Lake Victoria Basin Ecosystem-based Adaptation: An Intervention on transboundary climate change adaptation

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1.0 INTRODUCTION

The Adapting to Climate Change in Lake Victoria Basin Pilot Project aimed at mitigating and adapting to the adverse effects of climate change in the Lake Victoria Basin that spans across Burundi, Kenya, Rwanda, Tanzania and Uganda. The Basin hosts over 40 million inhabitants of East Africa. This 4-year pilot project (2018-2021) of USD 5 million was funded by the Adaptation Fund and coordinated by the Lake Victoria Basin Commission. It focused to reduce the negative impacts of climate change on local communities and water dependent sectors in the Basin, most specifically, by building the capacity of the five governments to establish a Basin-wide framework to guide adaptation actions.

Central to this project's activities was Ecosystem-based Adaptation, that harnessed nature and ecosystem services to build community resilience to climate change or nature-based solutions. Other interventions included training in adaptation solutions, water catchment management, water conservation techniques, climate-smart agriculture, and the production of detailed and 'downscaled' climate information and forecasts. This transboundary pilot was implemented in selected hotspot areas; in two Provinces of Burundi, one District in Rwanda, one district in Tanzania, two counties in Kenya, and two districts in Uganda.

2.0 THE PROBLEM

Climate change in the Lake Victoria Basin (LVB) has led to higher temperatures and increased variability in seasons and rainfall intensity. Extreme episodes of droughts resulting in low flows in the rivers in dry spell and intensive rainfall in parts of the basin leading to devastating floods, destructions, loss and damages. The unsustainable use of natural resources, exacerbated by a rapid population growth, degraded woodland and wetland ecosystems around the lake, has led to soil erosion and poor water quality. Rural communities, who depend on fishing and farming, have been experiencing a reduction in fish stocks and agricultural productivity around Lake Victoria. This mounted pressure on subsistence livelihoods, commercial activities, and food security. By promoting sustainable resource management, improving climate resilience and enhancing livelihoods, the pilot project served to protect the Basin's fragile ecosystems and improve the well-being of its 40 million inhabitants.

3.0 TECHNOLOGIES AND METHODS

The pilot project focused to increase climate resilience through the **transfer and implementation** of adaptation technologies and the improvement of adaptation knowledge in the Basin. This included introducing **climate-smart agriculture,** which sustainably increased productivity, enhances resilience, and increased local incomes. The project applied **Ecosystem-based Adaptation** approaches through **ecosystem restoration** and conserving **woodland and wetland habitats,** which helps control soil erosion, extends the lifespan of water reservoirs, and improves water quality.

Ecosystem-based Adaptation techniques were demonstrated to local communities in **'home gardens'** small household plantations that contain a variety of crop species and through **agroforestry**, whereby trees are grown among crops to increase or protect crop yields.

To promote innovative adaptation approaches, **community-based projects** were established with the objective of addressing climate impacts by drawing on **indigenous/ local knowledge and technologies.**

For sustainability purposes, the pilot project aimed to create climate-resilient approach to water **catchment management,** notably through strengthened institutional coordination mechanisms, capacity-building and access to knowledge products. **Training** was structured to benefit Local communities, Civil Society, Private sector and Government Officials at the local, national and regional/basin levels to increase technical **capacity of** local communities to carry out adaptation measures.

Government Staff and National experts from all the 5 countries were trained on '**downscaling' of regional climate information** into more precise locations. This helped local communities enormously in their preparations for extreme weather.

4.0 KEY TARGETS

a) 1,000 hectares of agricultural land and woodland rehabilitated;
b) 1,500 individuals benefitting from small-scale community based projects; and
c) 500 Community members trained on climate change adaptation technologies

5.0 RELEVANCE TO SUSTAINABLE DEVELOPMENT GOALS (SDG 2, 13, & 15)

This LVB transboundary pilot project has relevance to;
SDG 2: Zero Hunger: - Boosting food security by rehabilitating 1,000 hectares of agricultural land with climate-smart agriculture, and increasing fish by strengthening water catchment management; *SDG 13: Climate Action*: - Building local communities' resilience to climate change by providing 120 policy makers and experts with 'downscaled' climate forecasts, training community members on adaptation technologies, and carrying out ecosystem-based adaptation; and *SDG 15: Life on Land*: - Restoring at least 500 hectares of woodland in Lake Victoria's catchment area to improve soil fertility and increase fish stocks (using an ecosystem- based adaptation approach).

6.0 ACHIEVEMENTS

One of the key achievements was the successful implementation of **climate-resilient agricultural practices**, benefiting over **50,000 smallholder farmers**. These practices resulted in **30% increase** in crop yields on pilot fields, ensuring food security for vulnerable communities. Additionally, the project facilitated the establishment of **20 climate-smart fish farming enterprises**, adding **40 tonnes of fish per year** to the L. Victoria Basin fisheries industry and creating livelihood opportunities for **5,000 people**.

The pilot project further made remarkable progress in enhancing the adaptive capacity of communities in the Lake Victoria Basin. Up to **10,000** (way beyond target of 500) **local community** members, majority of which are women were trained and empowered to become climate change champions, promoting sustainable practices and knowledge dissemination. As a result, **100 community-led** climate change adaptation initiatives have been implemented, ranging from afforestation and reforestation efforts to the installation of renewable and or energy saving systems. In Uganda, communities were trained in the production of Household energy saving cooking stoves and **500 households** energy cooking stoves were constructed. Participating schools have reduced their firewood consumption by 66%, thereby reducing their reliance on fossil fuels and contributing to a 40% reduction in their carbon footprint.

7.0 LESSONS LEARNT

Inclusivity, collaboration and empowerment: The holistic approach and collaborative nature of the project allowed for the effective institutional coordination of efforts among various stakeholders, including local communities, government agencies, and international organizations. This inclusive approach has **built strong partnerships** and stimulated stakeholder driven initiatives to climate adaptation. It has demonstrated how climate financing can be channelled from the global institutions to the grass root communities that are most vulnerable to climate change impacts.

The project demonstrated the importance **community empowerment**: **information sharing**, incorporating indigenous knowledge and peer to peer learning into climate change adaptation strategies, resulting in solutions tailored to the specific needs and contexts of the Lake Victoria Basin. The successful implementation of the pilot project, with its valuable experiences, makes it an attractive model for upscaling within the Basin and replication in other transboundary Basins.

8.0 PROJECT PARTNERS

Member States of Burundi, Kenya, Rwanda, Tanzania and Uganda, The East Africa Community; Intergovernmental Authority on Development (IGAD)- Climate Prediction and Application Centre (ICPAC); Famine Early Warning System Network (FEWSNET); and SERVIR-East Africa/ Regional Centre of Monitoring for Regional Development (RCMRD).