Human Rights based approaches in climate change initiatives		√	√	√	√										
Activity 1.2.1.2 Facilitate communities in advocacy, lobbying and public relations through creation of dialogue platforms and conducting of climate change campaigns/dialogues.		√	√		√						√				
Activity 1.2.1.3 Facilitate resource use negotiations and development of Management plans, Memorandum of Understanding (MoUs) between the communities and duty bearers of the natural resources.	√	√	√		√				√	√		√		√	
Activity 1.2.1.4 Develop and strengthen the governance and leadership frameworks (By-laws, ordinances, guidelines)	√	√	√		√										
Component 2															
Activity 2.1.1.1 Construct/rehabilitate agreed upon low cost and appropriate physical water storage facilities.	√	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Activity 2.1.1.2 Facilitate development of simple biophysical water harvesting technologies for crop and livestock production	√	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Activity 2.1.1.3 Facilitate construction of micro-irrigation schemes as learning centres	√	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Activity 2.1.1.4 Procure appropriate seed and improved pastures for increased crop and livestock production respectively	√	√	√		√				√	√	√	√	√	√	√
Component 3															
Activity 3.1.1.1 Through collaborative natural resources management approaches, establish nature-based enterprises namely bee keeping,	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

commercial fruits and tree nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass production to enhance both ecosystems and communities' resilience to the impacts of climate change. Establishing bee keeping will be aimed at promoting the conservation of bee habitats; commercial fruits and tree nurseries, mushroom growing, incense sticks production, bamboo and agri-waste biomass will promote restoration hence resilience of catchment ecosystems, whilst improving community livelihoods															
Activity 3.1.1.2 Procure necessary tools to improve productivity of the nature-based enterprises	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Activity 3.1.1.3 Procure viable high value germ plasm	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Activity 3.1.1.4 Establish value chains for bee keeping, tree and fruit nurseries, , mushroom growing, incense sticks production, bamboo and agri-waste biomass production(including production, processing, handling/storage, packaging/ eco-labelling	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Activity 3.1.1.5 Provide inputs for selected vulnerable communities to scale up bee keeping, tree and fruit nurseries, , mushroom growing, incense sticks production, bamboo and agri-waste biomass production.	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Activity 3.1.2.1 Facilitate stakeholders to participate in business forums, trade fairs & exhibitions		√	√		√										
Activity 3.1.2.2 Facilitate business tours and pitches of business plans to the private sector		√	√		√										
Activity 3.1.3.3 Facilitate establishment and operation of a market information systems		√	√		√										
Activity 3.1.3.4 Develop promotional materials for marketing of products		√	√		√										
Activity 3.1.3.1 Facilitate registration of small-scale businesses															
Activity 3.1.3.2 Train entrepreneurs in business management skills		√	√		√										
Activity 3.2.1.1 Undertake ecosystem restoration activities (wetlands and river bank restoration, Forest Landscape restoration, Farm managed natural regeneration, enrichment planting, opening up boundaries of protected areas etc.)		√	√		√	√				√	√	√	√	√	√
Component 4															
Activity 4.1.1.1 Facilitate experience sharing and cross-learning of innovative climate change adaptation interventions		√	√		√										
Activity 4.1.1.2 Organize learning events in climate change adaptation		√	√		√										
Activity 4.1.1.3 Document lessons, good practices and disseminate for replication and up-scaling		√	√		√										
Activity 4.1.1.5 Packaging existing and generated information into usable forms including policy briefs, flyers and leaflets															
Activity 4.1.1.6 Popularize existing frameworks (i.e. policies, Ordinances and by-laws)	√	√	√		√										

KEY:

	No risks generated
√	Risks Identified according to the corresponding AF ES Principle

Checklist of the Adaptation Fund Environment and Social principles-Potential impacts and risks and possible mitigation measures

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts an management
Compliance with the Law	X The project activities will comply with all the relevant National and laws, regulations and standards as well as the relevant international laws and regulations	
Access and Equity		There is a potential risk if selec done. This could be a barrier other stakeholders. To addre consultations and assessme proposal development stage. S groups including the elderly, actions specific to each group the design of the project. This project activities and access t men women, elderly, youth an groups: The project is designed in su benefit from the projects in improved availability of water, well as Income generating a without discrimination. A project Grievance redress m handle any reported issues of benefits
Marginalized and Vulnerable Groups	X The main focus of the project is to increase the resilience of grass root stakeholders mainly the marginalized and vulnerable groups. The females as one of the marginalized and vulneral groups in the catchment are estimated to be 1,524,887 (50.5% of the total catchment population). [58]The proportion of other marginalized and vulnerable groups (and their vulnerabilities) in the catchment that include the youth, elderly, People With Disabilities, as well as the absolute poor (live on less than USD 1 per day) is to be determined at the onset of the project. The project will ensure that at least 50% of the project beneficiaries are representatives of the vulnerable groups. Stakeholder mapping and consultations have ensured that all the marginalized and vulnerable groups in the project area have been identified and incorporated in the project design and this ensured most of their issues in respect to the project have been captured and incorporated. Special attention shall also be given to refugees living in a refugee settlement in Kyegegwa District to ensure that those will participate and benefit from Project activities The total population of refugees in the target settlement of Kyaka is 123,086, of which females and children are 96,702 (79%), the elderly 3,061 (2%) and youth between 12 and 24 years 25934 (21%).. [59] The project monitoring system is also be based on	

[58] UBOS 2014. Statistical Abstract 2014
[59] UNHCR Uganda – Refugee statistics February 2020 -Kyaka II

	desegregated data to enable tracking of the participation by these groups during project implementation.	
Human Rights	**X** The MWE and other executing entities of the project will ensure that the rights of marginalized and vulnerable groups as well as those of other stakeholders are observed. The project is designed to respect and adhere to the requirements of all relevant conventions on human rights. Therefore no further assessment of potential impacts and risks is required for compliance with human rights since the Project is designed to respect and adhere to the requirements of all relevant conventions on human rights. No violation of human rights is envisaged during implementation of this project and the project shall promote the rights of all stakeholders involved in the project.	
Gender Equality and Women's Empowerment	**X** The project design emphasizes gender equity and women empowerment through equal participation of both men and women in project activities. Furthermore, Women will be empowered in decision making through having representation on group management committees for the project investments and enterprises. Some of the key project activities including capacity building in climate smart agriculture practices and development of business plans as well as undertaking of nature -based enterprises including: bee keeping, commercial nurseries for fruits and trees, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of probable Sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, People With Disabilities-PWDs) to scale -up nature-based enterprises will deliberately target women and other vulnerable groups The project monitoring plan as well as the Grievance mechanism shall incorporate gender equity and women empowerment issues such that they are closely followed during project implementation. To emphasize the issues of gender in this project a more detailed assessment focusing on integration of gender issues in project design and implementation been done separately	
Core Labour Rights	**X** MWE will ensure that the project activities will fully comply with relevant National labour laws and regulations as well as ILO labour standards. Contracts under this project shall have clear clauses on compliance with the National labour laws and regulations as well as requirements relating to the safety of workers in accordance with ILO Convention in so far as they are applicable to the project. Activities throughout the project are targeted at reducing inequality and raising gender awareness for gender equality to overcome traditional stereotypes regarding the role of women in society. Positive discrimination in favour of women will be used to provide fair and equal opportunity to women who seek employment as labour and gain from wages earned under this project.	

Indigenous Peoples	X There are no indigenous people in the project area. No assessment is need	
Involuntary Resettlement	X Project activities will not result in involuntary resettlement of households or communities in the project area.	
Protection of Natural Habitats		The rates of forest and wetlan For the period between 2005-2 were deforested and 29,132 h wetlands in the catchment hav mainly under component 3 wil these natural habitats.
Conservation of Biological Diversity		Katonga catchment is known *spekei*) population inhabiting i catchment is also the Katon populations of Waterbucks, Reedbuck among others and Zebras were successfully tran and boost animal populations stands at 300 individuals. The species specific to wetlands, under component 3 will contr thus enhance the conservation
Climate Change	X The main focus of the project is addressing climate change issues and impacts and to ensure that the project activities are focused to the project purpose a fully-fledged Climate Change vulnerability study has been conducted during the design and preparation of the projects full proposal. All the four project objectives of strengthening the capacity of key grass root stakeholders for climate change adaptation, promoting appropriate water storage technologies for increased water and food security, supporting establishment of nature-based enterprises for improved community livelihoods and supporting knowledge management and information sharing are focused on addressing the negative impacts of climate change and enhancing the resilience of communities. None of the activities is envisaged to result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change.	
Pollution Prevention and Resource Efficiency		Activities 2.1.1.1, 2.1.1.2, 2. involve will construction or storage facilities as well as 3.1.1.1, 3.1.1.2, 3.1.1.3 and 3 undertaking of Income Gene commercial fruits and tree nur bamboo and agri-waste biom chains for nature-based ente handling/ storage, packaging/ These will involve activities th pollution as well as resource utilization of water resources a products from nature based en addressed using the project En (ESMP) for the project and fo

		and where necessary additio accordance with the enviro guidelines to ensure complia as well as AF ES principles In addition, sub-projects un committees' weather water or each project are efficiently util
Public Health		Construction activities for wat pollution and stagnant water such as Malaria. Also undertaking of Income Ge commercial fruits and tree nur bamboo and agri-waste biom chains for nature-based ente handling/ storage, packaging a pasture varieties may result addressed through detailed identified screening will be assessments shall be un environmental and social im compliance national laws an principles. In respect to the current preva work hand in hand with other operating procedures from the implementation of project activ
Physical and Cultural Heritage	X Population trends in the Katonga catchment suggests that the population could double by 2040 with more than half of the population below the age of 14. This could pause threats of encroach to cultural and heritage sites such as the Nakayima tree in Mubende district, and Bigo Byamugyenyi in Ssembabule district. Although the project activities shall be undertaken in sub-countes hosting these cultural sites, some of the cross-cutting project activities including environmental education shall promote the conservation of these sites.	Activities
Lands and Soil Conservation	X Soil erosion is extreme in the cattle corridor in the country with predictable erosion rates of over $10 tha^{-1} yr^{-1}$. The recent population explosion outmatches farmers' ability to find arable land with the consequence that continuous tillage is the norm. Most of the Katonga catchment is highly degraded (62%), and only 1% is classified as lowly degraded. Soils will also further be exposed to erosion and contamination during the construction of the water infrastructure. Hence, soil and water conservation is one of the key issues to be addressed by the project especially through activities Activity 2.1.1.2 Facilitate development of simple biophysical water harvesting technologies for crop and livestock production and Activity 3.2.1.1 Undertake ecosystem restoration activities (wetlands and river bank restoration, Reforestation etc.).The project will enhance the conservation of water and soil resources and no further assessment is required in this regard.	

CHAPTER SIX: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

This section presents detailed analysis of the possible environmental and social impacts of the RECOFE project in relation to the social and environmental principles of the adaptation fund that apply to this project. It discusses the probability of risks occurring, anticipated magnitude of impacts and possible mitigation measures.

Principle 1: Compliance with the law

The project activities shall be implemented in compliance within the National laws and regulations as explained in section 2. All relevant laws and regulations and their relevance to the project has been explained and no further assessment of potential impacts and risks is required for compliance with the law. For unidentified sub-projects especially under Activities 2.1.1.1 to 2.1.1.3 Activities under component 2 involving construction or rehabilitation appropriate physical water storage facilities as well as micro-irrigation schemes and Activities 3.1.1.1 to 3.1.1.4 under component 3 involving undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling) the risk screening process should be applied taking into account the adherence of these activities with the national laws and technical standards and further EIA may be required depending on the size and the location of their implementation to determine their impacts and possible mitigation measures.

Principle 2: Access and equity

There is a potential risk if selection criteria of the beneficiaries is not fairly done. This could be a barrier to accessing the benefits and marginalize other stakeholders. In order to address this a detailed stakeholder mapping, consultations and assessments have been undertaken during the proposal development stage. Special focus have been given to vulnerable groups including the elderly, youth and women. Issues and proposed actions specific to each group have been captured and incorporated in the design of the project. This will ensure equitable participation in the project activities and access to project benefits by all groups including men women, elderly, youth and any other vulnerable and marginalized groups. The project is designed in such way that all categories of people shall benefit from the projects interventions including Capacity building, improved availability of water, improved crop and pasture varieties as well as Income generating activities and access to markets equally without discrimination.

After consultations with the stakeholders the following criteria has been proposed to be followed in selecting beneficiary communities and groups;

Criterion 1: Vulnerability.

The most vulnerable groups will be considered, for example, women, youth (boys and girls), Peoples with Disability (PWD) as well as the absolute poor. The vulnerable communities are struggling to survive and therefore, they seek for the closest option. Natural resources are considered open, as such are a culprit.

Criterion 2: Proximity to the fragile ecosystems.

People in the most degraded areas will be targeted because these are frontline people that interact with the fragile ecosystems daily. They are affected and affect the resources. So, it is these communities that own the land or are most responsible for its degradation. In this case community members will be selected to participate in interventions for the natural resources. This approach will help in protecting the resource.

Criterion 3: Resource users.

Even among the communities that are in proximity of the natural resources, it is important to target the resource users. The people using the resources are the best people to restore them as they understand the resource better.

Criterion 4: Gender.

Deliberate effort will be made to ensure that at least 50% of the target RECOFE project beneficiaries are women.

This will be done in consultation with local leaders and sub catchment management committees. For the case of engaging in enterprise development 80% of women and women groups will be targeted by the proposed project.

In addition to applying these criteria to ensure that all people have equitable access to project interventions and benefits there will be sustained and continuous sensitization of all stakeholders to ensure that marginalized and most vulnerable groups will be considered, for example, women, youth (boys and girls), Peoples with Disability (PWD) as well as the absolute poor from the project.
Lastly in case there are few issues that arise regarding access and equity during project implementation, the project has developed a Grievance redress mechanism that shall be followed in handling reported issues of inequality and lack of access to project benefits.

Principle 3: Marginalized and vulnerable groups
The main focus of the project is to increase the resilience of grass root stakeholders mainly the marginalized and vulnerable groups. Detailed stakeholder mapping and consultations have ensured that all the marginalized and vulnerable groups in the project area have been identified and incorporated in the project design. Some of the project activities like capacity building and IGAs are mainly designed to benefit these groups. To ensure equity amongst the groups, there will be deliberate effort to integrate vulnerable and marginalized groups who include women, youth (boys and girls), elderly, refugees and Peoples with Disability (PWD) as well as the absolute poor (live on less than USD 1 per day) to directly benefit from project activities. Activities under component 2 involving construction or rehabilitation appropriate physical water storage facilities as well as micro-irrigation schemes and Activities 3.1.1.1 to 3.1.1.4 under component 3 involving undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling) as well Identification and establishment of probable Sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, People With Disabilities-PWDs) to scale -up nature-based enterprises specifically target these groups in order to increase their employment opportunities and incomes and improve their livelihoods.

The selection of project activities was done after wide consultations with all stakeholders and project beneficiaries in particular vulnerable and marginalized groups including Women, youth, elderly as well as PLWDs and this ensured most of their issues in respect to the project have been captured and incorporated.

Special attention shall also be given to refugees living in a refugee settlement in Kyegegwa District to ensure that those will participate and benefit from Project activities.

The project monitoring system is also based on desegregated data to enable tracking of the participation by these groups during project implementation. Continuous awareness raising about the project target groups and the need to involve the most vulnerable and marginalized groups will also help to alleviate the problem. Any outstanding issues on this can be addressed through the project grievance redress mechanism.

Principle 4: Human rights
The Project is designed to respect and adhere to the requirements of all relevant conventions on human rights in compliance with the ESP. No violation of human rights is envisaged during implementation of this project and the project shall promote the rights of all stakeholders involved in the project. No activities are identified whose execution is not in line with the established international human rights. Project objectives promote basic human rights for fair and equitable access to resources to enhance their resilience to climate change in the beneficiary countries.

Principle 5: Gender equality and women's empowerment
Despite significant progress, the vast majority of women are still subject to gender inequalities in Uganda. They continue to bear a disproportionate burden of poverty and illiteracy; they still have little access to economic resources and opportunities; many women still die in childbirth and are the first victims of the HIV&AIDS pandemic. Few Women own land and have less land tenure security than men. While women can often use land for free for

subsistence farming, as soon as their production generates revenue, men want to highjack the proceeds from them. For activities that are long term like tree and fruit growing and ranching women often need to first seek the consent of their spouses to use the land.

The project design emphasizes gender equity and women empowerment through equal participation of both men and women in project activities. Furthermore, Women will be empowered in decision making through having representation on group management committees for the project investments and enterprises.

Some of the key project activities including capacity building in climate smart agriculture practices and development of business plans as well as undertaking of nature -based enterprises including: bee keeping, commercial nurseries for fruits and trees, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of probable Sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, People With Disabilities-PWDs) to scale -up nature-based enterprises will deliberately target women and other vulnerable groups.

The project-monitoring plan as well as the Grievance mechanism shall incorporate gender equity and women empowerment issues such that they are closely followed during project implementation.

To emphasize the issues of gender in this project a more detailed assessment focusing on integration of gender issues in project design and implementation been done separately.

In addition the projects intends to carry out communication and sensitization of populations on the gender issues to ensure gender equality in access to water resources, improved crop and animal appropriate seed and improved pastures for increased crop and livestock production, nature based income-generating activities and strengthening representation of women and youth on project management committees as well as raising awareness on the use of the project grievance redress mechanism to solve issues.

Principle 6: Core labour rights

There is a potential risk for especially for Activities under component 2 involving construction or rehabilitation appropriate physical water storage facilities as well as micro-irrigation schemes and Activities 3.1.1.1 to 3.1.1.4 under component 3 involving undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling). These activities shall involve the use of local labour especially during the construction Phases of the different projects. MWE will ensure that the project activities will fully comply with relevant National labour laws and regulations as elaborated in section 2 well as ILO labour standards. Contracts under this project shall have clear clauses on compliance with the National labour laws and regulations as well as requirements relating to the safety of workers in accordance with ILO Convention in so far as they are applicable to the project. Activities throughout the project are targeted at reducing inequality and raising gender awareness for gender equality to overcome traditional stereotypes regarding the role of women in society. Positive discrimination in favour of women will be used to provide fair and equal opportunity to women who seek employment as labour and gain from wages earned under this project. All stakeholders including workers and populations should be sensitized about the risks related to the activities to be undertaken activities.

In addition, emphasis should be put on giving the local people the first priority for activities they can manage, ensuring that adequate safety measures are in place, timely payments for services offered, non-discrimination on basis of sex, tribe while employing workers and a defined grievance redress mechanism for handling workers as well as a robust monitoring and evaluation system to ensure that these provisions are being implemented.
For USPs risk screening process should be applied considering the adherence of these activities with the national laws and technical standards and further EIA may be required depending on the size and the location of their implementation to determine their impacts and possible mitigation measures.

Principle 7: Indigenous people:

There are no indigenous people in the project area. No further assessments are needed.

Principle 8: Involuntary resettlement:
The project will not result in involuntary resettlement of communities in the project area in regard to eviction or people involuntarily leaving their homes or even losing their land use rights. However, there is a risk that construction work under component 2 could cause damage or temporary inconvenience to people living in the areas (both beneficiaries and non-beneficiaries) and as such the risk cannot be assessed since they are Unidentified Sub-Projects (USP) at this stage. For these USPs risk screening process should be applied considering the adherence of these activities with the national laws and technical standards and further EIA may be required depending on the size and the location of their implementation to determine their impacts and possible mitigation measures.

Principle 9: Protection of Natural Habitats:
The rates of forest and wetland degradation in the catchment is high. For the period between 2005-20010, at least 70,065 hectares of forests were deforested and 29,132 hectares were degraded. Over 53% of wetlands in the catchment have been degraded. The project activities mainly under component 3 will lead to restoration and protection of these natural habitats.

Under Conservation of Biological Diversity, the text has been edited as follows
Principle 10: Conservation of biological diversity:
:. Katonga catchment is known to have viable Sitatunga (*Tragelahpus spekei*) population inhabiting in the Katonga wetland system. Within the catchment is also the Katonga Wildlife Reserves that habours high populations of Waterbucks, Hippos, Elephant, Buffalo, Bushbuck, Reedbuck among others and Birds. In 2015, about 60 impalas and 5 Zebras were successfully translocated to the reserve in order to restock and boost animal populations for tourism. The population of Impalas now stands at 300 individuals. The current bird checklist is over 150 including species specific to wetlands, savannah and forests. Project activities under component 3 will contribute to restoration of these habitats and thus enhance the conservation of biodiversity

Principle 11: Climate change:
The main focus of the project is addressing climate change issues and impacts and to ensure that the project activities are focused to the project purpose a fully-fledged Climate Change vulnerability study has been conducted during the design and preparation of the project's full proposal. All the four project objectives of strengthening the capacity of key grass root stakeholders for climate change adaptation, promoting appropriate water storage technologies for increased water and food security, supporting establishment of nature-based enterprises for improved community livelihoods and supporting knowledge management and information sharing are focused on addressing the negative impacts of climate change and enhancing the resilience of communities. All project activities are in line with the National climate change policy and strategic plan, NDC and priorities defined in the NAPA. Apart from likely changes in land use due to the field clearing to construct Water infrastructure and associated irrigation systems that may result in a slight decrease in sequestration capacity of the environment none of the activities is envisaged to result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change. But still this decrease in vegetation shall be offset through restoration activities. Where there is need for pumping use of Solar power or HEP shall be encouraged. The project approach of raising awareness on the impacts of climate change and sharing of lessons learnt and success stories as well as building the capacity of key stakeholders to undertake climate change focused adaptation interventions will have a significant impact in addressing climate change issues in the catchment and the country at large.

Principle 12: Pollution prevention and resource efficiency:
Activities 2.1.1.1 to 2.1.1.3 Activities under component 2 will involve l construction or rehabilitation appropriate physical water storage facilities as well as micro-irrigation schemes. Also Activities 3.1.1.1, to 3.1.1.4 under component 3 shall involve undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling). These will involve activities that will bring about potential water and air pollution as well as resource use efficiency issues during pumping and utilization of water resources as well as value addition processes for the

products from nature-based enterprises Construction activities for water infrastructure may also cause air and water pollution and stagnant water in storage facilities may pose health risks such as Malaria. Project activities are not anticipated to generate sizeable amounts of waste. The waste that will be generated during construction and processing of products form IGAs can easily be handled.

Some of these issues shall be addressed using the project Environmental and Social management plan (ESMP) for the project while for any USP identified, screening will be done and where necessary additional assessments shall be undertaken in accordance with the environmental and social impact assessment guidelines to ensure compliance with national laws and technical standards as well as AF ES principles.

Also, sub-projects under the project shall have management committees' whether water or under IGAs to ensure that resources under each project are efficiently utilized. Capacities of these committees shall be built to ensure efficient resource utilization and to minimize or avoid pollution. The use of chemical fertilizers and pest control will not be encouraged or supported by the project, but instead manure, compost and organic pest control remedies will be promoted.

In respect to the current prevailing COVID19 pandemic the PMU shall work hand in hand with other stakeholders to ensure that the standard operating procedures from the Ministry of health are adhered to during implementation of project activities.

Principle 13: Public Health:
Construction activities for water infrastructure may cause air and water pollution and stagnant water in storage facilities may pose health risks such as Malaria due to mosquitoes that hide in the stagnant water or cholera if consumed when it's not boiled or treated. Also, the process of handling agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging as well as introduction of improved crop and pasture varieties may result in public health issues especially as a result of pollution and food poisoning due to afro-toxins. These shall be addressed through awareness raising and capacity building of project beneficiaries to take all precautionary measures like to avoid water pollution and contamination, having the relevant PPE while undertaking processing and proper post-harvest handling of products from IGA activities, ensuring as well as treating or boiling the water before consumption. These shall be addressed through detailed measures in the ESMP and for USPs screening will be done and where necessary additional assessments shall be undertaken to in accordance with the environmental and social impact assessment guidelines to ensure compliance national laws and technical standards as well as AF ES principles.

In respect to the current prevailing COVID19 pandemic the PMUs shall work hand in hand with other stakeholders to ensure that the standard operating procedures from the Ministry of Health are adhered to during implementation of project activities.

Principle 14: Physical and cultural heritage:
Population trends in the Katonga catchment suggests that the population could double by 2040 with more than half of the population below the age of 14. This could pause threats of encroach to cultural and heritage sites such as the Nakayima tree in Mubende district, and Bigo Byamugyenyi in Ssembabule district. Although the project activities shall not be undertaken in sub-counties hosting these cultural sites, some of the cross-cutting project activities including environmental education shall promote the conservation of these sites.

Principle 15: Land and soil conservation:
Soil erosion is extreme in the cattle corridor in the country with predictable erosion rates of over $10 tha^{-1} yr^{-1}$. The recent population explosion outmatches farmers' ability to find arable land with the consequence that continuous tillage is the norm. Most of the Katonga catchment is highly degraded (62%), and only 1% is classified as lowly degraded. Soils will also further be exposed to erosion and contamination during the construction of the water infrastructure. Hence, soil and water conservation is one of the key issues to be addressed by the project especially through activities Activity 2.1.1.2 Facilitate development of simple biophysical water harvesting technologies for crop and livestock production and Activity 3.2.1.1 Undertake ecosystem restoration activities (wetlands and river bank restoration, Reforestation etc.). The project will enhance the conservation of water and soil resources and no further assessment is required in this regard..

5.2. Unidentified Sub-Projects (USP) Impact Assessment and Risk Management

5.2.1. Procedures for identification and validation of USPs

During implementation, in the event any USP is identified, more detailed E&S assessment will be conducted to identify activity-specific E&S management measures that need to be incorporated into the specific project. The process will be governed by the Risk Management Procedure of the AF; AFB.B32 33.7 Compliance with ESP update of PRR, and guidance for USPs-revised; the National Environment Act 2019 and as well the National Environment (Environmental and Social Assessment) Regulations, 2020.

5.2.2. Compliance with Adaptation Fund policies

All activities implemented under the USPs modality will adhere to the Adaptation Fund Environmental and Social Policy (AF ESP), revised in March 2016, which sets out the requirements for Implementing Entities (IEs) to assess and manage environmental and social risks in project implementation. The AF ESP defines the E&S Principles that AF projects abide by. The AF ESP defines that IEs shall adopt measures to avoid, or where avoidance is impossible to minimize or mitigate those risks during implementation.

Any USP identified and implemented in the RECOFE project shall be screened according to the 15 Principles of the Environment and social policy of the adaptation fund for those that apply and covering all the USP projects' activities to ensure that appropriate mitigation measures are proposed for any negative.

5.3. Adherence to National Policies, Laws and Technical standards

Equally to the compliance with the AF ESP and other International laws and policies, the RECOFE project is compliant with national laws, and adheres to all National Technical Standards that are applicable to the project. As such, all activities implemented as USPs will comply with these laws and standards.

The relevant laws and standards for USPs are listed in Section 2. Any USP identified and implemented in the RECOFE project will, without exception, comply with the identified national laws and technical standards Uganda.

According to the National Environment Act 2019 and the National Environment (Environmental and Social Assessment) Regulations, 2020 a Project briefs shall be prepared for all identified USPs and submitted to the Executive Director for NEMA for review. After review any of the three scenarios may hold:

a) *If the executive director finds that the project will have significant impacts on the environment and that the project brief discloses no sufficient mitigation measures to cope with anticipated impacts, he or she shall require that the developer or MWE undertakes an environmental impact study.*
b) *If the executive director is satisfied that the project will have no significant impact on the environment, or that the project brief discloses sufficient mitigation measures to cope with the anticipated impacts, he or she may approve the project or*
c) *Where the executive director approves the project under sub regulation (2) of the National Environment (Environmental and Social Assessment) Regulations, 2020 regulation, he or she shall issue a certificate of approval on behalf of the authority in the form provided in the Second Schedule to these Regulations*

In case it is decided that a study has to be undertaken, the following steps shall be undertaken:
Scoping - Scoping help to determine the extent and approach of the EIA at an early stage in the planning process.
Terms of Reference for an ESIA - Based on the findings from scoping, project management shall prepare ToR and submit to NEMA and other relevant Lead Agencies for review and approval before the EIS study is conducted.
Conducting Environmental Impact Study – This involves carrying out a detailed study of the key impacts according to the scoping report and ToR. The EIA Study is done according the National Environment Act 2019 and ESIA Regulations 2020.
Reporting - After the detailed study an ESIA report is prepared including Environmental and Social Management Plan that is followed in project design and implementation to ensure that mitigation measures are followed.
Environmental Monitoring-environmental monitoring is done in order to ensure that recommended mitigation measures are being implemented to plan and to ensure that the unforeseen ones are being addressed as well.
Environmental Audit – The National Environmental and social Impact Assessment Regulations 2020 and Audit

regulations 2020, require that after the first year of operation, the developer must undertake an initial environmental audit. The purpose of the audit is to compare the actual and predicted impacts, and assess the effectiveness of the EIA, as well as its appropriateness, applicability and success.

CHAPTER SEVEN: ENVIRONMENTAL AND SOCIAL RISK MANAGEMENT PLAN AND MEASURES IN LINE WITH THE AF ESP

7.1. Environmental and Social Management Plan (ESMP)

Environment and Social Management Plan

ES Principles checklist	Potential impacts	Mitigation measures	Indicators	Responsible Persons	Cost (USD)
16. Compliance with the Law	Most of the project activities will comply with all the relevant National and laws, regulations and standards as well as the relevant international laws and regulations. However for activities 2.1.1.1 to 2.1.1.3 under component 2 that will involve construction or rehabilitation of appropriate physical water storage facilities as well as micro-irrigation schemes as well as Activities 3.1.1.1, to 3.1.1.4 under component 3 that will involve undertaking of Income Generating Activities (IGAs) like bee keeping, commercial fruits and tree nurseries, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of value chains for nature-based enterprises (including production, processing, handling/ storage, packaging/ eco-labelling there will be USPs that may require EIA depending on the size and the location of their implementation to determine their impacts and to comply with national and international standards , laws and regulations	• For the fully identified project activities, there is no need for mitigation measures since they generate no risks. • The assessment of the risks related to the USPs will be ensured according to the Unidentified Sub-Projects (USP) methodology of Impact Assessment and Risk Management detailed above and for those that require detailed assessments they will be conducted to ensure compliance with the national and international standards, laws and regulations.	No of screening and EIA reports for USPs	MWE-PMU, DEOs, DNROs, DAOs and DPOs Contractors	Cost Incorporated in the total project cost.

17. Access and Equity	• Vulnerable groups including the elderly, youth and women likely to miss out of the project activities and accessing benefits due to dominance by men and other well positioned decision makers • Access and ownership of land and other related resources including finance is limited for Women, youth and other vulnerable groups and this may limit their participation, opportunities and benefits from project activities especially agricultural based activities and those that need reasonable amounts of money to start up like IGAs.	• A detailed stakeholder mapping, consultations and assessments have been undertaken during the proposal development stage • Issues and proposed actions specific to each group have been captured and incorporated in the design of the project to ensure equitable participation in the project activities and access to project benefits by all groups including men women, elderly, youth and any other vulnerable and marginalized groups without discrimination • Develop a beneficiary's selection criteria taking care of all categories of people including women youth, elderly, PLWDs and other vulnerable and marginalized groups • For groups with limited access to land they will be encouraged and targeted for activities that do not need a lot of land such as mushroom growing, beekeeping among others • The project also has an activity focusing on identifying and establishing sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, People With Disabilities-PWDs) to scale -up nature-based enterprises activities that do not need a lot of land • A project Grievance redress mechanism shall also be developed to handle any reported issues of inequality and lack of access to project benefits • Close monitoring of the project beneficiaries to assure equal	• Reports of stakeholder mapping and consultations including lists • Documented criteria for selection of beneficiaries No of selection criteria agreed • No of vulnerable people accessing credit to undertake project activities • No of beneficiaries with no land or limited access to land activities and other resources • Presence of a functional grievance redress mechanism • No of complaints handled through the GRM	MWE-PMU, DEOs, DNROs, DAOs and DPOs Contractors	Cost incorporated in the total project cost

		access of men; women, youth and the most vulnerable			

18. Marginalized and vulnerable groups	• Marginalized and Vulnerable groups including the elderly, youth and women likely to miss out of the project activities and accessing benefits due to dominance by men and other well positioned decision makers who may take up all the available project opportunities • Limited or no access to land other resources may affect the ability of the marginalized and vulnerable groups to participate and benefit from project activities • Limited knowledge and awareness about the project about the project, its activities and benefits	• Marginalized and vulnerable groups will be deliberately targeted right from the project design to ensure that they participate and benefit from project activities. A beneficiary's selection criteria with positive bias towards these groups will be developed. • Marginalized and vulnerable groups people who do not have land will be given priority for access to other project activities such as IGAs, beekeeping, mushroom growing etc. that do not require a lot of land to undertake • Conduct awareness raising campaigns about the project and possible benefits targeting all categories of people using broad cast media and IEC materials in local languages to ensure that all the target communities understand • The project team and partners will also closely monitor the targeting of all project beneficiaries to ensure equal access of men, women youth and the most vulnerable	• No of Marginalized and vulnerable groups and individuals participating and benefiting from project activities • No of marginalized and vulnerable groups and individuals with limited access to land other resources participating and benefiting from IGAs • No of awareness raising sessions about the project conducted	MWE-PMU, DEOs, DNROs, DAOs and DPOs	• Cost incorporated in the total project cost

19. Human rights	Most of the project activities do not generate risks related to human rights. However, for activities that will involve construction and for IGAs that may require additional labour to undertake, there may be issues arising from treatment of workers by the project Contractors	Contractors and other employees shall be sensitized and obliged to observe the human rights of their workers as well as the guidance provided by the employment Act, Workers compensation Act, Occupational health and safety Act and other relevant local and internationals laws and regulations. • The Project Grievance redress mechanism shall also be used to resolve any human right issues that may arise.	• No of awareness raising sessions conducted for contractors • No of human rights complaints handled using the Project Grievance redress mechanism		

20. Gender Equality and Women empowerment	• Limited participation of Women and youth groups in project activities due to low representation and lack of land and other resources • Limited benefits accruing to Women, youth and disadvantaged groups	• A Gender Assessment and Action Plan have been developed to ensure that gender issues and women are meaningfully integrated and engaged in project activities and realize an equitable share of project benefits • The project has been intentionally designed to emphasize gender equity and women empowerment through equal participation of both men and women in project activities • Women will be empowered at the start and during project implementation in decision making through having representation on group management committees for the project investments and enterprises. • Some of the key project activities including capacity building in climate smart agriculture practices and development of business plans as well as undertaking of nature -based enterprises including: bee keeping, commercial nurseries for fruits and trees, Mushroom growing, incense sticks, bamboo and agri-waste biomass as well as establishment of probable Sources of funding (in-kind and credit) for vulnerable communities (women, elderly, youth, People With Disabilities-PWDs) to scale -up nature-based enterprises will deliberately target women and other vulnerable groups. This will enhance their access to finance and enable them to generate income, contributing	• An operational Gender Action plan for the Project in place • Percentage of Women on Enterprise management committees for the different enterprises • Percentage of women involved in IGAs • Percentage of Women accessing credit either in kind or cash to undertake project activities/IGAs (micro-credit) • Project Reports with Gender segregated data. • No of complaints handled through the GRM	MWE-PMU, DEOs, DNROs, DAOs and DPOs	Cost incorporated in the total project cost

		directly to their financial empowerment • The project monitoring plan as well as the Grievance mechanism shall incorporate gender equity and women empowerment issues such that they are closely followed during project implementation. • Project Reports to emphasize Gender segregated data. • Communication and sensitization of the population on the gender issues to ensure gender parity in USPs and all project activities • A Project Grievance redress mechanism to handle all issues arising during project implementation			

21. Core labour rights	• Activities 2.1.1.1 to, 2.1.1.3 under component 2 will involve construction or rehabilitation of appropriate physical water storage facilities as well as micro-irrigation schemes and Activities 3.1.1.1 to 3.1.1.4 under component 3 will involve undertaking of Income Generating Activities (IGAs) that may require hiring of additional labour depending on the scale at which the IGA is being undertaken. These may lead to accidents and occupational hazards during the project preparation and implementation. • Violation of existing labour laws and conventions including late or no payments, harsh working conditions and exploitation of workers, child labour, discrimination based on sex among others and general non- compliance with the National and international labour legislations and laws • Transmission of sexually transmitted diseases like HIV/AIDS especially during construction of Water infrastructure due to movement of workers from one area to another.	• Ensure that the Contractors for construction works and operators of IGAs on medium scales have site health and safety as well as emergency plans including risk assessment procedures and signage to reduce accidents • Sensitize Contractors, workers and proprietors of medium size IGAs on occupational health and safety procedures, employment and Workers compensation Acts to ensure that they meet the national and international standards, laws and guidelines • Provide workers with protective clothing (nose and mouth masks, ear muffs, overalls, industrial boots and gloves) and helmets as applicable and training them in their usage • Ensure that each site has a trained first Aiders and adequate first Aid Boxes to handle site emergencies • Ensure workers are paid Salaries in time and in line with the best common practices in the districts and villages; • Regular monitoring of all worksites by the PMU and District Environment officers to ensure compliance with the applicable national and international laws and standards • Contracts under this project shall have clear clauses on compliance with the National labour laws and regulations as well as requirements relating to the safety of workers in accordance with ILO Convention in so far as they are applicable to the project.	• No of training sessions for workers and contractors on health and safety measures for construction sites • No of participants to these sessions and gender distribution Percentage of companies that comply with safety standards • Percentage of workers equipped with protective gear • Compliance monitoring reports	MWE-PMU, DEOs, DNROs, DAOs and DPOs Contractors	Cost incorporated in the total project cost

		• Positive discrimination in favor of women will be used to provide fair and equal opportunity to women who seek employment as labour and earn wages under this project • Sensitize local communities and workers on dangers of HIV/AIDs, and provide free condoms.			
22. Indigenous people	There are no indigenous people in the project area so no impacts and no mitigation measures are required				
23. Involuntary resettlement	Project activities will not result in involuntary resettlement of households or communities in the project area				
24. Protection of natural habitats	• Encroachment on Katonga Wildlife reserve and Forest reserves within the Katonga river catchment. • Clearance of vegetation from sites for water infrastructure and irrigation systems development may affect natural habitats • Destruction of vegetation and compaction of soils by labour concentration of labourers and compaction of soil by construction equipment • Danger of fires especially those undertaking apiary/beekeeping	• Efforts shall be undertaken to ensure that the project activities do not encroach on the Katonga Wildlife Reserve and other forest reserves within the catchment through awareness raising on the importance biodiversity conservation ensuring that laws and regulations • Comprehensive site assessment shall be done to ensure that water infrastructure and irrigation systems are not located in sensitive habitats and mitigation measures to limit impacts proposed. • Vegetation clearance shall be limited in scope as much as possible to only those areas that are necessary to enable construction to limit the environmental foot print. • Ensure that construction work is done in the shortest time possible to limit the environmental foot print of the labourers and construction machinery.	• Site assessment reports with possible mitigation measures • No of awareness sessions on the protection of biodiversity and ecosystems • No of people sensitized by gender • Monitoring reports including status of water infrastructure sites	MWE-PMU, DEOs, DNROs, DAOs and DPOs Contractors	Cost incorporated in the total project cost

		• Avoid unnecessary movement of construction machinery. • Follow-up of implementation of activities related to protection and management of ecosystems/ natural habitats; • Establishment of E&S Impact Assessment Studies; • Sensitization sessions to local communities on good environmental practices and the protection of natural habitats • Clearly demarcating the boundaries of the Wildlife reserve and the forest reserves within the catchment. • Training in proper honey harvesting methods and provision of improved harvesting equipment.			
25. Conservation of biological diversity	• Vegetation clearance for water harvesting and storage sites and irrigation systems will result in loss of biodiversity on those sites • Opening up of new lands for agriculture may also lead to vegetation loss • Appropriate seed and improved pastures for increased crop and livestock production may turn out be invasive	• Vegetation clearance should be minimized as much as possible. Only the areas required for siting the infrastructure facilities should be cleared. • Selection of proposed construction site areas should try as much as possible to avoid sensitive habitats that have high diversity of indigenous plants; • Offset planting should be undertaken where sizeable areas of biodiversity are to be cleared • Opening up of virgin lands for agriculture expansion should be discouraged where possible and improved land management practices promoted to improve the productivity of the existing agricultural lands. • Standards should be followed and relevant technical advice sought to ensure that the crop	• Sessions/trainings for Contractors on sustainable Environment/biodiversity conservation. • Site selection reports and criteria for site selection of sites • Acreage of offset planting done • No of trainings conducted and people trained in improved land management practices • No of training sessions in species selection • Species verification reports	MWE, DAOs, DEOs & DFO Contractor	Cost incorporated in the total project cost

		and pasture species introduced are not invasive.			
26. Climate change	• The project activities do not generate risks related to climate change	• The project activities do not generate risks related to climate change so there are no mitigation measures to plan; • The main focus of the project is addressing climate change issues and impacts and to ensure that the project activities are focused to the project purpose a fully-fledged Climate Change vulnerability study has been conducted during the design and preparation of the project's full proposal. All the four project objectives of strengthening the capacity of key grass root stakeholders for climate change adaptation, promoting appropriate water storage technologies for increased water and food security, supporting establishment of nature-based enterprises for improved community livelihoods and supporting knowledge management and information sharing are focused on addressing the negative impacts of climate change and enhancing the resilience of communities. None of the activities is envisaged to result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change			
27. Pollution prevention and resource efficiency	• There is potential of water contamination in the storage reservoirs or irrigation systems • Over use or un regulated usage of the water resources	• Ensure establishment of water management committees to ensure regular maintenance of water sources and irrigation systems reducing changes of contamination. • Ensure regular quality control checks and monitoring to detect	• Functional water management committees in place • Water quality assessment Reports • Water abstraction/use Reports	MWE, District Water Officer	Cost incorporated in the total project cost

		and address any sources of pollution and contamination. Regular sensitization on water source protection and maintenance • Ensuring regulated use of water resources through enactment of bylaws	• By-laws regulating water use in place.		
28. Public Health	• The water storage facilities that will be constructed during the project may act as a source of water or vector-borne diseases such as malaria in cases where mosquitoes hide in stagnant water points or cholera where people may take water without treatment/boiling • High concentration of workers at Water infrastructure construction sites during the construction could increase the risk of spread of sexually transmitted diseases (STD) especially that most vulnerable members of communities. • Potential risks to safety of persons and animals around the dams/tanks	• Sensitize communities and other stakeholders on water treatment and control of water borne • Sensitize workers and community members on HIV/AIDS prevention and control and provide. • Give priority to workers in the project sites to avoid migration of workers • Ensure fencing is done around the Water tanks/dams to ensure safety of people and animals • Ensure the workers and Local people construction, maintaining/cleaning the tanks and reservoirs have appropriate PPE	• No of sensitization meetings on water treatment and control of water borne diseases Number of participants in these sessions by Gender • No. of HIV/AIDS sensitizations conducted • No of people sensitized and condoms distributed • No. of people supplied with adequate PPE • No. of dams/tanks fenced off	MWE, District Water Officer, Contractor' EHS Officer ,DEOs	Cost incorporated in the total project cost
29. Physical and cultural heritage	• There is a possibility of encroachment of Katonga Wildlife Reserve or other forest reserves either accidentally or intentionally especially for agricultural purposed that may endanger cultural resources • Danger of fires especially those undertaking apiary/beekeeping	• Creating awareness on the need to conserve cultural resources • Clearly demarcating the boundaries of the Wildlife reserve and the forest reserves within the catchment. • Training in proper harvesting methods and provision of improved harvesting equipment	• Number of awareness campaigns conducted • Length of boundaries clearly demarcated • Number of trainings in improved honey harvesting techniques • No and types of honey harvesting equipment procured and distributed	MWE, UWA, NFA DAOs, DEOs & DFO	Cost incorporated in the total project cost.

30. Soil and land conservation	• Construction activities including construction/rehabilitation of low cost and appropriate physical water storage facilities and construction of micro-irrigation schemes as learning centers as well as agricultural activities may lead to soil exposure, erosion and compaction.	• Ensuring all exposed areas during construction are restored using grass or trees • Training project beneficiaries involved in agriculture activities/enterprises in sustainable soil and water conservation measures.	• Acreage of exposed or cleared areas restored • Number of trainings in soil and water conservation conducted • Number of beneficiaries trained in soil and water conservation	MWE DAOs, DEOs & DFO	Cost incorporated in the total project cost

CHAPTER EIGHT: PROJECT GRIEVANCE REDRESS MECHANISM

This Project GRM has been developed in line with the Ministry of Water and Environment – Grievance Redress Mechanism 2018 ,the eight internationally accepted principles for the design of grievance mechanisms as elaborated by the UN (UN Human Rights Council, 2011) that include Legitimate, Accessible, Predictable, Equitable, and Transparent and Rights compatible, enabling continuous learning and engagement and dialogue as well as the Ad Hoc Complaint Handling Mechanism (ACHM) of the adaptation fund. The purpose of this Grievance Redress Mechanism is to provide people that shall be affected by the Project activities with an independent mechanism through which their complaints and issues can be addressed. It is intended to resolve problems in an efficient, timely and cost-effective manner in a cordial environment with the participation of all stakeholders including affected parties.

8.1. The Structure of the Grievance Redress Mechanism

This Project Grievance Redress Mechanism shall consist of Grievance Redress committees at two levels. One will be at Project sites with the Team Leader of the Water Management Zone (WMZ) as the Chairman of the Committee (GRC). The GRC at this level will be constituted of the following members:

1. WMZ – Team Leader – Chairman
2. LC V Chairperson – Member
3. Project/Program Manager – Secretary,
4. Contractor – Member
5. LC 111 – Chairman-Member
6. Community Representative
7. Representative of a local CBO or NGO/ Religious Leader operating in the area

The representative from the Organization operating in the area and the Community representative shall serve as non-permanent members.

The second committee will be at the MWE level. At the Ministry Level, the GRC will be housed in the Directorate of Environmental affairs with the following as the permanent members appointed by the Permanent Secretary:

1. Commissioner – Department of Environment Support Services – Chair,
2. Assistant Commissioner Environment Affairs (Monitoring, Compliance, Assessment, and Education) – Member
3. Principal Sociologist (Water sector Liaison Department) – Member
4. Principal Environment Officer (Monitoring and Compliance) – Member
5. Project/Program Manager – Secretary
6. Community Representative
7. Representative of a local CBO or NGO/ Religious Leader

The Manager of any of the projects or Programs will be the secretary to the committee, at the time issues and complaints from his project or program are being addressed. The Committee members are mandated to carry out such functions as may be allocated to them, and to support the Grievance Redress committee in discharging its functions as stipulated in the TORs.

Consistent with the TOR of the committee the GRC may develop and issue Supporting Operating Procedures (SOPs) for the GRM to facilitate easy implementation and to ensure the effective and efficient operation of the GRM.

8.2. Functions of the Grievance Redress Committees (GRC)

The Grievance Redress Committee is mandated to address grievances and complaints by a person, a group of persons or a community who/which have been or may be adversely impacted by a project or program being implemented or supported by the Ministry of Water and Environment through problem-solving methods and/or compliance review, as appropriate ,to initiate proceedings on its own to investigate grievances of a person, a group of persons or a community who/which have been or may be adversely impacted by a project or program implemented or supported by the Ministry of water and Environment as well as monitoring whether decisions taken by the Director/PS based on recommendations made by Grievance Regress Committee, or agreements reached relating to grievances and complains through problems solving methods, have been implemented.

8.3. Implementation Approach

The GRM shall be given a wide publicity among all these key stakeholders. Effective awareness of GRM process makes people better understanding about their options, depending on the types of complaints. Criteria for eligibility need to be communicated and awareness campaigns should be launched to give publicity to the roles and functions of the GRM. Awareness shall include the following components:

- Scope of the project, planned phases, and activities etc.;
- Availability of GRM and GRC, their purpose and their accessibility;
- Eligible complaints that can be lodged and how they can be lodged
- Types of grievances not acceptable to the GRM.
- Members of GRC and its location
- Method of complaining or reporting the grievance
- Taking part in the GRC meeting (is any companions of the complainant allowed)
- The steps of resolving process and timeline adopted in this mechanism.
- Needed documents and evidence to support of the complaint
- Procedures and time frames for initiating and concluding the grievance redress process; boundaries and limits of GRM in handling grievances; and roles of different agencies such as project implementer and funding agency.

A variety of methods can be adopted for communicating information to the relevant stakeholders.
This information shall be part of a simple brochure explaining the different grievance redress possibilities for affected persons. Other methods may include display of posters in public places such as in government offices, project offices, community centers, hospitals and health clinics of the area.

8.4. Stages for MWE Grievance Redress Mechanism

A two-stage (Step 1 and Step 2) GRM will be designed and implemented for each MWE project or program. Accordingly, two (2) GRCs will be appointed for these two stages as described in 1.5 above. **Step 1 GRC** will be given four (4) weeks' time to address any ground level issue. Any issue which cannot be addressed at this stage will be referred to **Step 2 GRC** within 07 days after conclusion of business **at step 1** with a full report comprising suggestions and observations of **Step 1 GRC** for review.

8.4.1. Step 1 GRC

- There shall be two focal points one at the field level project office and one at the sub-county community development office of the Sub-county in which the Project is located. Where the project covers more than one Sub-county all CDO offices of the benefiting sub-counties will be liaison offices especially for receiving complaints and grievances as well as communicating feedback to the complainants.
- In addition to the above designated offices the public shall submit their complaints to one selected CBP/NGO operating in the project/program area that shall be agreed upon by all stakeholders. This is intended to ensure that people who have complaints and clarifications are able to submit them for processing and feedback.
- Considering the importance of efficient functioning of **GRM, Step 1 the GRC** shall be expected to resolve complains within three weeks after receiving them. This stage is expected to benefit from the proximity of most of the members of GRC that involves the team leader, Project Manage, supervising consultant, contractor as well as other members of the committee who are locally based to resolve the issue at site and avoid or minimize any delays in rectifying the problem.

The timeframes are as follows:
All the receiving points – the Project site office OR Sub-county CDO office OR the selected CBO/NGO office shall inform the Chairman of Step 1 GRC with a full report within 3 working days from receipt of a grievance or complain.

GRC meetings will be held at the Project/program site office within at least 12 days after receiving and verifying the complaint/grievance and the affected persons who has lodged complaints will be invited for the GRC meeting. The affected persons will be informed about the GRC, five days prior to its meeting. However, the GRC meeting shall be held in public if required.

GRC meetings will be held at Projects site office and APs who has lodged complaints will be invited for the GRC meeting. The APs will be informed about the GRC, seven days prior to its meeting. However, GRC meetings could be held in public if required.

Secretary of GRC is requested to coordinate with all relevant parties to get necessary information. In addition to that the secretary should keep records of all complaints, reports.

At the stage of GRC meeting all complaints should be in written form. If the issue is resolved at Step 1 GRC, the decision/resolution shall be documented in a report by the secretary, signed by all committee members and communicated to all stakeholders within 5 days after the GRC meeting.

If the issue cannot be resolved at this level then a report should be written and sent to Step 2 GRC within 5 days after the meeting of step 1 GRC.

Committee meetings will be convened by the Secretary of Step 1 GRC who is the Project Manager. The chairman of Step 1 GRC is expected to take appropriate action with the consultation of other committee members within the given a three weeks' time and to inform the affected persons accordingly.

8.4.2. Step 2 GRC

The issues that could not be resolved by Step 1 GRC, will be forwarded to Step 2 GRC within five days (working days) of the final decision of Step 1 GRC. Step 2 GRC.

The main objective of Step 2 GRC is to review the issues in a policy point of view within 10 days after receiving the report and to take appropriate policy measures to overcome such issues. Accordingly, Step 2 GRC is requested to convey its decisions to Step 1 GRC and other relevant parties within four (4) weeks' time from the date of receiving issues from Step 1 GRC without further delay to take immediate actions. (Step 1 GRC - 4 weeks + Step 2 GRC 4 - weeks = 8 weeks).

8.5. Detailed Implementation Steps

The steps outlined below are critical to the success of any GRM are indicated Figure 11 below.

Grievance Redress Value Chain

The process of implementing a GRM involves the following steps,
Step 1: Decide on Focal offices
Step 2: Receive and register complaints.
Step 3: Screen and refer the complaints.
Step 4: Coordinate with other GRMs/ agencies (if required).
Step 5: Assess the complaint.
Step 6: Formulate a response.
Step 7: Select a resolution approach
Step 8: Implement the approach.
Step 9: Settle the issues/complaints
Step 10: Track, document, and evaluate the process and results.
The above steps/processes of implementing a GRM are here described;

i. Decide on focal offices

The focal office or officers for receiving and registering complaints from APs for the each project site shall be

clearly identified and established with ledgers and focal persons at the inception stage.

ii. Receive, uptake and Register Complaints

A grievance or complaint can be submitted to the GRC by a person or a group of persons, or communities who has/have been or may be affected by adverse impacts of a project or program or may be filed and pursued on the complainant's behalf by the complainant's a representative, duly authorized by the complainant to act in that capacity. Complaints can be presented in a variety of forms ranging from verbal communications to formal and written complaints. It is also recommended that uniformity be maintained in the complaint registration systems across the different focal offices of the project sites. See sample Complaint register (Annex I). A grievance or complaint may be submitted in English or any other language the complainant uses and the GRC shall provide confidentiality to complainants or those acting on their behalf.

iii. Screen and Refer the Complaints

Having received and registered a complaint, the next step in the complaint handling process is for the focal points to establish the *eligibility* of the complaint received. The following criteria shall be used to assess and verify eligibility:

- The complainant is identifiable and has provided a name and contact details.
- The complainant is affected by the project.
- The complaint has a direct relationship to the project.
- The issues rose in the complaint fall within the scope of the issues that the GRM is mandated to address.

If the complaint is not eligible, the complainant should be informed of the reasons.

iv. Coordinate with Other GRMs/ agencies

GRMs do not operate in a vacuum. They are embedded in networks of agencies and actors, and during their operations may relate to APs, GRM of other agencies, executing and support agencies, project implementers, intermediaries used for presenting complaints, and funding agencies. Coordination among different GRMs, as well as among other external agencies and actors with whom the GRMs interact in their operations, is an important aspect of good GRM design. It is necessary to identify and establish a central point to carry out these coordinating and communication functions. **Step 1 GRC** is also considered as the central point to coordinate with other **GRMs / GRCs.**

v. Assess the Complaint

Within five (5) calendar days from the receipt of a grievance or complaint, the GRC shall send the complainant or representative, where one has been duly authorized, an acknowledgment. The GRC shall register the grievance or complaint in the GRM register.

After an acknowledgment is sent, the GRC shall consider whether the grievance or complaint meets the eligibility requirements set out in Sections 3.1 and 3.2 above.

Eligibility determination shall be made within thirty calendar days from date of acknowledgment. During this phase, the GRC shall allow the complainant to provide further information to meet the requirements. The GRC will communicate to the complainant its determination on eligibility, together with reasons. If the CRC determines that the grievance or complaint is not eligible, the GRC shall not take any further steps concerning the matter.

If the initial assessment establishes eligibility of a complaint, a further assessment of its *seriousness,* is recommended, classified as high, medium or low and its impact on the complainant and the project. Assessing the seriousness of a complaint is not easy, as it could be subject to biases. Criteria shall be established and could include severity of the problem, potential impact on the well-being of an individual or group, potential impact on the project, and public profile of the issue.

Assessing the severity of a complaint requires additional data collection through field visits to the sites, discussions and interviews with complainants and other relevant persons or groups in the community, and crosschecking the information already provided.

vi. Formulate a Response

Having completed the complaint assessment, a response can be formulated on how to proceed with the complaint. This response should be communicated to the complainant. The response should include the following elements, acceptance or rejection of the complaint, reasons for acceptance or rejection, next steps; where to forward the complaint, a time frame; and further documents or evidence required. e.g., field Investigations.

vii. Select a Resolution Approach

GRMs should always present multiple approaches for grievance redress. People should be able to participate in the grievance redress process comfortably and without any fear of intimidation. The grievance redress approach shall create adequate space for the active participation of the APs, including vulnerable groups.

viii. Settle the Issues

This GRM may/shall propose a variety of strategies to settle grievances, including;

- Requesting the relevant agencies responsible for the grievance to take appropriate measures to remove the cause of grievance, e.g., contractors to provide alternative roads, clear canals and other irrigation systems, de-silt paddy fields, and/or remove garbage.
- Determining reasonable compensation for property damage, loss of livelihood, temporary evacuations, resettlement, etc. either from the project executing agency or from contractors;
- Signing agreements between APs and the project for solutions mutually agreed upon;
- Assuring the APs to address their grievances at the end of completing the project/ program related work, e.g., repairing the houses; the assurance letters are issued by the contractors or the project executing agency in both English and Local languages.
- Initiating a monitoring process (after addressing problem causes or paying compensation) to assess any further impacts of project-related work on the properties and livelihoods of the Aps among others

ix. Track, Document and Evaluate the Process and Results

This GRM will track and monitor the process of grievance redress and implementation of decisions made and of seeing that redress is granted to APs in a timely and efficient manner. It will also have the responsibility for giving regular feedback to the complainants about the progress of the grievance redress process as well as evaluating and assessing overall effectiveness and the impact of the GRM.

This information is important for project management to see trends of complaints, detect implementation flaws, take timely corrective action, and make strategic changes, if needed. It provides valuable feedback about APs' satisfaction with the project and thus contributes to a good reputation of implementing and executing agencies.

8.6. Other key provisions of this GRM include

Local languages; All relevant documentation related to a complain should be translated into the local languages of the complainants to facilitate communication

Retaliation: The GRC may, together with the Ministry, take all possible steps within its means to protect the complainant, witnesses and other involved parties from retaliation associated with grievances or complaints processed by the GRC under this GRM.

GRC Register and Case Management System - All GRCs for projects and programs shall establish and maintain an effective case management system (CMS) and maintain a searchable, user-friendly, publicly accessible, web-based register of cases (the register).

Access To The GRC and Costs Of Participation -The GRC shall be easily accessible and shall cover the costs of conducting problem solving and monitoring, including where appropriate, out-of-pocket expenses borne by complainants, stakeholders and witnesses in meaningfully participating in grievance or complaint processes.

Standard of Evidence - Whenever the GRC is required to make a finding on a fact, state of facts or matter regarding a request, or a grievance or complaint, the GRC shall use the balance of probabilities evidentiary standard. This is an assessment of whether a matter under consideration is more likely to be true than untrue.

Time Limits -The time limits given GRM shall be adhered to unless they are extended by the GRC, for good reasons necessary to ensure the full and proper processing of cases. Extensions shall be made in consultation with the relevant stakeholders during problem solving. Any extensions of time limits shall be made in writing with reasons and noted on the GRC register and communicated to the requester, complainant, Permanent secretary

and other relevant stakeholders, as appropriate.
Access to Information, Confidentiality and Disclosure - The GRC recognizes and respects a complainant's right to confidentiality including confidentiality of identities and disclosure of information provided to the GRC.
Communications and Outreach- The GRC will take a proactive approach to raising awareness and providing information about the GRC to its stakeholders, including potentially affected people, civil society organizations, and national designated authorities, accredited entities,
Lessons Learned and capacity building - The GRCs shall report to Permanent Secretary, on lessons learned and insights from handling cases and good National/ international practices, and may recommend reconsideration of policies, procedures, guidelines and systems of the MWE, including environmental and social safeguards.

CHAPTER 9: ENVIRONMENTAL MONITORING PROGRAM

Environmental and social monitoring will be mainstreamed in the overall Monitoring and Evaluation (M&E) system of the RECOFE Project. Environmental monitoring of sub-projects will be undertaken at different levels. MWE in-house Environmental/Social Experts will be responsible for day-day supervision and monitoring of implementation of environmental and social aspects of the Project as well as and preparing routine Reports. Also trained persons at lower local government levels will undertake monitoring at Local level. NEMA will mainly carry out "spot checks" to ensure that implementation of mitigation measures is done satisfactorily. This will help in determining whether the project is being carried out in conformity with environmental and social management plan and legal agreements, identify problems as they arise during implementation and recommend means to resolve them and where necessary recommend changes in project concept/design, as the project evolves or circumstances change.

9.1 Annual Reviews and Periodic Audits

An independently commissioned environmental and social audit will be carried out periodically (between 12 – 36 months) depending on the level of implementation of the project and sub-projects. The audit team will report to NEMA, the MWE and GWPEA who will lead the implementation of any corrective measures that are required. An audit is necessary to ensure (i) that the ESMF process is being implemented appropriately, and (ii) new issues arising and mitigation measures are being identified and implemented. The audit will be able to identify any amendments in the ESMF that are required to improve its effectiveness.

CHAPTER 10: INSTITUTIONAL ARRANGEMENT AND IMPLEMENTATION RESPONSIBILITIES

The Project Implementing Entity and executing entities shall oversee and coordinate the implementation of all mitigation measures proposed in the ESMP. The District and Sub-county Political and Technical leadership that take lead in the monitoring of the ESMP implementation at Local levels. At this stage, a broader view of Environmental and Social Management Plan (ESMP) for the proposed program has been developed, but ESMP for each intervention will be formulated during the detail design for each sub-project. Key institutions and officers to be involved in implementation of ESMP, include tMinistry of Water & Environment represented by tDirectorates of Water Resources Management and Environmental Affairs, Project team, District Local Government. Contractors and Consultants, District Engineer, Environment, Agriculture, Veterinary and Water officers.

Main Institutions and Officers that will be involved in the Implementation of the ESMF

Institution	Mandate
National Environment Management Authority (NEMA)	Oversee, coordinate and supervise environmental management. NEMA's overall goal is to promote sound environmental management and prudent use of natural resources in Uganda.
Ministry of Water and Environment (MWE)	The Ministry, through its Directorate of Water Resources Management and Environmental Affairs will monitor activities and provide technical backstopping and capacity building to field officers.
GWPEA	Supervise and monitor the overall implementation of ESMF, Facilitate and provide training for and other institutions' environmental and social specialists. Provide assistance during environmental and social screening and monitoring processes
Ministry of Gender, Labour and Social Development (MGLSD)	The objectives of the MGLSD are to minimize Occupational Accidents, Diseases and Injuries. Promote good Health of the Worker at the Workplace promote good Working Conditions, promote awareness of Occupational Safety and Health among Workers, Employers and the General Public through Training through its department of Occupational Health and Safety (OHS).
Local Government Administration Structures	District and Local Council Administrations (LC1-5) are stakeholders in the Project and will be involved in implementation of the project ESMP as well as subsequent monitoring. They will also

	take part in grievance mechanisms and sensitization of communities especially HIV/AIDS aspects.
District Local Governments represented by District, Natural Resources, Agriculture, Water, Community, Agriculture, and Veterinary Officers	The Ministry if Water & Environment/ DWRM in collaboration with the respective Local Governments will be primarily responsible for program planning, management and overall coordination within the District and Sub-counties. The assigned environmental and social personnel will also be responsible in conducting environmental and social screening, monitoring and following up of the implementation of the proposed mitigation measures.
District Environment Officer (DEOs)	DEOs are expected to review and approve ESIA documents, and oversee the Environment and social aspects of the Project. They will carry out spot checks on programs to confirm that environmental and social screening and environmental management plans are properly done. They will also advise the implementers including contractors in regard to impacts beyond the generic issues, determining if the mitigation measures are acceptable or program redesign is required.
Catchment Management committees	Catchment management committees will act on behalf of the community in planning and managing of natural resources management activities and water resources management activities within the catchment. Committees will be responsible for facilitating participatory planning and ensuring that implementation of mitigation measures are carried out.
Beneficiary communities	The community primary beneficiaries of the project will participate fully in all aspects of the program including project identification, preparation, implementation, operation and maintenance.
Construction contractors	Implement the ESMP for their specific sub-projects

CHAPTER 11: CAPACITY BUILDING PROGRAM

If the environmental management and monitoring system is to be successfully implemented, it is recommended that various trainings be provided. A quick capacity needs assessment for ESMP implementation and monitoring shall be conducted at the start of the Project in order to identify any gaps in the capacity of the key institutions and training program shall be developed and executed to fill these gaps. This will create the right conditions for better results. This will target key staff within the DWRM, the Project management unit, District and Sub-county technical and political leadership, contractors and selected catchment management committees among others.

The Project Management shall work with Directorate of Environmental Affairs (DEA) that is responsible for environmental policy, regulation, coordination, inspection, supervision and monitoring of the environment and natural resources as well as NEMA and selected consultants where necessary to build the capacity of the key stakeholders through seminars, workshops and field visits. The cost for undertaking this is incorporated in the total cost to implement the Project. In order to successfully implement the guidelines and recommendations in the ESMF, it is important to ensure that target groups and stakeholders who play a role in implementing the ESMF are provided with the appropriate and continuous Environmental and Social Safeguards capacity development.

APPENDICES

Appendix 1: Format for Reporting Grievance from Focal Point to Step 1 GRC

1	Name of the Project	
2	Name of the complainant/s:	
3	National Identity Card Number	
4	Address	
5	Date of the Complaint	
6	Grievance/complaint	
7	Statement Made by the Complainant	
8	Observations and Recommendations of GRC	
9	Participants in the GRC	

Appendix 2: Format for Recording the Proceedings of Grievance Redress Committees

	Name of the Project	
1	Name of the complainant/s:	
2	National Identity Card Number	
3	Address	
4	Date of Inquiry	
5	Time	
6	Whether complainant participated or not	
7	Grievance/complaint (Summary)	
8	Statement Made by the Complainants'	
9	GRC recommendation	
10	Copies to:	

ANNEX 6: GENDER ANALYSIS AND ACTION PLAN

CHAPTER ONE: INTRODUCTION

1.1. Introduction

There is rapid socio-economic development and widespread environmental change within Katonga catchment. The environmental changes therein are impacting heavily on the people who rely on ecosystem goods and services for their livelihoods. Subsistence agriculture is the economic mainstay and crop farming is predominant and widely practiced in the catchment. Commercial agriculture also exists with crops for instance maize planted at large scale in some areas. The increase in land use for agricultural practices is impacting heavily on the ecosystems in the catchment. The major issues related to environmental change in the Katonga catchment include among others;

- Deforestation and forest degradation; excessive loss of forest cover evidenced by reduction in spatial extent of forested areas from 63% (8,739km^2) in 1999 to 5% (734.3km2) in 2017, of the total land area in the catchment.
- Wetland reclamation due to excessive drainage of wetlands, riverbanks and lakeshores are also degraded in the catchment through agriculture, mechanized industrial scale sand mining, growing of eucalyptus, and brick making among others.
- Soil erosion especially in hilly parts of the catchment such as Kalungu, Lyantonde, Mubende, etc., due to lack of soil and water management infrastructure.
- Severe water stress characterized by domestic and agricultural water demand deficit. Water stress underlined by prolonged droughts that lead to drying up of surface and ground water sources such as boreholes, valley tanks, valley dams, streams, etc., are leaving people and livestock desperate.
- Prolonged droughts also characterize the catchment as part of the cattle-corridor. Droughts are reportedly becoming severe due to climatic change effects, excessive deforestation, and forest degradation. They are associated with severe water scarcity, reduced pastures and overgrazing, school dropouts, wetland encroachment and wildfires.

- Food insecurity resulting from poor agricultural harvests leading to tremendous decline in yields of staple foods, or even total crop failure. The major drivers of food insecurity are animal diseases and crop pests, soil infertility, prolonged droughts, and human diseases.

Katonga catchment is composed of 16 districts. Population demographics for the districts reveal an increasing population with a prediction of about 4,156,774 people expected in 2040 (UBOS, 2014). The highest population growth (946,483) is expected in areas of Mubende while the lowest population growth (26,159) is estimated for areas in the catchment within Kyenjojo District. The trend suggests that the population could even double by 2040 with more than half of the population below the age of 14 years. In addition, the rising living standards, together with rapid population growth, are creating new trans-boundary challenges to the catchment in terms of water and river basin management, livelihood options and sub-national migration flows.

There are currently major initiatives being implemented and planned throughout the Katonga Catchment to promote further regional economic growth and employment. Such initiatives include the development of more roads, railways, dams (mainly for hydropower) water infrastructure, particularly in areas previously dominated by natural resources and agriculture-based livelihoods.

The increase in the population and upcoming developments is triggering pressure on natural resources reflected in deforestation and degradation of wetlands for food and water. With a young population, pressure on water and related resources is likely to escalate.

Katonga catchment is amongst the most climate-vulnerable regions in Uganda. The catchment traverses' part of the dry Ugandan cattle corridor, which is affected with a wide range of climate change effects. Climate change is expected to exacerbate the impacts of existing threats to the catchment's inhabitants and ecosystems. Climate change effects in the catchment include, more extreme and frequent periods of intense rainfall, erratic on-set and cessation of the rainy season as well as more frequent episodes of drought.

In view of these issues, and with the aim of strengthening resilience of communities and ecosystems in Katonga catchment, the Ministry of Water and Environment (MWE) in partnership with Global Water Partnership Eastern Africa (GWPEA) prepared and submitted to the Adaptation Fund (AF) a concept for a national project entitled "***Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda*".** The overall goal of the project is strengthening the resilience of communities and fragile ecosystems to climate change impacts through promoting appropriate water infrastructure investments and nature- based solutions. The Adaptation Fund Board approved the project concept note and consequently a detailed, full scale project document needs to be developed and submitted to AF Board in order to access the secured funding worth USD 2,249,000 million for project implementation.

1.2.1. Purpose and Approach

Reducing of gender-based differences and inequalities necessitates effective policies, which when appropriately applied will ensure project success and realization of meaningful impacts. The expected project will be grounded on a wide range of gender mainstreaming approaches.

In order to manage the Katonga catchment area effectively it requires a clear understanding of gender-based inequalities and how they can be addressed. The absence of such understanding can lead to the continuance of gender-based inequalities and other dimensions of social vulnerability which have the potential to negatively impact project implementation. The proposed project should bear a gender lens that aims at promoting gender equality and empowerment of women, girls and other vulnerable groups such as PWDs, refugees and the youths within the Katonga catchment area.

The proposed gender action plan is in line with Adaptation Fund gender guidelines and principles that promote interventions against gender inequalities.
The following principles adopted from the Uganda Gender Policy 2007 will guide the implementation of this strategy and action plan:

Gender equality: Gender equality is an essential portion of national development processes. the ability of men and women, boys and girls to enjoy the same status and have equal opportunity to realize/ harness their potential to contribute to development agenda of the country at large.

Gender equity: Guaranteeing fairness in the distribution of resources, programs, decision making, benefits and responsibilities between men and women, girls and boys in all spheres in life without any discrimination on the basis of sex and attending to any disparities in the opportunities that accrue to all.

Gender cuts across all sectors and levels: Fulfillment of the gender equality depends on the extent to which public and private sector institutions and agencies involve both women and men as providers and or producers and recipients of services and investments. This requires women as well as men to play an active role in shaping development directions and choices at all levels.

Affirmative action: Bridging gender gaps in the various development sectors requires preferential attention for the disadvantaged. Affirmative action as enshrined in the Constitution will be pursued to redress historical and present forms of discrimination against women and girls in the sector.

Household and family relations: Intra-household power relations decide appropriation, ownership and control of livelihood assets among women and men, girls and boys. This in turn inspires individual participation in and benefits from development processes at all levels. Interventions that address these intra-household changing dynamics are therefore critical for this plan.

Progression of gender equality requires the promotion of two approaches:
a) Women in Development (WID)
WID is a concept, which denotes an approach that advocates for women targeted interventions within the mainstream of development so as to improve their condition.

b) Gender and Development (GAD) is an approach that affirms and supports women's equal role in development. It also questions the direction of development, advocates for structural transformation, and insists on the transformation of gender relations. GAD does not mean a de-emphasis on women, rather its goal is women's empowerment and equality of women and men in the reproductive as well as productive spheres.

1.2.2. General Context
Katonga catchment is amongst the most climate-vulnerable regions in Uganda. The catchment traverses part of the dry Ugandan cattle corridor, which is affected with a wide range of climate change effects.

There is rapid development within the Katonga catchment and thus, reflecting socio-economic and political stability, there is widespread environmental change within the catchment. As agriculture is the economic mainstay. Increase in land use for agricultural practices is impacting heavily on the ecosystems. The major issues related to environmental change in the Katonga catchment include among others

- Deforestation and forest degradation;
- Wetland reclamation;
- Soil erosion;
- Water Stress;
- Prolonged droughts;
- Food insecurity

1.2.3. Project Objectives
To strengthen the resilience of communities and fragile ecosystems to climate change impacts through promoting appropriate water infrastructure investments and nature- based solutions

1.2.4. Project Components
1. Strengthening the capacity of key grass root stakeholders for climate change adaptation

2. Promoting appropriate water storage technologies for increased water and food security
3. Supporting establishment nature-based enterprises for improved community livelihoods
4. Supporting knowledge management and information sharing

2. Project Area and Methods

2.1. Description of Project area

River Katonga is located in the South-central part of Uganda with its catchment draining into Lake Victoria. The river acts as a channel connecting Lake Victoria and George reflecting that it previously drained into Lake George. However the regional uplifting events between the two lakes (the Albertine rift) Katonga Catchment Management plan caused the swampy region to southwest of Lake Wamala to become the new catchment for Katonga river which now primarily flows east into Lake Victoria, augmented by several tributaries along its course.

The catchment lies about 0°13'N 30°39'E near the Katonga wildlife reserve with a distance of more than 120km from Lake Victoria. During wet seasons, raised water levels in the vicinity of its swampy watershed occasionally force some water to flow west from this point into the western section of Katonga River which feeds L. George but, the bulk of the flow still continues eastwards into Lake Victoria. To the West of its catchment, R. Katonga is also fed by several tributaries along its course to L. George. The principal mouth of the river enters L. Victoria near Lukaya in Kalungu district (coordinates: 0°07.3'S 31°54.8'E).

The catchment is generally flat, allowing satellite wetlands to dominate which cover an area of about 2,478km2. caused the swampy region to southwest of Lake Wamala to become the new catchment for the Katonga river which now primarily flows east into Lake Victoria, augmented by several tributaries along its course.

Demography

The population of the Katonga catchment is estimated at 3,020,638, of which 1,524,887 (50.5%) are female, and 1,495,751 (49.5%) males (UBOS, 2014). Whilst the total number of households in the catchment are estimated to be 678,076. The highest population growth (946,483) is in areas of Mubende, while the lowest population growth (26,159) is estimated for areas within Kyenjojo District. The trend suggests that the population could even double by 2040 with more than half of the population below the age of 14 years.

2.2. Methods

Data and information was obtained using a number of methods including reviewing documents and reports, key informant interviews and focused Group Discussions (FGDs), meetings with MWE staff and selected partners. The team used appropriate methods and tools to capture the required information using participatory approaches that adequately included several stakeholders within the proposed project area of the project entitled *"Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda".*

2.2.1. Field Visits

Field visits to Katonga catchment area were undertaken. The Consultants visited four selected sites (hot spots) to assess and unpack varied gender considerations that are at play, which the intended project should take care of.

Table 1: Selected sites where filed visits and consultations were conducted

No.	Sub-Catchment	Most Degraded District	Focal Sub-Counties
1	**Upper Katonga**	**Kyegegwa**	**Ruyonza Sub-county**
2	**Mid-Katonga**	**Sembabule**	**Lwemiyaga Sub-County**
3	Nabakazi	Mubende	Nabingoola Sub-County
4	**Kakinga**	**Lyantonde**	**Mpumudde Sub-County**
5	Bwogero	Mubende	Kasambya Sub-County
6	**Nabajjuzi**	**Kalungu**	**Bwesa Sub County**
7	Wamala	Mityana	Kakindu Sub-County
8	Kyogya	Lwengo	Kkingo Sub-County

2.2.2. Consultations

Consultative meetings were held with local leaders, community members, and District technical staffs who

selected from the upper, mid and lower catchment casing four Districts.

A community consultative meeting at Rwemiyaga sub-county

2.2.3. Meetings
Meetings were held with MWE staff and partners mainly to collect, review and validate information and documents produced by the Consultants. The Gender analysis study was carried out between 21/02/2020 to 27/02/2021 involving participatory methods.

2.2.4. Literature Review
Included a desk review of policies and institutions in places related to water, gender and climate change. Relevant documents including the existing Katonga catchment management plan, EURECCCA project reports, Adaptation Fund gender policy guidelines and relevant Ministry documents. The review was based on the available literature on Livelihood, governance, climate change, resource use and management issues related to Katonga catchment area.

3. The Assessment Findings

Limited access and control of land:
The land tenure system in the Katonga catchment area is somewhat complex, it is consists of mailo land, free hold, and leasehold land tenure which is largely fragmented and normally culture and the patriarchal nature of society defines ownership and control.

Ownership and control of land is vested in the hands of men with women only relegated to limited user rights and control. Depriving women, girls and boys access to land in the Katonga catchment is a widespread phenomenon characterized with varied negative impacts such as inadequate sources of livelihoods. Women depend on land as a source of livelihood where they carry out different economic activities, ranging from animal rearing and growing of crops such as cassava, maize, beans etc.

Resource use related conflicts
The Katonga catchment area is experiencing an increase in population, which has led to the escalation in the demand of resources such as; firewood, water for domestic and production, land for grazing and settlement among other uses yet the resources have diminished over time. Conflicts are happening because the available resources within the catchment have diminished and cannot meet the current demand of the users whose population has exploded. For example, In the Katonga catchment, out of a total of 1,197,119 households, the majority of households (80.4%) used wood fuel as the main source for cooking as shown in Table 3. This was followed by

charcoal (15.3%). The trees have been over harvested hence disputes over this scarce resource and women are mostly affected.

The Clashes among resource users are currently happening at household and community level affecting both men and women. The women, girls and boys who entirely depend on the catchment resources for survival are particularly disturbed. Therefore, the proposed projects needs to support the vulnerable groups with alternative options such as IGAs (tree seedlings).

Limited access to finance and credit
Financial institutions are making it difficult to for women, youths, PWDs and the elderly to access credit because of the tighter and stringent terms and conditions that require collateral security to qualify for award. This is a tough asking for majority of the vulnerable groups because they barely own property.

The project should promote easy access to finances by women without stringent term and conditions. Hence formulation of SACCOS, self-help groups (Mary go round) is a leap in the right direction.

Participation in decision making
The inadequate participation of women and girls in key resource management processes is putting women and girls in vulnerable situations. Women, girls and boys in the Katonga catchment are over-represented in highly vulnerable social groups and their ability to participate in key decision making processes to prepare for, survive and manage varied challenges within the catchment is strictly inadequate.

Similarly, groups such as; women, elderly, refugees, child headed families, youth, PWDs, HIV/AIDs headed families barely participate in decision making processes at the District, Sub County and parish level regarding the management, control, use and access of the catchment resources such as Firewood, Land for Agriculture, Water for domestic use and production, Sand mining, Building materials (poles), Herbal medicines, Food (fish and fruits) and grass for animals.

Limited access to sources of Livelihoods
Majority of women in the Katonga catchment are engaged in subsistence farming that particularly focus on cultivation of staple crops such as; maize, (Bananas) matooke, cassava, and vegetables. Livestock keeping (cattle, goats and sheep) is also wide spread especially in the dryer part of the catchment.

What is evident is that, most proceeds realized from different income generating activities go to men yet women devote a lot time, energy and resources in early stages of production. This unfair sharing of proceeds from the harvest is entrenching poverty among women.

Overall women, youth, PWDs and refugees living within the catchment have limited sources of revenue to support the needs of their households. Since their lives are confined to their households, they are very prone to poverty.

From analysis, men earn more livelihoods than women do because they are involved alternative income generating activities such casual laboring, retail shops and motorcycle transport.

It is suggested that in order for women to take advantage of the project, it is essential to generate alternative nature based livelihoods sources, access to finance; capacity building; training and development; and technical services for women in the catchment area.

Livestock rearing is one of the popular activity in the Katonga catchment

Climate change perturbations

With the increase in uncertain weather conditions, several extreme events such as heavy rainstorms, flooding, droughts etc. have occurred affecting a wide range of economic activities particularly agricultural based enterprises including among others livestock keeping and crop production. The affected communities have had their livelihoods sources disturbed leading to low levels of incomes.

Majority of the women farmers in Katonga catchment are involved in subsistence farming growing arable crops such as vegetables, sweet potatoes, yam, millet, maize and beans. Weather events such flooding and prolonged drought have rendered the agricultural land unproductive leading to low crop yields and consequently food insecurity in women headed families.

Prolonged drought has led to the drying up of water sources and consequently scarcity of water for domestic use and production. Women and children bear the biggest burden where they have to walk long distances in search of water. Interventions that bring water harvesting and storage, and other sanitation programmes closer to the communities will help to improve the quality of life of women and children.

The statistics in table 2 shows that the overall access to water was 65.8% (66.2% in rural areas and 67.8% in urban areas) of Katonga catchment and surrounding areas in 2017. However, in 2020, the overall access to water was 65.2% (66.5% in rural areas and 63.9% in urban areas) of the districts that form Katonga catchment. Furthermore, access to water in Year 2020 in the following areas stood at Kyegegwa 32%, Sembabule 38%, and Lyantonde 48% an indication that scarcity of water is real challenge.

Table 2: People with access to safe water supply.

	Access to water in Year 2017 [MWE Water Atlas 2017]					**Access to water in Year 2020 [MWE Water and Environment Sector Performance Report 2020]**		
District	Total Population (#)[60]	Population served (#)	Rural (%)	Urban (%)	Total (%)	Rural (%)	Urban (%)	Total (%)
Bukomansimbi	153,869	132,260	85	95	86	87	92	83
Butambala	103,907	98,712	95	95	95	95	95	95
Gomba	166,940	134,168	79	95	80	86	95	87
Kalungu	**190,013**	**173,773**	**91**	**95**	**91**	**92**	**95**	**93**
Kamwenge	467,658	351,768	74	95	75	73	95	74
Kiboga	159,394	115,946	80	49	73	85	46	76

[60] The population statistics are from UBOS Census 2014 and have been projected to April 2017 based on the district population growth rates published in the Census 2014.

Kiruhura	362,063	150,964	42	43	42	47	53	48
Kyegegwa	**336,774**	**120,893**	**34**	**56**	**36**	**31**	**45**	**32**
Kyenjojo	470,101	354,111	72	91	75	64	91	69
Lwengo	283,711	204,439	76	44	72	75	46	72
Lyantonde	**102,499**	**53,133**	**47**	**82**	**52**	**43**	**74**	**48**
Masaka	314,858	221,374	78	57	70	78	54	69
Mityana	348,258	271,910	75	95	78	79	70	77
Mpigi	268,712	214,595	84	61	80	83	59	78
Mubende	767,201	229,548	32	0	30	38	0	34
Rakai	547,918	250,428	45	55	46	36	36	36
Sembabule	**273,060**	**103,207**	**37**	**44**	**38**	**38**	**41**	**38**
Overall	**5,316,936**	**3,181,229**	**66.2**	**67.8**	**65.8**	**66.5**	**63.9**	**65.2**

Source: MWE Water and Environment Sector Performance Report 2020]

4. Legal and Policy Framework

4.1. International commitments

There are a number of international legal instruments to which Uganda is a signatory. These international instruments provide clear principles for gender equality and women's empowerment in all sectors, and provide a framework to address discrimination.

1	Convention for Elimination of all forms of Discrimination against Women (CEDAW)
2	Beijing Declaration and Platform for Action, 1995
3	The Commonwealth Plan of Action on Gender, 2005-2015
4	United Nations Security Council Resolution (UNSCR) 1820
5	The Universal Declaration of Human Rights 1948
6	International Covenant on Civil and Political Rights 1996

4.2. Regional commitments

1	1. The AU Heads of State Solemn Declaration on Gender Equality, 2004
2	2. Kampala declaration of International Conference of the Great Lakes Region (ICGLR), 2011
3	3. The Common Market for Eastern and Southern Africa (COMESA) Gender Policy, 2002
4	4. The Protocol of the African Charter on Human and people's Rights on the Rights of Women in Africa

4.3. Uganda National Legal framework

1	**1.The Constitution of The Republic of Uganda 1995** is the supreme law that provides for equal rights between men and women in marriage, ownership of property; equality in social, political, cultural and economic spheres and affirmative action. It also provides for non-discrimination.
2	**2. The Local Government Act Cap 243, 1997:** This Act provides for the establishment and operations of local governments in Uganda. A key role of local government is to facilitate and coordinate the formulation of district development plans that should draw on key needs and priorities from citizens in their districts.
3	**3. The Occupational Safety and Health Act 2006** provides for gender considerations in the provision of sanitary and other facilities, structures and infrastructure in places of work.
4	**4. The Land Act Cap 227** as amended regulates land ownership and registration and provides for spousal consent regarding land transactions.
5	**The Land Acquisition Act Cap 226** that provides for procedures for land acquisition.
6	**The Employment Act** regulates employment relationships. This Act prohibits discrimination in employment based on gender and sexual harassment in the work place.

4.4. The national policy framework

1	**The Uganda Gender Policy of 2007** guides all MDA to mainstream gender in their activities. The MGLSD has developed gender mainstreaming guidelines to be used by sectors to ensure that gender equality and women's empowerment is achieved. In most MDAs, Gender focal point persons have been put in place to ensure implementation of gender provisions in their respective departments and activities. However, the investment in the oil and gas sector has been limited by

	the lack of an adequate coordination framework, strategy and resources.
2	**The National Employment Policy for Uganda 2011** provides a framework for achieving decent and remunerative employment for all women and men seeking such work, in conditions of freedom, equity, security and human dignity. The policy recognizes that women in Uganda constitute the majority of farmers and unpaid care work as they are responsible for most of the care economy. There is a segregation of women into low paying sectors and in all sectors and women are paid less than the male wages.
3	**The National Land Policy, 2013:** Provides a framework for articulating the role of land in national development, land ownership, distribution, utilization, alienability, management and control of land.
4	**The National Community Development Policy for Uganda 2015** aims to understand and recognize the different issues and problems that affect women and men, girls and boys and promotes identification of appropriate strategies for overcoming gender inequalities in the development process.
5	**Social Development Sector Plan (SDSP) 2015/16- 2019/20**
6	Gender equality and women's empowerment is one of the priorities of the SDSP. Within the SDSP, gender analysis has been undertaken in labour, productivity and employment, community mobilisation and empowerment, social protection and institutional development thematic areas. The sector shall focus on mainstreaming gender and rights in policies, plans and programs in sectors and Local Governments. Focus shall be on integrating gender and social safeguards in all infrastructural projects such as transport infrastructure, public buildings, energy, oil and gas.
7	**The National Development Plan II 2015/16- 2019/20**: The oil and gas sector is projected to be a major driver in employment creation and GDP growth over the medium term through value addition. The attainment of gender equality and women empowerment is a prerequisite for accelerated socioeconomic transformation.

6. Conclusion and Recommendations

6.1. Conclusions

Through controlling the issues that emerged during stakeholders consultations outlined below from which these gender gaps arise, the gender gaps that exist can be reduced.

- Land access and control
- Resource use conflicts
- Access to finance and credit
- Participation in decision making
- Access Sources of Livelihoods
- Climate change perturbations leading to scarcity of water
- Social norms, values and beliefs

Commitments should be to ensure women, men, youth and the elderly are participating in committees and groups for managing local fragile ecosystem areas, but particularly ensuring women take up leadership positions.

Incorporate climate change and gender concerns into planning, budgeting and monitoring in the water resource use and management to reduce some challenges.

7. Gender Action plan

This Gender Action plan provides suggested entry points for gender-responsive actions to be taken under each of the Activity areas of the project (titled: **Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda**). Furthermore, the specific indicators are projected to measure and track progress on these actions at the activity level.

Activity/outcome/Objective	Measure and action	GAP Indicator	Target	Means of verification	Responsibilities
1. Strengthening the capacity of key grass root stakeholders for climate change adaptation					
Outcome 1.1 Capacity of key grass root stakeholders in implementing climate resilient development initiatives strengthened	Build the capacity of women, girls, boys who are grass root stakeholders in implementing climate resilient development initiatives Prioritize women and youth groups to benefit from the climate resilient development initiatives Capacity building initiatives (trainings) should consider equal and balanced participation of both women and men Conduct a gender baseline at the onset of the project	>Number of women and men at grass root stakeholders who have acquired and demonstrate practical knowledge and skills of how well designed climate resilient development measures can significantly and concretely contribute to economic development, poverty strategies and enhance fragile ecosystems. >Percentage increase of targeted women in communities undertaking climate change adaptation actions. >No. of trainings conducted in implementing climate resilient development initiatives	100 persons 50 women 50 women	Training reports List of participant	VWMZ DNROs, DEO, DFO, CDO, District Planner
Output 1.1.1 Climate change Capacity building program for key stakeholders developed	-Conduct at least 3 capacity building trainings targeting a balanced representation of women and men	>No women and men trained climate change programs >No. of trainings conducted >Number of women and men engaged in capacity building activities	100 women		MWE staff Project coordinator Team Leader (VWMZ)
	Conduct a capacity needs assessment	>A capacity needs assessment report- -Number of women consulted during a need's assessment >Number of staff both women and			

		men trained to respond to, and mitigate impacts of, climate related events >Ability of women, girls' able to form and freely meet with social networks, friends and relatives			
	Train women and girls separately on climate changes programs	-200 persons to be empowered -100 women empowered			
	Domesticate tool kits/training materials and make sure they are accessed by both gender	>Number of women and men accessing the tool kit			
Outcome 1.2 Governance of natural resources strengthened	Make certain that men and women are equally engaged in training on sustainable land management and natural resource management of wetlands. Women and girls being able to influence decisions within community forums (self-help groups) regarding allocation and utilization of vital resources and ensure that their priorities are taken care of during decision-making processes. Recruit women in key decision making and implementing structures within the Katonga catchment such as catchment management committees etc.	>Presence of gender specific measures in the catchment arrangements and integration thereof into climate change initiatives and/or economic development strategies >Number of rights holders (custodians) engaged in accessing information >Stakeholder mapping >Increase in number of women participating in key decision making bodies regarding utilization of services	At least 30% of leadership roles/responsibilities are spear headed by women	Project reports	
Output 1.2.1 Community resource use group leaders orientated in leadership and management	Women need to be trained specific leadership role pertaining to community plans for management of the catchment areas The Project should support to	>Number of women leaders trained who display basic knowledge and take corrective actions about their communities' rights over territories and natural resources >Number of women in leadership	persons	Project reports	VWMZ DNROs, DEO, DFO, CDO,

	recruit and promote women in leadership positions through equal access employment training and capacity building opportunities. Consider the participation of both men and women in water user groups and wetland management	positions >Key decisions taken by women leaders taken into consideration			
2.Promoting appropriate water storage technologies for increased water and food security					
Outcome 2.1 Increased water and food security	provide special considerations for access of water, food and fodder to households headed by the vulnerable group	Percentage increase of households with suitable daily water & food and fodder consumption for livestock	30%		VWMZ DNROs, DEO, DFO, CDO, District Planner
Output 2.1.1 Innovative multi-stakeholder water harvesting and storage technologies adopted	Encourage participation of women in water and sanitation programs. Water harvesting and storage technologies and household level should particularly benefit PWDs, women and girls	>Number of male and female adopting new water harvesting and storage technologies. >No. of households with demonstrated water harvesting enhancing options to reduce water scarcity for domestic and agricultural production within the catchment			
	Aware that the project intends to benefit both women and men in terms of water storage technologies, focus should be put on women because they have the main responsibility of obtaining, using water and sometimes paying for it. Therefore, any efforts geared towards accessibility and utilization of water will be an immediate gain for women. Encourage formation of water use groups constituted of both gender	>Number of male and female adopting new water storage strategies >Number of men and women participating in trainings on resilient water storage >Number of women and men contributing to mapping and preparatory activities for ponds and water storage facilities >Number of men and women participating in water user groups and wetland management			

		activities and >Changing role of men and women in groups tasked with water and wetland management			
3.Supporting establishment nature-based enterprises for improved community livelihoods					
Outcome 3.1 Increased income for improved stakeholder livelihoods	The project should promote access to basic needs (nutrition/Food) among the vulnerable groups (PWDs, Elderly, Child headed families)	>% age increase in income for project beneficiaries in targeted project sites.	By end of year 3, income for project beneficiaries increased by at least 30%		VWMZ DNROs, DEO, DFO, CDO, District Planner
Output 3.1.1 Nature-based enterprises promoted ⟩ Number of households taking	The project should ensure involvement of refugees in income generating activities. Ensure that PWDs benefit from the nature-based IGAs to support their livelihoods	>Number of households taking up new interventions as a result of the project >Number of PWDs benefiting the nature-based IGAs.	50	project reports	
	The project should increase income opportunities for women through unskilled labor especially during infrastructure construction, for instance can provide backing services such as catering for construction workers.	>Number of demonstrated livelihood enhancing options to reduce poverty and environmental degradation in the catchment			
Output 3.1.3 Market linkages of products from nature-based enterprises established	Support women with trainings in business management, value addition, access to markets and record keeping	>Number of producers linked to existing or new value chains	100		
Output 3.1.4 Entrepreneur skills of stakeholders enhanced	The project should provide all training and capacity building activities in entrepreneurship to all but make practical requirements to inspire women to participate.	>Number of producers trained in crucial aspects for inclusion in management, negotiation, identification of partnership opportunities, market outlooks etc.	200		
Outcome 3.2 Enhanced ecosystem health	Incorporate climate change and gender concerns into planning, budgeting and monitoring in the water resource use and	>By end of project, Sediment load within rivers in the catchment is maintained below average threshold	7%		

	management to reduce some challenges.				
Output 3.2.1 Fragile ecosystems conserved	Commitments should be to ensure women, men, youth and the elderly are participating in committees and groups for managing local fragile ecosystem areas, but particularly ensuring women take up leadership positions.	>Area of fragile ecosystem restored	2000 ha		
4.Supporting knowledge management and information sharing					
Outcome 4.1 Lessons and good practices shared and adopted	During awareness at all levels of the project implementation, the focus should be put on increasing the understanding of the Uganda national gender policy. Link the different needs of women and men to the existing issues such as climate change, institutional gender issues and strategies of the project.	>Number of development plans incorporating climate change resilience issues >Good practices and lessons from the project are documented and influence policy		Project report	VWMZ DNROs, DEO, DFO, CDO, Local Leaders
	The project managers should ensure that they communicate with women and men separately, via passages, which are suitable to either gender. Segregate awareness materials t particularly target women e.g. on water and usage.				
	In instances where men and women are participating in community meetings, women should be called to speak out such that their voices are heard.				

8.0 Bibliography

MWE Water and Environment Sector Performance Report 2020]
Republic of Uganda (2012) National Development Plan
Republic of Uganda (2014) Vision 2040
The Uganda Gender Policy (2007)

Annex 7: Consultations Workshop Report

1.0. INTRODUCTION

1.1 Background to the Validation Workshop

The multi-stakeholder national level workshop of up to 50 participants (Figure 1) was held to validate the findings of preparatory studies carried out to support the project proposal formulation process. The proposal is titled: "**Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda".** The studies had been concluded and the following draft reports were presented at the workshop:

- Environmental and Socio-economic assessment
- Vulnerability Assessment
- Gender analysis and Action plan
- Environmental and Social Management Framework (ESMF)

Figure 1: Participants in the multi-stakeholder national level validation

1.2. Field level excursions and consultations

The study reports were produced based on review of literature, beefed up with field observations assessments, and consultations at district, sub county and village levels Table 1). Round table discussions were in addition held with the technical staff of the Victoria Water Management Zone. Critical observations were noted as the team traversed the catchment from the upper, through the middle to the lower sections of the Katonga catchment; with stopper overs in identified villages for the detailed consultations and village transect walks. Details are presented in the respective reports.

Table 1. Field level consultative meeting venues

District level	Sub county level	Village level
Lyatonde	Mpumudde	Bikokora A
Kyegegwa	Ruyonza	Kishagazi
Ssembabule	Kyera (delineated from Rwemiyaga)	Nkonge
Kalungu	Bwase	Kiwumulo

1.3. Objective of the Workshop

To obtain input from stakeholders to enrich the draft reports to be able inform and conclude the proposal formulation process.

1.4. Aim of the Project

The Katonga Catchment is faced with several climate change related challenges. In view of these issues, there is the desire to strengthen the resilience of communities and ecosystems in Katonga catchment. Hence, the Ministry of Water and Environment (MWE) in partnership with Global Water Partnership Eastern Africa (GWPEA) prepared and submitted a concept for a national project to the Adaptation Fund (AF). The overall goal of the project is to strengthen the resilience of communities and fragile ecosystems to climate change impacts by promoting appropriate water infrastructure investments and nature- based solutions. The Adaptation Fund approved the project concept note. At the same time, the AF recommended, that a full scale project document needs to be developed and submitted to AF in order to access the secure funding amounting to USD 2,249,000 million for project implementation.

1.5 The Workshop proceedings

The workshop was officially opened by the Commissioner, Water Resources Planning and Regulation, Dr. Callist Tindimugaya, from the Ministry of Water and Environment. He called upon participants to effectively participate and share knowledge and any necessary literature for production of quality reports to inform the development of a fundable proposal. An interactive approach that advanced participatory and consultative methods was used in a multi-stakeholder workshop setting during the validation of study reports. Reports of the study findings were presented in power point that generated discussions, including additions to the reports, and clarifications from consultants. This enhanced ownership and was useful in gathering critical information to refine the studies.

Figure 2. Presentation during the validation workshop

1.6 Program

Time	Activity	Responsible party
8.30-9.00	Arrival and registration	GWP
9.00-9.15	**Opening** • Introductions • Welcome remarks by MWE	MWE
9.15-9.25	Overview of the RECOFE Project	GWP
9.25-9.40	Overview of the Assessment Process	Dr. Lawrence – Lead
9.40-9.50	Discussion	All
9.50-10.20	Presentation of Assessment reports (session 1)	Team
10.20-11.00	Plenary Discussion	
11.00-11.30	**Health-Break**	All
11.30-12.00	Presentation of the Assessment reports (session II)	Team
12.00-12.40	Plenary Discussion	Dr. Lawrence
12.40-12.50	Next steps	GWP
12.50-13.00	Closing Remarks	
13.00+	**Lunch and Departure**	All

2.0 THE PRESENTATIONS

The presentations commenced with an Overview of the RECOFE Project. This was necessary in order to benefit participants that were not familiar with the project and to remind those that were familiar. Thereafter, an Overview of the Assessment Process was presented. This was used to clarify the methods and to enable participants evaluate the findings. The draft assessment reports (2.1 -2.4) were then presented. Power Point Slides were presented and participants contributed to these.

2.1. Environmental and Socio-economic assessment

2.2. Vulnerability Assessment

2.3. Gender analysis and Action plan

2.4. Environmental and Social Management Framework (ESMF) including the Grievance Redress Mechanism

3.0 REACTIONS TO THE PRESENTATIONS

Attention to the questions raised and inputs contributed by the participants were noted down to inform review and improvement of the draft reports, in addition to clarifications wherever it was necessary.

Figure 3. Participant contributing to the baseline presentation

3.1. General comments

1) The project talks about climate change, but this is too broad and the specific aspects addressed by the project need to be specified (or, is the project dealing with everything?)
2) What is the duration of the proposed project? What are the proposed dates?
3) Project objectives 1 and 4: please define the 'capacity'
4) What is NACOPART? Who are they? What do they do?
5) Regarding water storage: what initiatives are proposed by the project? How are the people currently surviving? Which water related infrastructure are available to justify the water scarcity?
6) Organogram: Needs to be re-visited for logical placement of the project Steering Committee, Catchment and Sub catchment Management committees
7) Include a map showing the major water related infrastructures
8) There is a need to show a clear linkage between the studies conducted and the project. Of what benefit are the studies to the project? They should, for example, show the gaps so that proposed project interventions are designed to address those gaps. Moreover, data collected during the studies should be used to evaluate the achievement of project objectives during Performance Assessment.
9) Check the budget website of the Ministry of Finance (www.budget.go.ug) for Local Government performance statistics
10) The Consultants should recognise that all the comments are valid: there is a need to show where we are now in terms of aspects that the project will address.
11 Pictures in the reports: Localities and GPS coordinates should be included
12) It is necessary to involve the Political Leadership for a successful proposal
13) Nature Based Solutions are proposed by the project so that communities realise the benefit of biodiversity/nature, and so, are willing to help with enforcement of environmental regulations
14) How did the team come up with the project idea? What's the theory of change? Is the project focussed on livelihoods?
15) Who are the grassroot communities? This should be clearly defined from the onset
16) If there is an opportunity, consider enriching/modifying the title of the concept.

3.2. Environmental and Socio-economic baselines

1) The Water for People Project is not included among the projects within the Katonga catchment (in Biguli, Kamwenge District). The project has (monitoring) data/reports on Ground Water levels and Water Quality. Take note of the restrictions on shallow wells and protected springs. The District Water Offices may have some data on water supply systems that have ceased, so that the proposed project may intervene
2) Kyotera District was not included in some of the maps
3) What do the baselines presented (e.g. on rainfall), mean for the proposed project?
4) Avoid generalisations e.g. on soils/land use, it is indicated that 'most of the area is pervious': what does this mean?
5) Projects that are being implemented by stakeholders: there is a need to show the progress i.e. what has so far been done or achieved? What has changed (impact)? what numbers are involved?
6) Provide the data on Sitatunga populations
7) Poor rural communities: how poor is 'poor' in the context of the project?
8) The Issue/Solution Matrix: Planting trees need not be the only solution to drought
9) Consultations need to made with more stakeholders
10) Stakeholder mapping: Include the cultural as well as the religious institutions (including their projects) e.g. Bisaka in Kamwenge
11) District statistics need to be utilised and interpreted carefully e.g. districts appear to perform poorly in terms of access to clean water due to the increasing population that lowering the % of the population that has access to clean water to <50%
12) Need for more information on Sembabule District e.g. on the status of biodiversity and the pastures (these are very much prone to climate change effects).

3.3. Vulnerability and Adaptation

1) The collapsing bridges (shown in a photo) may not necessarily be attributed to climate change (effects of floods),

but may result from poor works during construction
2) Vulnerability dwelt on the communities but ignored the fragile ecosystems
3) How sensitive are the different communities or households to climate change? (in addition, how sensitive are the communities to each of the effects of climate change?)
4) No picture was provided to show the scarcity of water 9e.g. people lining up to collect water)
5) There is a need for more clarification on adaptive capacity
6) The study should not generalise on the effects of climate change (e.g. flooding), but should specify the locations
7) How are the communities adapting to the effects of climate change?
8) Refugee Settlements (Kamwenge and Kyegegwa): Policy aspects (e.g. restriction to construction of permanent housing) should be considered when discussing the poor state of the houses. How could the situation be improved?
9) It is acceptable that there is climate change. However, the study should answer the question: where is the climate change (e.g. flooding, drought and landslides)? Hence, the water storage structures are needed to reduce the effects of floods
10) Ecosystems such as wetlands: how important are they in addressing the impacts of climate change? Later, there will be a detailed assessment of the status at start of proposed project.

3.4. Gender

1) There is a need for Gender Disaggregated Data
2) Consider the Catchment Management Planning Guidelines: these include gender issues

3.5. ESMF

1) Policies versus Acts: how are the two reconciled?
2) The ESMF be developed with support from Local Governments especially technical staff
3) Include the following in the introduction: Ramsar Convention, Refugee Law, and relevant Ordinances

4.0 RESPONSES FROM CONSULTANTS

All questions and inputs raised where quite helpful in enriching the draft report presented to the national level stakeholders. The responses were majorly to clarify on some of the aspects that seemed not clear to the audience. Nonetheless, all comments were noted and appropriate adjustments made in the draft reports.

4.1 General comments

- True to the fact that most of the studies were broad, the aim was to fully appreciate the situation on-ground to inform the appropriate designing of the project. Efforts will be made to refine the reports to capture aspects relevant to the project. In addition, the Environmental and Social Management Framework (ESMF) report narrows down to the specific aspects addressed by the project.
- This is a three -year planned project.
- Capacity refers to the ability of targeted stakeholders to perform or deliver on the projects expectations/results
- NACOPART is an abbreviation for Nature Conservation Partners Uganda Limited, the consultancy firm that conducted the studies
- The baseline report outlines the water storage facilities in the catchment that the project is planning to build on and these include water dam, and shallow wells. Other watering points highlighted include boreholes, piped water system and water dam to support small irrigation schemes. The existing water storage facilities are not evenly spread over the catchment, leaving some of the communities vulnerable.
- Organogram will be revisited as advised
- Regarding the map showing major water related infrastructure, the consultants request relevant institutions to provide such information for inclusion into the report.
- Localities where pictures were taken will be named in the revised reports
- The political leadership at district and at lower levels were engaged and the response was quite positive. Engaging the political leaders should be continuous process, and not only during consultations.

- The project idea was generated from the Katonga Catchment Management Plan that clearly outlines issues in the catchment and the corresponding hot spots. The process of developing the CMP was quite detailed and participatory. The Victoria Water Management Team will disseminate the CMP.
- Grassroot communities' refers to households who are the custodians of the natural resources, directly affected by climate change impacts, and hence targeted in direct implementation of the project. They may be organized together at village/micro-catchment level and/or in form of Community based organizations in project targeted hotspots.

4.2 Environmental and Socio-economic baselines

- Part of Kyotera falls with the Katonga catchment, but following the criteria set in selection of study sites, it was not included in the study areas.
- Temperature and rainfall reflect that the catchment is experiencing climate change impacts hence the justification of the project. These two define climate scenario in any given area.
- Poverty levels and population data are highlighted in the other reports
- The tables represented stakeholders' views/ perceptions to be enriched accordingly
- Project is designed to be participatory in nature using Integrated Water Resources Management Approach that demands wide consultations. Consultation in the project is designed to be a continuous process, with regular engagements with Catchment Management Organizations/committee

4.3 Vulnerability and Adaptation

- Clarified through pictorials including gardening on roofs with soils acting as insulators from excessive heat, and matrix table showing copping strategies
- Later, there will be a detailed assessment of the status at start of proposed project

4.4 Gender

The comments were generally noted for improvement

4.5 ESIA

An act is the law, while policy is the course of action in fulfillment of the law.

5.0 WAY FORWARD AND CLOSING REMARKS

5.1. Way Forward

This was agreed with the consultants as follows:

- Revised and updated studies be shared with Ministry of Water and Environment, and all consulted stakeholders by 12th April 2021.
- Full proposal with attachments to be submitted to the Ministry by 16th April 2021
- Ministry of Water and Environment to submit proposal to the adaptation fund by 19th April 2019

5.2. Closing Remarks

Commissioner in the Directorate of Water Resources Management, Dr. Callist in his closing remarks thanked the different stakeholders to have spared their valuable time in order to participate in validation of the study reports. He re-echoed the importance of the reports in informing the development of the project proposal due for submission to the Adaptation Fund by the Ministry. The stakeholders were called upon to own-up the planned project initiatives and looked forward to there continued support in future engagements. He noted that these studies were not end but related detailed studies will be commissioned on approval and commissioning of the proposed project. He thereafter officially declared the validation meeting closed.

APPENDIX I. LIST OF PARTICIPANTS FOR FIELD LEVEL CONSULTATIONS

Global Water Partnership Eastern Africa

Ministry of Water and Environment

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Mpumudde S/C Date: 22-01-2020

NO	Name	Institution/Designation	Telephone	Email	Signature
1	ALICE BIGIRWA	C/PERSON L.C I	0758261537	-	
2	Mpenja Rosemary	C/Person LCI	0754599411	-	
3	Nuwamanya	DPAC Member Kyanvonde	0757619497		
4	Rashonyaga	Member	0757		
5	Bakwongogi	Member Mpumudde LCI	0753158196		
6	BAKWISHAMA	" "			
7	KUSIIMA M S.	C Person LC I	0752393468		
8	TUMWINE CHRISTOPHER	C/man for youth	0752098328		
9	ZEFANIYA Kashunbara	member			
10	Kobuyangim	C/person LCI	0755084922		

Global Water Partnership Eastern Africa

Ministry of Water and Environment

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Mpumudde S/C Consultative meeting Date: 22nd/02/2021

NO	Name	Institution/Designation	Telephone	Email	Signature
1	Bigirwenon	Mpumudde C/U	07		
2	Sekate person mpumudde		0757 8662		
3	Turyahebwa	C/person LCI	0757		
4	Kagimi	FLEET C/PS LCI	0757		
5	Mugisha	village CTC	0753511999		
6	Bitosinsha John	C/man. LCI	0751639		
7	BYARUHANGA	Muhamudu	0755562407		

Vulnerability

Global Water Partnership Eastern Africa

Ministry of Water and Environment

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Mpumudde S/C Date: 22nd/02/2020

NO	Name	Institution/Designation	Telephone	Email	Signature
11	Tumwesigye	c/person Council mpumudde	0752443904		
12	Tumusiime Y	C/Person Nyakayanja	0755773407		
13	NAHEREZA	c/p Kangegangegye	0755405205		
14	NABIMANYA.C	C/person Kemboja	0754919790		Nabimanya Collets
15	ACABAH BEN	c/man Kabaan zone	0756697208		
16	NDEBESA ISRAEL	c/man LCII	0774481580		
17	Tukamuhabwa G.	Environment Activist	0752948		
18					
19	Segirinya	Lyantonde district farmer's Association	0784828	Ssegirsuleiman@gmail.com	
20	Sulaiman	Co-ordinator	HO		

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Mpumudde s/c Date: 22nd/02/2020

NO	Name	Institution/Designation	Telephone	Email	Signature
1.	Asiimwe Jonan	Resident	0787654255		
2.	Kabuchaguta	Farmer	0701666542	Amashanabaga@yahoo.com	
3	Tukwatabire Dan	Peasant	0755582762		
4	K.J.A.S.	Bussines	0753729801		
5	Muwanse	Peasant	—	—	n/a

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Mpumudde s/c Date: 22nd/02/2020

NO	Name	Institution/Designation	Telephone	Email	Signature
1	Ampijuka Bernard	Resident/Bikukwa 'A'	0706/724606		
2	Bbosa Samuel	Resident/Buyaga	0753167080		
3	Tinkamwe Abel	Chairman Kanaaga'A	0755816062		
4	Mugaba Pr...	C/Person Mpumudde I/C	0774.517335		
5	Katumwesige Moses	elected c/person LC II Mpumudde s/c	0753822946		
6	Kyamuhangire C/Person LC1 Mpumudde 'B'		0755090072		
7	Kyatiiga Moses	C/Person LC1	0758634127		
8	Kawuuga Nico	Councillor OP	0757197803		

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Mpumudde s/c. Lyantonde. Nia... Date: 22nd/02/2020

NO	Name	Institution/Designation	Telephone	Email	Signature
1.	Tusiime Gilbert	NWMZ/ water office	0772670136	tusiimegilbert@gmail.com	
2.	Kamya Simon	Lyantonde District	0702363801	kamyasimon2012@gmail.com	
3.	Jane Nalubega	Mpumudde s/c	0782851860	nalubegajane@gmail.com	

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Ruyonza s/c Kisagazi parish Date: 23rd/02/2021

NO	Name	Institution/Designation	Telephone	Email	Signature
1	Akhisibwe Vicent		0777736711		[illegible]
2	Mwesigye Charles	Chairman Lri II	0774131664		[illegible]
3	Mwingasingan		0786523877		[illegible]
4	Kobvingye				[illegible]
5	LIVING		0779187058		[illegible]
6	Mugaya Esau		0753883597		[illegible]
7	Mwebaze Rodgers	youth chairperson	0778087904		[illegible]
8	Abaho Living	[illegible] Sec	0755607029	eg Living Abaho	[illegible]
9	Ssekara William CF	Kishagazi Parish	0772094836	[illegible]	[illegible]
10	Rwasimi Abel	Kishagazi parish	0777738902		[illegible]

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Ruyonza s/c Kisagazi parish Date: 23rd/02/2021

NO	Name	Institution/Designation	Telephone	Email	Signature
1-	MWESIGE JANE	WOMAN DISTRICT COUNCILLOR	0774364494		[illegible]
2	NATAMBA ABEL	GEN. SEC. RUYONZA S/C	0779029082	abelnatamba@gmail.com	[illegible]
3-	Mwesige V	VICE CHAIRMAN KISAGAZI VES	0780945737		[illegible]
4	Tumuhimbise	Milik Bones	0789109590		[illegible]
5	Rujumbura S	muliisa	0779811092		[illegible]
6	Katungyi	omutaka	0787629122		[illegible]
7	SEMUS KATESIGWA	omutaka			[illegible]
8.	Muberaka MWESIGWA	omutaka	0774191957		[illegible]
9	Mukaya Nebat	omutaka			[illegible]

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Ryyonza Subcounty Venue | Kishagazi village Date: 23/02/2021

NO	Name	Institution/Designation	Telephone	Email	Signature
1	Tumwekwase	Mirembe V	0778324198		[signature]
2	Tumwebaze E	Mirembe	0774316566 ~~0774316566~~		[signature]
3	Nanguja G.	Mirembe	0779733161		[signature]
4	Nyenenye	Godiriva	0788161234		Nyenenye
5	Nasuuna	Agnes			Agnes
6	Kzironi Kiiza	Kisojo	—		[signature]
7	Bamugirira Charles	Kishagazi	-		B.C
8	Nabaasa Isaac	Mirembe	0777953795		[signature]

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Ryyonza S/C Date: 23rd/02/2021

NO	Name	Institution/Designation	Telephone	Email	Signature
1	Bwerere G		0775944177	0708369171	[signature]
2	Tumwine A		0759082356		[signature]
3	Alisaramu		0774042760		[signature]
4	Mbabazi P				MB
5	Mugume F		0784840441		[signature]
6	Nuoyonzi		0783808796		[signature]
7	Nuntaba		0771570769		[signature]

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Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Ryyonza Subcounty Venue | Kishagazi village Date: 23/02/2021

NO	Name	Institution/Designation	Telephone	Email	Signature
1	Kateramu	Kigozi	0789044468		B
2	Kwizera Afa	Kishagazi	0773538890 0707533903		[signature]
3	Kyarikunda D	Mirembe	0782080145		K
4	Nuwagaba	Mirembe	[illegible]		[signature]
5	Kwaniga	Kisojo	0774860180		[signature]
6	Ampumuza Diana	Kisagazi	0759086721 0778400602		[signature]

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Ruyonza Subcounty / Kichegga Village Date: 23/02/2021

NO	Name	Institution/Designation	Telephone	Email	Signature
01	MUHUMUZA	MIRAMBE	0784742857		Muhumuza
	COLEB				
02	NAMBINZERA	MIRAMBE			Namb
03	Byekwaso	Kisoko	0789152983		Byek
04	Muiru Bunoni	Kisoko East	0774443656		
05	Tumwesigye Wilson	Kisoko East	0774449508		

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Kyegegwa DLG Date: 23rd/02/2021

NO	Name	Institution/Designation	Telephone	Email	Signature
01	Atwikunda Margaret	Kyegegwa DLG	0772771445	atwikundra@gmail.com	Margaret
02	Tumwesigye Wilson	NAKUPART (U) LTD	0772447012	tumwesigyewilson@gmail.com	
03	Mundu Muhumuza Kyegegwa DLG		0772447012		
04	Basoberi Denis	Kyegegwa DLG	0772862050	denisbasozi@gmail.com	
05	Lwamunda Davis	MWE/DWRM/WRM2	0778326948	lwamundadavis@gmail.com	

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Sembabule DLG CAO's office & LCV office Date: 24/02/2021

NO	Name	Institution/Designation	Telephone	Email	Signature
01	DR. KAWOOYA MICHAEL	Sembabule DLG - DPHO	0772381786	KAWOOYA MICHAEL@YAHOO.COM	
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03	KATARINGAYA Wilky	SEMBABULE	0772676917	wkatayinya@yahoo.co.uk	
04	NSEREKO CALEB	NWH2 - WO	0772548156		
05	Lwamunda Davis	MWE, DWRM, WRM2/ Water officer	0782326148	lwamundaD@gmail.com	
06	Bukenya Henry	Sembabule DLG/Forestry officer	0772748983	henrybukenya@yahoo.com	
07	Natwesiga Robert Mugisa	Sembabule DLG/ Environment officer	0776449177	natwesigarobert@gmail.com	
08	Byaruhanga F.	SEO/AG	0772565445	byaruhangafrancis@yahoo.com	
09	Dr. D Ssemwogerere Ebg	District Chairperson Sembabule	0784661312	Ebg.ssemwogerere@yahoo.com	

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Kyaka S/C / Makoole Parish / Nkonge Village Date: 24th/02/2024

NO	Name	Institution/Designation	Telephone	Email	Signature
1	KASUMBA JOHN	media 88.3 Spirit radio	0771393304	kasumbajohn@gmail.com	
2	Rwamasta R.	Kyakacunda (A)	0788444965		
3	Mushabe G.	Ndaluse LC I	0787198216		
4	Tukahumura A.	Kyakacunda C/P LC I	0757000799		
5	Ssewankambo	Ndaluse II	0781522197		

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Kyaka S/C / Makoole parish / Nkonge Village Date: 24th/02/2024

NO	Name	Institution/Designation	Telephone	Email	Signature
1	LUBEGA MOSES GONZAGA	NKONGE	0782542711	lubegagg@gmail.com	
2	KIASUKE THADEO	LWEMIYAGA	0773958731	[illegible]	
3	NAMUBIRU JANIAH	KAKOOMA	0703898229	—	JANIAH
4					
4	Suguna	Lowlonca	0709555757	11	Suguna

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Kyaka S/C / Makoole Parish / Nkonge Village Date: 24th/02/2024

NO	Name	Institution/Designation	Telephone	Email	Signature
1	MUGUZI	farmer	0787813747		
2	[illegible]	farmer	0780241161		[illegible]
3	Masanda Peace	Pastor - Lukaale Parish	0785781313	-	
4	Lugalesi Muhamad	c/person and farmer	0782453275	-	LPO Lesto
5	Mabonzi Grace	farmer	0781747726		Grace

Ministry of Water and Environment

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Kyaka S/C / Makoole Parish / Nkonge Village Date: 24th/02/2024

NO	Name	Institution/Designation	Telephone	Email	Signature
1	Byakwasa Fred	parish chief kakoma	0777890482	-	
2	Okonga Deo	Kyakacunda II	0755455921	-	
3	Tumuhairwe Ndaluse MALCI		0788408306	C/Person	
4	CHEMONGES STEPHEN	farmer kyakacunda II LCI	0703785564		
5	Janat Nandawula	A.V.O Lwemiyaga	0781827870	2010@gmail.com Nandawula Janat	

Global Water Partnership Eastern Africa

Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Kyeera s/c / Makoole Parish / Bikonge Village Date: 24th / 07 / 2021

NO	Name	Institution/Designation	Telephone	Email	Signature
1	Mugaba Isae	Kakooma	0777015211		
2	Bakigaiwilson	Kiruruma			
3	Ssaccijjivu Lennox	Ludumyogo Agriculture officer	0753-183877	lennoxlennox@gmail.com	
4	Kabogo	yoma			
5	Ruhunga	Kalukuru	0774176956		
6	Byafera Johnson	Kiruruma	0784014935		

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Kyeera s/c Officers

Registration Form- Field Trip

Venue: Kyeera S/C / Makoole Parish / Bikonge Village Date: 24th / 07 / 2021

NO	Name	Institution/Designation	Telephone	Email	Signature
01	BASEMZA F	C/PERSON LC1 KYEERA	0787313191		
02	Lovens: Kares:	Councillor makoole	0755159522		Kares.
03	Kabijito Hussein	SAS Lwamiyaga s/c	0752884983		
04	Ndeebwa	C/P. Kyakacwinde C	0788311598		
05	Byamukama?	C/P. LC1 NYALWE II	0774865316		

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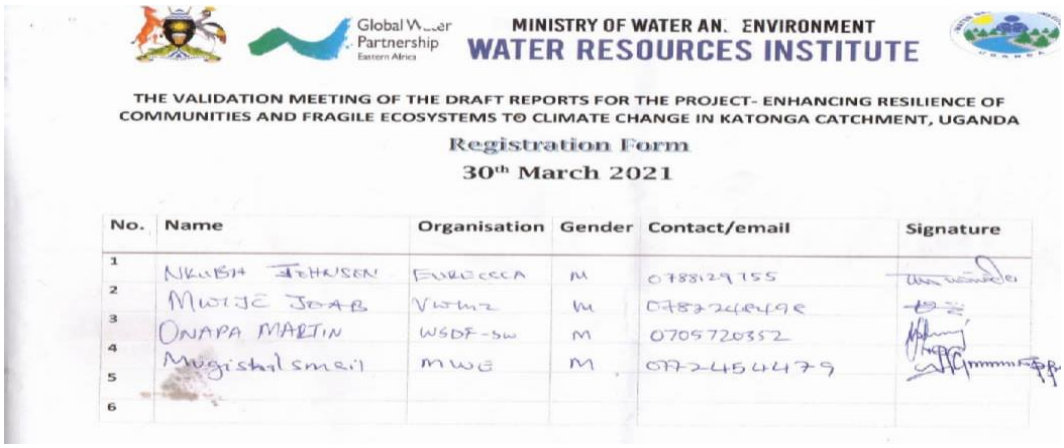
Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment, Uganda

Registration Form- Field Trip

Venue: Kalungu District Officers Date: 25th / 07 / 2021

NO	Name	Institution/Designation	Telephone	Email	Signature
1.	Nnalugwa F	Kalungu DLG Nplanner	0772616570	faustannalugwa@gmail.com	
2.	Ruzema Rita	District CDO	0701112767	ruzemarita1964@gmail.com	
3	Bernard Zephe	DNRO	0772-577448	zephercor.bakia@gmail.com	
4.	TUSIIME GILBERT	VWM2/ water officer	0772640136	tusiimegilbert@gmail.com	
5.	Tumwesigye K. Anthony	Mayopani U. LTD	0772457612	tumwesigye@gmail.com	
6.	SEMAALA Amos	Forest Officer	0766288994	semaalaamos@yahoo.co.uk	
7.	Vvube Richard	ENVT Officer (KDLG)	0782328148	richardsVvube@gmail.com	

APPENDIX II. LIST OF NATIONAL VALIDATION WORKSHOP PARTICIPANTS



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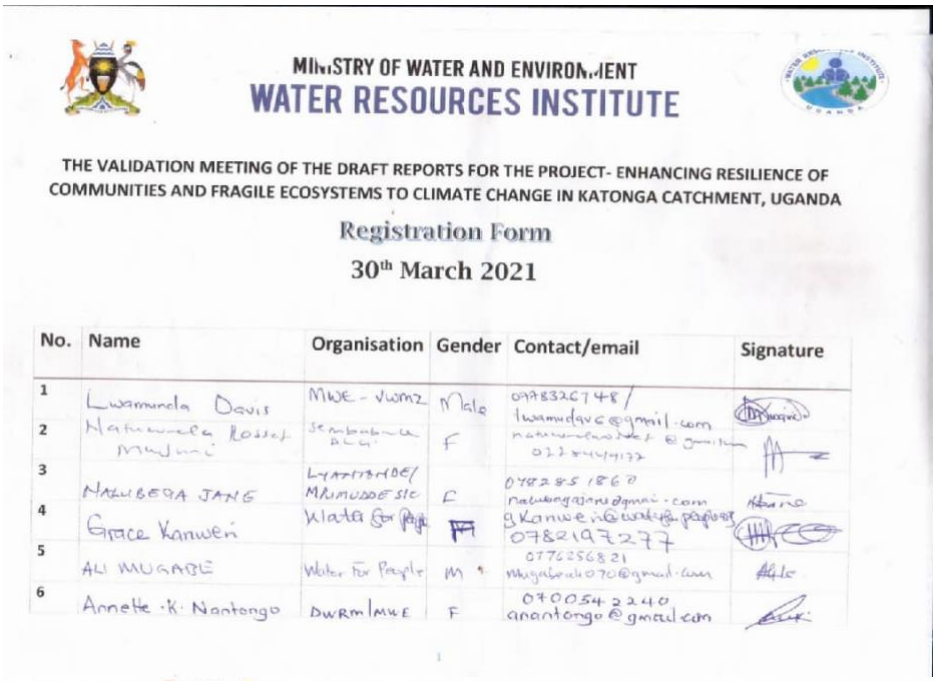
WATER RESOURCES INSTITUTE

THE VALIDATION MEETING OF THE DRAFT REPORTS FOR THE PROJECT- ENHANCING RESILIENCE OF COMMUNITIES AND FRAGILE ECOSYSTEMS TO CLIMATE CHANGE IN KATONGA CATCHMENT, UGANDA

Registration Form

30th March 2021

No.	Name	Organisation	Gender	Contact/email	Signature
1	NKUBH JOHNSON	EURECCCA	M	0788129755	
2	MWIJE JOAB	VWMZ	M	0782246498	
3	ONAPA MARTIN	WSDF-SW	M	0705720352	
4	Mugishal smail	MWE	M	0772454479	
5					
6					



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THE VALIDATION MEETING OF THE DRAFT REPORTS FOR THE PROJECT- ENHANCING RESILIENCE OF COMMUNITIES AND FRAGILE ECOSYSTEMS TO CLIMATE CHANGE IN KATONGA CATCHMENT, UGANDA

Registration Form

30th March 2021

No.	Name	Organisation	Gender	Contact/email	Signature
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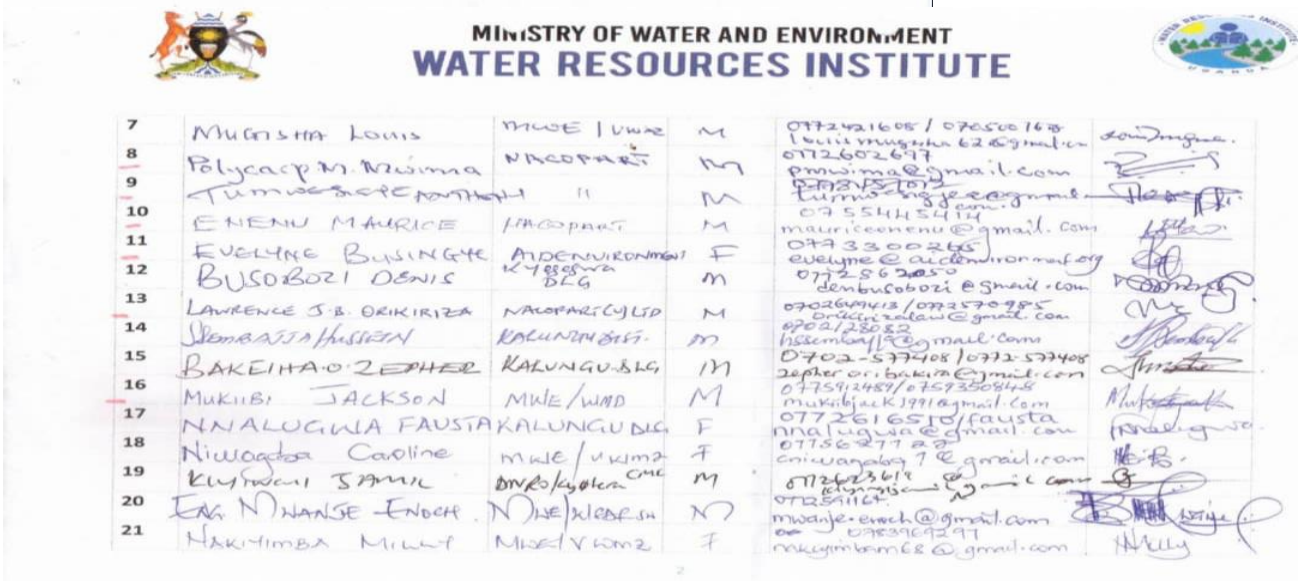
5	ALI MUGABE	Water For People	M	0776256821 mugabeali070@gmail.com	
6	Annette K. Nantongo	DWRM/MWE	F	0700542240 anantongo@gmail.com	



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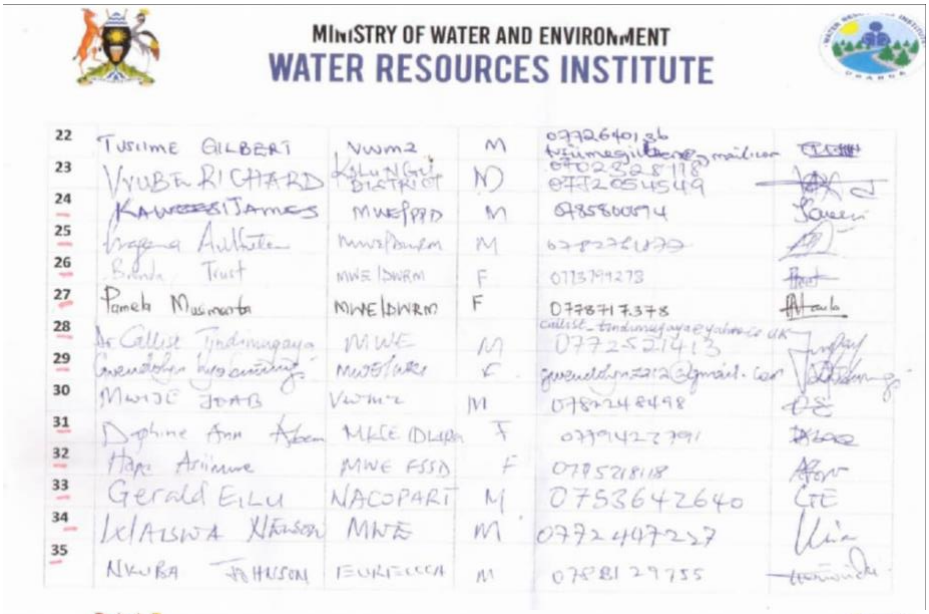
21	NAKIYIMBA MILLY	MWE/VWMZ	F	0783969297 nakiyimbam68@gmail.com	



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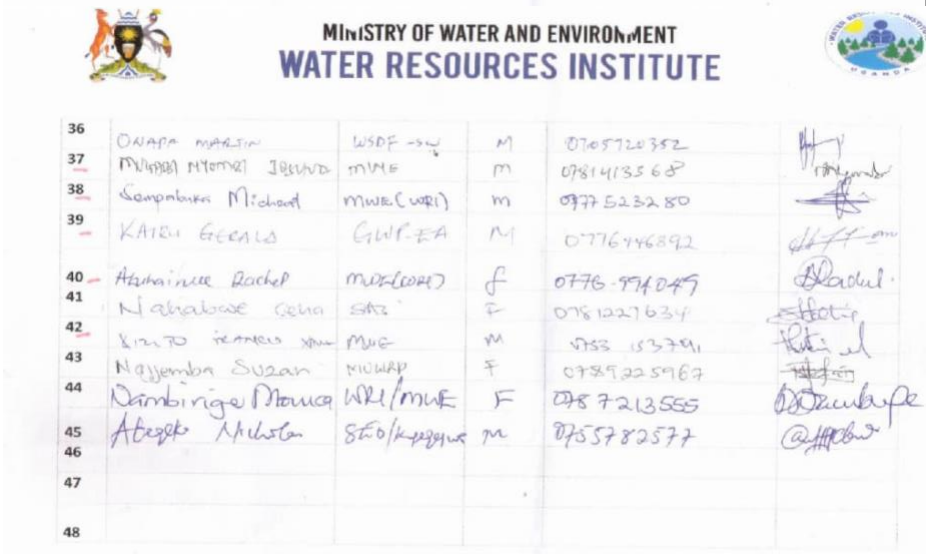
23	VYUBE RICHARD	KOLUNGU DISTRICT	M	0702328118 0772054549	[illegible]
24	KAWEESI JAMES	MWE/PPD	M	0785800974	[illegible]
25	Kagema Authuten	MWE/DWRM	M	0782761879	[illegible]
26	Bonda Trust	MWE/DWRM	F	0773799273	[illegible]
27	Pamela Musimenta	MWE/DWRM	F	0778717378	[illegible]
28	Dr Callist Tindimugaya	MWE	M	callist_tindimugaya@yahoo.co.uk 0772521413	[illegible]
29	Gwendolyn Kyobutungi	MWE/WRI	F	gwendolyn2212@gmail.com	[illegible]
30	MWIJE JOAB	VWMZ	M	0782248498	[illegible]
31	Daphine Ann Aboom	MWE/DWRM	F	0779427791	[illegible]
32	Hope Asiimwe	MWE FSSD	F	0775218118	[illegible]
33	Gerald EILU	NACOPART	M	0753642640	GE
34	KIAISWA NELSON	MWE	M	0772447227	[illegible]
35	NKUBA JOHNSON	EURECCCA	M	0788129755	[illegible]



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36	ONAPA MARTIN	WSDF-SW	M	0705720352	[illegible]
37	MUGABA NYOMBI JESUND	MWE	M	0781413568	[illegible]
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39	KATRU GERALD	GWP-EA	M	0776446892	[illegible]
40	Akuhainuse Rachel	MWE(WRI)	F	0776-994049	[illegible]
41	Nahabwe Seha	SAS	F	0781227634	[illegible]
42	Kizito Francis Xavier	MWE	M	0753 153791	[illegible]
43	Najjemba Suzan	MWWRP	F	0789225967	[illegible]
44	Nambirige Monica	WRI/MWE	F	0787213555	[illegible]
45	Ategeko Nicholas	SEO/Kyegegwa	M	0755782577	[illegible]
46					
47					
48					