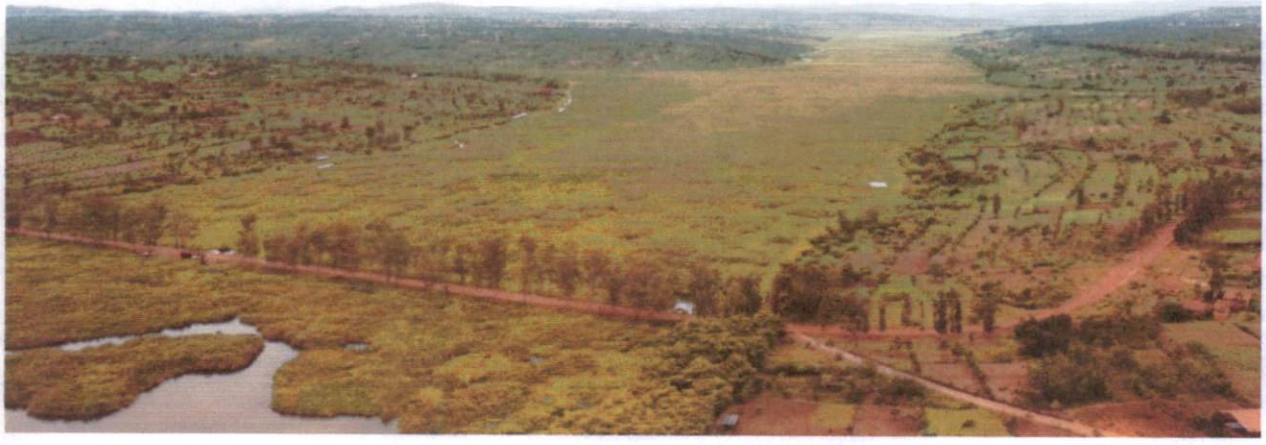
FINAL HANDOVER REPORT



BETWEEN

RWANDA ENVIRONMENT MANAGEMENT AUTHORITY

AND

BUGESERA DISTRICT

IMPLEMENTATION OF LDCF II PROJECT IN BUGESERA DISTRICT (2017-2023)

June, 2023

I. INTRODUCTION AND BACKGROUND OF LDCF II PROJECT

Rwanda Environment Management Authority (REMA) implemented the project titled: "Building resilience of communities living in degraded forests, savannahs and wetlands of Rwanda through an Ecosystem-based Adaptation (EbA) approach", referred to as the LDCF II project. The project was funded by Global Environment Facility (GEF) under the Least Developed Countries Fund (LDCF), climate change adaptation focal area, with United Nations Environment Programme (UNEP) as the GEF Implementing Agency. The main objective of the project was to increase the capacity of Rwandan authorities and local communities to adapt to climate change by implementing Ecosystem based Adaptation (EbA) interventions in degraded forests, savannahs and wetlands. The project was implemented in Gasabo, Kirehe, Kayonza, Bugesera, Ngororero, and Musanze Districts from 2017 to 2023.

The project had the following three components:

Component 1: National and local institutional capacities strengthened for implementation of EbA approach to increase resilience of local communities to climate change;

Component 2: Policy, planning and legislation strengthened for adaptation to climate change;

Component 3: EbA interventions that reduce vulnerability and restore natural capital.

In Bugesera District, four (4) main subprojects were implemented under the LDCF II Project, namely:

A. - Restoration of Lake Cyohoha North on 115 Ha by removal of aquatic weeds
B. - Restoration and rehabilitation of Murago Wetland on 52 Ha
C. - Supply and installation of solar powered irrigation system on 34 Ha
D. - Supply and installation of rainwater harvesting plastic tanks (254)

In close collaboration between Districts and REMA, LDCF II project was successfully implemented to reduce vulnerability to the negative effects of climate change to the local communities in the sites of the project intervention.

II. RATIONALE OF THE PROJECT

Bugesera District is one of the areas in Rwanda experiencing impacts of climate change, including increased mean temperature and erratic rainfall. Erratic rainfall results in flooding events during rainy season and prolonged drought during dry season. Consequently, local communities are affected and vulnerable to climate change due to decreased agricultural productivity, water quantity and quality, fish stock etc.

Ecosystems in the District including Murago wetland and Lake cyohoha north that provide a wide range of regulating services such as flood mitigation and water provisioning were at risk due to unsustainable use of natural resources. Subsequently, this was increasing local communities' vulnerability to observed and anticipated climate change.

To reverse the trend and create conditions for the region's sustainable development, it was necessary to develop projects that improve local communities' livelihoods while preserving and conserving its natural resources leading to the building of resilience capacity of population to adapt to climate change effects.

III. DETAILS OF LDCF II PROJECT ACHIEVEMENTS

A. RESTORATION OF LAKE CYOHOHA NORTH ON 115 HA BY REMOVAL OF AQUATIC WEEDS.

A.1. General objective

The main objective of the project was to restore the Lake Cyohoha North ecosystem using Ecosystem-based Adaptation (EbA) approach to increase the resilience of local communities living adjacent to the lake to the observed and anticipated effects of climate change.

A.2. Specific objectives

- Mobilize and sensitize the local population on the use of Ecosystem-based Adaptation (EbA) approach to restore degraded lakes and other water source ecosystems and on environmental law in general;
- Restoration of Lake Cyohoha North by removing water hyacinth on 115 Ha;
- Training of beneficiaries on making organic fertilizer from water hyacinth waste.

A.3. Performed activities

- 1,437 beneficiaries in Ngeruka Sector were sensitized and mobilized on water hyacinth removal techniques.
- Aquatic weeds like water hyacinths, *imishabishabi* and *imigorogonzo* were removed in Lake Cyohoha North on 115 Ha;
- 120 beneficiaries were trained on making organic fertilizer from water hyacinth waste

A.4. Used budget

Subproject	Activities	Overall targets (Ha)	Overall achievements (Ha)	Overall achievements in %	Budget used
Restoration of Lake Cyohoha North	Removal of water hyacinth and all other invasive species	115	115	100%	287,237,647 RWF

Before intervention

After restoration

Overview of Lake Cyohoha North after LDCF II project intervention

B. RESTORATION AND REHABILITATION OF MURAGO WETLAND ON 52 HA.

B.1. General objective

The main objective of the project is to restore the Murago Wetland ecosystem to increase resilience of local communities living adjacent to the wetland to the observed and anticipated effects of climate change.

B.2. Specific objectives

- Mobilize and sensitize the local population on the use of Ecosystem-based Adaptation (EbA) approach to restore degraded wetland ecosystems and on environmental law in general;
- Restoration of Murago wetland on 52 Ha by:
  - ➔ Creating a demarcation line of the buffer zone on 26km
  - ➔ Plantation of bamboo on 13 Ha
  - ➔ Planting agroforestry trees/shrubs on 34 Ha

B.3. PERFORMED ACTIVITIES AND COST

Project	Activities	Overall targets	Achievements	Overall Achievements in %	Budget
Restoration of Murago wetland	Create a demarcation line of the buffer zone	26km	26km	100%	32,132,835 RWF
	Plantation of bamboo	13ha	13ha	100%	
	Plantation of Agroforestry	34ha	34ha	100%	

Murago wetland before restoration

Overview of the restored Murago wetland

Watershed of Murago wetland before restoration Restored watershed of Muago wetland

C. SUPPLY AND INSTALLATION OF SOLAR POWERED IRRIGATION SYSTEM ON 34 HA

C.1. General objective

The project objective is to restore the Murago Wetland ecosystem to increase resilience of local communities living adjacent to the wetland to the observed and anticipated effects of climate change, by using the irrigation technology in their daily agriculture activities.

C.2. Specific objectives

- Mobilizing and sensitizing the local population on the use of the solar powered irrigation system;
- Supply and installation of the irrigation system on 34 Ha;
- Training of beneficiaries on making the organic compost;
- Training of beneficiaries on use and valorization of solar irrigation system and development of horticulture;
- Training of beneficiaries on maintenance of the infrastructure and community engagement towards the sustainability of the project;
- Follow up on the use and valorization of the system.

C.3. Performed activities

- 94 members of KOMEZIMIHIGO MUHINZI cooperative in Mareba Sector, Rugarama Cell were mobilized and sensitized on the use of the solar powered irrigation system;
- Solar powered irrigation system was supplied and installed on 34 Ha in Rugarama cell, Mareba Sector.

Subproject	Overall target (Ha)	Overall Achievement (Ha)	Percentage of achievement	Budget
Supply and installation of solar powered irrigation system	34	34	100%	**309,491,452 (RWF)**

Solar irrigation system installed in the buffer zone of Murago wetland

Beneficiaries developed horticulture crops like onions, pepper, beans, tomatoes, etc

Installed infrastructures of solar irrigation system in Rugarama cell, Mareba Sector

D. SUPPLY AND INSTALLATION OF WATER HARVESTING PLASTIC WATER TANKS (254)

D.1. General objective

The main objective of the project was to increase capacity of Rwandan authorities and local communities to adapt to climate change by implementing Ecosystem based Adaptation (EbA) interventions in degraded wetlands.

D.2. Specific objectives

- supply and installation of 254 plastic water tanks

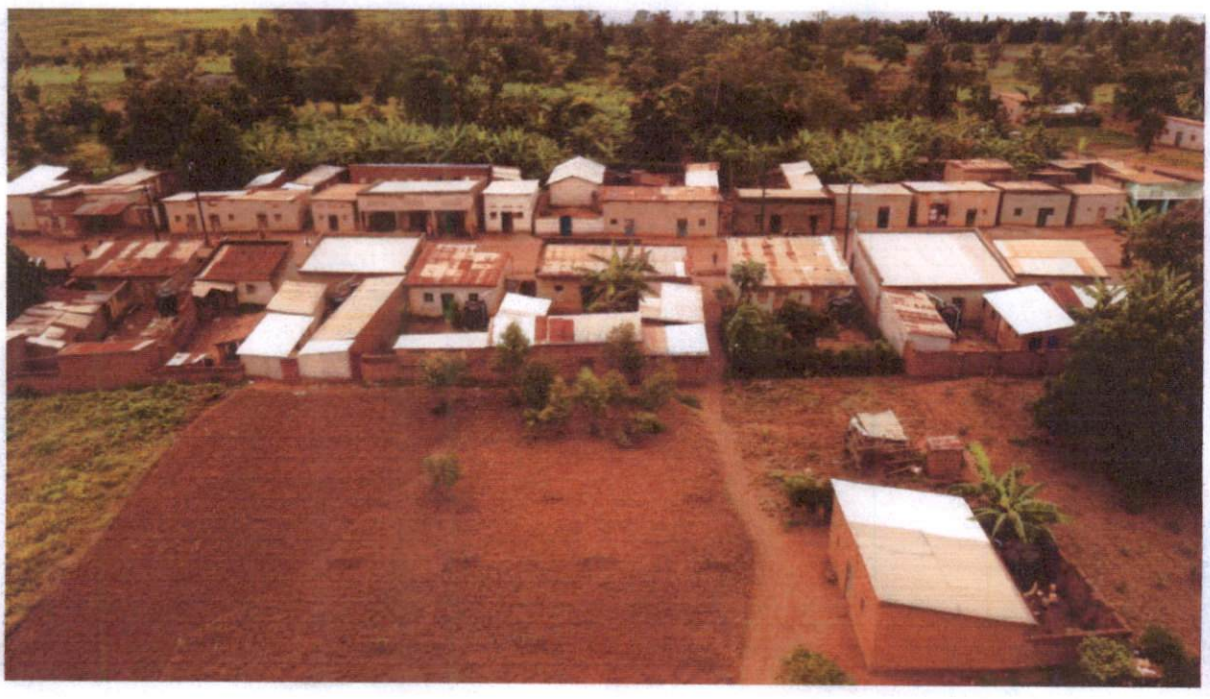
D.3. Performed activities

- 254 Plastic water tanks are supplied and installed in Rugarama Cell, Mareba Sector

Project	Overall target	Overall achievement	Percentage of achievement	Budget

Supply and installation of water tanks	254 tanks	254 tanks	100%	116,510,000 RWF

Installed water tanks in 254 households of Rugarama cell, Mareba Sector



Water tanks are installed in Murago centre in the watershed of Murago wetland

IV. ROLES AND TASKS OF PARTIES DURING THE PROJECT IMPLEMENTATION

a. Roles and Tasks of REMA

- Monitoring and Evaluation of the project's activities
- Funds disbursement
- Providing technical support to the beneficiaries in collaboration with Bugesera District
- Providing capacity building to project beneficiaries in collaboration with Bugesera District

b. Roles and Tasks of the District

- Community awareness and mobilisation
- Implementation of activities through public procurements laws and regulations
- Ensure proper management of funds
- Project progress reporting
- Payment of executed activities (works & services)

V. SUSTAINABILITY OF PROJECT ACTIVITIES

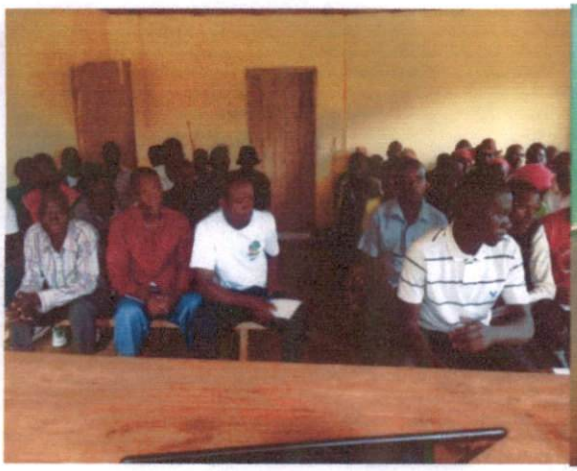
A. Sustainability initiatives

For ensuring the sustainability of project activities, LDCF II project has emphasized the building of capacity of beneficiaries around Lake Cyohoha North and Murago Wetland by organizing mobilisation meetings, trainings and study tours for the benefit of the local population.

- 1,437 local populations in Ngeruka Sector were trained on removal of aquatic weeds like water hyacinth
- 94 members of KOMEZIMIHIGO MUHINZI Cooperative in Mareba Sector were trained on making organic compost from aquatic weeds. 24 compost piles have been prepared and produce approximatively 204 tons of organic compost. The

objective of the training was to promote the use the organic compost to boost soil fertility and increase agricultural production.

- 94 members of KOMEZIMIHIGO MUHINZI cooperative were mobilized and trained on use and maintenance of solar powered irrigation system



A management committee of irrigation equipment was voted.

- 8 Leaders of Komezimihigo cooperative and 6 local authorities had a field visit of solar powered irrigation techniques in Nyagatare District.

Representatives of LDCF II project beneficiaries during the study tour in Nyagatare district to see different irrigation projects

- 573 focal points for environment (*Imboni z'ibidukikije*) at each village were mobilized on environmental protection.

The Director General of REMA addressing her remarks during the awareness event on environment and climate change.

B. Sustainability plan

- **Responsibility of the District**

1. The District shall continue the mobilization of farmers around Lake Cyohoha North and Murago Wetland to keep maintaining the buffer zone.
2. The District will together with Rwanda Environment Management Authority (REMA) and the Rwanda Water Resources Board (RWB) develop a Management Plan that outlines the monitoring of water level and extraction rates and allocates responsibilities for regulating water use for irrigation and ensuring environmental flows in the Lake Cyohoha North and Murago Wetland.
3. The District will keep providing technical assistance and support in maintenance and valorization of the solar irrigation system in collaboration with Rwanda Agriculture Board (RAB).
4. The District will keep mobilizing beneficiaries to make sure that irrigation system is operational and is valorized and the livelihoods improved.
5. The District will organize continued training on functioning of the irrigation system, as needed.

- **Responsibility of direct beneficiaries**

1. Beneficiaries will continue the maintenance of Lake Cyohoha North and Murago Wetland by respecting the boundaries of the buffer zone and removing the aquatic weeds.
2. Beneficiaries will be responsible for rehabilitation and maintenance of supplied water tanks as well as the established solar irrigation system.

VI. LESSONS LEARNT AND OUTCOMES FROM LDCF II PROJECT IN BUGESERA DISTRICT

- **With effective training and awareness activities, relevant knowledge and skills were provided to community and therefore previous environmental degradation agents can become the champions of environment protection**: Two Cooperatives (ISANO for fishers and KOMEZIMIHIGO for horticulture farmers) in Ngeruka and Mareba sectors were born from those that used to encroach lakeshores and wetland by conducting illegal agriculture practices. They benefited from works aimed at environmental protection on both removal of invasive grass from Cyohoha North and Umurago wetland; later alone they get supported by receiving irrigation scheme whereas others profited from the cleanness of the lake and fish production get multiplied. These cooperatives are now among the brilliant ones in the District.
- **Solar energy to build resilience to climate change and environmental protection:** The high level of sunlight that used to cause drought among farms and lead farmers to encroach the wetland buffer zones with illegal agriculture practices has now become the potential source of irrigation on 34 ha for permanent agriculture practice by use of water from the formerly-degraded Murago Wetland throughout the year.

- **Restoration of the Lake and the wetland has provided access to the ecosystem services to the communities** such as (i) maritime transportation that connects Mayange, Musenyi, Mareba and Ngeruka Sectors; (ii) increased production of fish from 900 kg to 3,450 kg of fish per month and (iii) availability of water for domestic use, and irrigation activities during the drought.
- **Green Jobs creation and livelihood improvements:** A large part of the budget allocated to this project goes to the local beneficiaries through the daily working activities. 3,140 people got a job in this project from 2018 up to June 2022. The project has empowered members of ISANO cooperative and they have

supported mutually through fishing income, and managed to procure 181 cows to their members.

- **Knowledge and skills gained on solar system technology**: Beneficiaries are now using the solar system and saving money instead of use of fuel. The use of the solar system reduces pollution caused by the use of fuel oil, and contributes to mitigating and building resilience to climate change. The land which was not exploited because it was far from the water source is now exploited. People are growing vegetables and are linked to the external market.
- **Capacity building:** The project beneficiaries have acquired appropriate knowledge and skills in the project-related activities and thus can serve elsewhere as local experts for tree nursery, tree plantation, aquatic weed removal and solar-powered irrigation technology.
- **Social cohesion built:** the project has increased the social integration, cohesion, trust and solidarity among the community beneficiaries.
- **Women's Economic Empowerment:** the project was gender sensitive, and hence contributed much to women's economic empowerment. Most of the women reported that they generated income from the project activities. This increased their sense of value and confidence, since they are now contributing to the household's welfare while they were previously often considered as powerless persons by their husbands.
- **Soil erosion control:** planted trees, erosion ditches and buffer zones play the role to reduce runoff or its velocity, to minimize soil erosion, to conserve soil moisture and fertility, to facilitate cropping operations, and to promote intensive land use and permanent agriculture on slopes.
- **Participatory/consultative approach:** the implementation of the project generated a behavioral change among the beneficiaries, as they are involved in all processes of the project and their views are taken into consideration.
- **Project technical assistance in Districts:** for the better implementation of the project in the District, technicians have been empowered in awareness to facilitate and monitor the project implementation.

VII. Conclusion and recommendations

Bugesera District is grateful for the existing collaboration between the Government of Rwanda through Rwanda Environment Management Authority (REMA) and the Global Environment Facility (GEF) through United Nations Environment Programme (UNEP) under the GEF Least Developed Countries Fund (LDCF) for the continuous support to Bugesera District. Through this cooperation, all activities under this project costed Seven hundred forty-five million, three hundred seventy-one thousand, nine hundred thirty-four Rwandan Francs (745,371,934 FRW). We are committed for sustainable management of the project achievements and look forward to continuous support to the environmental protection in general and mitigation and adaptation to climate change in particular.

The LDCF II project has been successful in all its activities as planned. Community appreciated the achievements as they were actively involved in all processes including planning and implementation process. Community has gained much knowledge, skills and assets to play their role in environment protection, ecosystem rehabilitation and livelihood support through income generating activities. The community is now witnessing the fruits of these activities as they boosted on considerable development. However, some recommendations and interventions have to be set to ensure sustainability of the project.

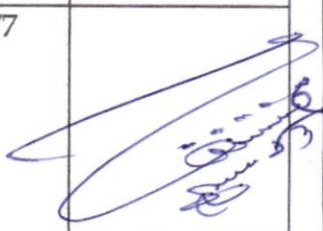
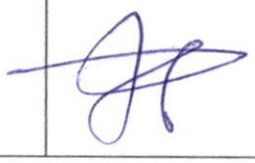
1. District will continue the mobilization of the beneficiaries on the maintenance of bamboo and agroforestry trees and to avoid the illegal activities in the buffer zone.
2. District and RAB will keep providing technical assistance to the community and support in maintenance and valorization of irrigation system for sustainability purpose.
3. The mobilization of beneficiaries will be a continuous activity to make sure that irrigation system is operational and is valorized by all beneficiaries.

4. The District will avail the budget for supporting cooperative in the maintenance of solar irrigation system.
5. REMA and RAB will reinforce the use and valorization of organic compost.
6. The district with collaboration with REMA and RWB will develop management plan to monitoring water levels, quality and extraction rates.

Approved by:

A. Technical team

On behalf of Bugesera District

Names	Position	Email	Telephone	Signature
MUKUNZI Emile	Ag. Director Agriculture and Natural Resources Management	emukunzi74@gmail.com	0788513177	
NIYITEGEKA Servand	LDCF II District Environment Officer	servandn2020@gmail.com	0788627905	

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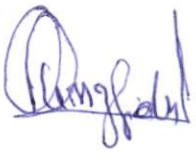
NINZIZA Fidelite	LDCF II Coordinator/EbA Specialist	fninziza@rema.gov.rw	0788474445	

B. Management

On behalf of Bugesera District

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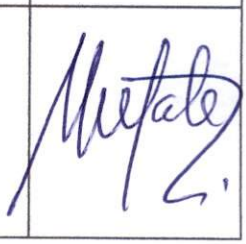
MUTABAZI Richard	Mayor of the District	mayor@bugesera.gov.rw	0788454354	

On behalf of REMA

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