Rwanda Investment Benefits from the Nile Basin Cooperation

The 80MW Regional Rusumo Falls Hydroelectric Project, construction was 99% incomplete by June 2023.

Water Supply System in Ngoma District of Rwanda that is serving three sectors with a population of 10,000 people. The project was funded by the World Bank through the LADP Project.

New Kigina Dispensary, a local area development project through the Regional Rusumo Falls Hydroelectric Project. The health centre serves 10,000 people from Kirehe District and neighboring areas.
The Nile Equatorial Lakes Subsidiary Action Program Coordination Unit (NELSAP-CU) headquartered in Kigali, Rwanda, is one of the two investment programs of the Nile Basin Initiative (NBI), the other being the Eastern Nile Subsidiary Action Program (ENSAP) headquartered in Addis Ababa, Ethiopia known as Eastern Nile Technical Regional Office (ENTRO). NELSAP-CU was established in December 1999 by the Council of Ministers for Water Affairs in the Nile River Basin, with a mission to “contribute to the eradication of poverty, promote economic growth, and reverse environmental degradation in the Nile Equatorial Lakes (NEL) region, within the overall NBI’s shared Vision of sustainable socioeconomic development and the equitable use of and benefit from Nile Basin water resources”. NELSAP-CU is governed and reports to the Council of Water Ministers from 10 Nile Basin membership states of Burundi, DR Congo, Egypt, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania and Uganda.

NELSAP-CU within its mandate facilitates jointly agreed transformative in-country projects with regional impact/significance and trans-boundary cooperative investment projects related to the common use of the Nile Basin water resources. It also builds regional capacity of countries and provides a platform for implementation coordination of trans–boundary investment projects. NELSAP-CU renders support to national initiatives and focuses on two investment areas of: (i) power development and trade; and (ii) natural resources management and development. NELSAP-CU has prepared a number of cooperative in country and regional trans-boundary projects, which are at various levels of preparation and implementation. NELSAP-CU has mobilized finances for pre-investment and investment projects cumulatively totaling to USD 1.050 billion (pre-investment USD 557.107 million and for investment projects USD 493.018 million). Since 2014, NELSAP-CU has gained regional experience, strengthened its capacity and emerged as a reliable regional institution for facilitating key in country and regional investment projects in the Nile Equatorial Lakes Region and beyond. Its key institutional strength lies in project pre-investment feasibility studies, regional projects coordination support, regional strategic analysis, environmental aspects, social economic development, stakeholders’ engagement and development communication, financial and procurement management as well as results based monitoring and evaluation.

NELSAP-CU, in delivering on its mandate, is supported bilaterally and multilaterally by different development partners including, but not limited to, the World Bank, the African Development Bank (AfDB), the Canadian International Development Agency (CIDA), the Governments of Norway (NORAD), Swedish International Development Cooperation Agency (SIDA), the Government of The Netherlands, the Japan Bank for International Cooperation (JBIC), Japan International Cooperation Agency (JICA), GIZ (Germany), French Development Agency (AFD), European Union (EU) and KfW (Germany). NELSAP-CU work has provided direct and indirect benefits to the Republic of Rwanda since 2004 as elaborated below.
REGIONAL AGRICULTURAL TRADE AND PRODUCTIVITY PROJECT (RATP 2009–2012) USD7.0 MILLION

The rationale of the project was to ensure reliable access to water, strengthened market linkages and active promotion of private sector as options that can have a dramatic impact on agriculture growth, food security and poverty reduction across the NEL countries. The project was implemented in collaboration with regional economic communities COMESA and EAC.

Under the project, the following studies were completed: (i) development of the Nile Basin agricultural model, (ii) assessing the irrigation potential in 7 NEL Countries (Burundi, DRC, Rwanda, Kenya, Sudan, Uganda, Tanzania), (iii) promotion of best practices on water harvesting and irrigation practices, (iv) cross border agricultural trade studies focusing on trans-boundary grain/pulses trade, livestock trade in the Nile Basin region (v) virtual water/water footprint analysis, documentation and awareness creation as well as (vi) definition of the NBI agricultural role, based on study of River Basin Organization lessons, national and regional consultation.

INTEGRATED MANAGEMENT OF TRANS–BOUNDARY WATER RESOURCES OF LAKES CYOHOA, RWERU AND AKANYARU MARSHLAND PROJECT (2010 – 2012)

The Integrated Management of Trans–boundary Water Resources of Lakes Cyohoa and Rweru and Akanyaru Marshland project (abbreviated in French as GIRET Project) was financed by the Bank through African Water Facility of the African Development Bank to the tune of Euro770,000.

Project results are: i) Integrated Management and Development Plans (IMDP) for the three water resources and Investments Profiles (IP); ii) a Diagnostic Analysis with an environmental screening of the water-resources; iii) three hydro-meteorological stations operational and mechanisms for data collection and sharing of the shared water resources established; iv) 40 local key actors trained in fishery management and policy, environment and IWRM principles and law implementation.

THE KAGERA RIVER BASIN MANAGEMENT HYDROMET SYSTEM

This project was implemented in partnership of four countries (Burundi, Rwanda, Tanzania and Uganda), facilitated the installation of hydromet stations in Burundi as follows: i) 5 Automatic Weather Stations have been installed at Muyinga, Cankuzo, Karuzi, Gitega, Ruyigi. (ii) 6 River Gauge stations were installed at Kibaya (Ruvinyenza River), Gitongo (Ruvuvu River), Shombo (Ndurumu River), Murongwe (Mubarazi River) Mubuga (Nyabaha River) and Nyankanda (Kayongozi River). (ii) 5 Rain gauge stations were installed at Burasira, Ngozi, Matana, Kabuyenge and Nyakararo. All these enhanced the water resources monitoring in the country.

NELSAP COMPLETES INTERCONNECTION OF POWER GRIDS OF RWANDA- D.R.C THROUGH THE GOMA-GISENYI OVERHEAD TRANSMISSION LINE (OHTL)

The Rwanda (Gisenyi) - D.R Congo (Goma) - power interconnection is a 12 km 220kV Overhead Transmission Line (OHTL) that runs from Gisenyi in Rwanda to Goma in the Eastern D.R Congo. This line was successfully completed four years ago (2016) and has been energized to operate initially at 110kV. NELSAP conducted feasibility of this line and NELSAP also supervised its implementation on behalf of the countries. The line connects the Eastern D.R Congo into the grids of the NEL countries. The line included construction of two substations at Gisenyi and at Goma.
INTERCONNECTION OF ELECTRIC GRIDS OF THE NILE EQUATORIAL LAKES COUNTRIES PROJECT

The project’s total transmission line is 930km at 220kV and 400kV with associated 17 sub-stations. The project involves five countries of the NEL region; Burundi, DR Congo, Kenya, Rwanda and Uganda aims at strengthening the interconnections between NEL region countries and other regional electric grids at the total cost of US$415 Million from different financiers (AfDB, Government of Japan JICA, Government of Germany (KfW), the Government of the Netherlands and the European Union and Sida. Project implementation is on-going in all the five countries with the following scope involving Rwanda:

THE RWANDA-UGANDA POWER INTERCONNECTION

This year (2022), commissioning of the Uganda (Mbarara/Mirama)-Rwanda (Shango) power interconnection and synchronization of the interconnection between the electric grids of Burundi - DR Congo - Kenya - Rwanda - Uganda will take place. Initial power trading through the lines between Uganda and Rwanda is planned to commence later in 2022 once the Rwanda – Uganda interconnector is commissioned into operational service.

On the Uganda side, construction of both the line and the Mbarara substation are complete and all facilities for interconnection with Rwanda are ready and the line has been energized up to the Rwanda border. The electric grids of Kenya and Uganda are in synchronized operation, the same case is for Rwanda, Burundi and part of the Eastern D.R Congo at Ruzizi. The interconnection between Rwanda and Uganda was the missing link, whose commissioning will realize parallel operation of the electric grids of the five countries namely; Burundi, D.R Congo, Kenya, Rwanda and Uganda. NELSAP-CU together with EAPP with support from USAID are working on modalities for preparation for coordinated and smooth synchronized operation of the interconnected grid system in the NEL.

HIGHLIGHT OF RWANDA TRANSMISSION LINES

1. MIRAMA - SHANGO TRANSMISSION LINE: This line in Rwanda was completed in December 2015 and ready for commissioning.
2. BIREMBO - SHANGO TRANSMISSION LINE: This line in Rwanda was also completed in August 2015 and line is in operation.
3. SHANGO - RUBAVU - KARONGI TRANSMISSION LINE: This line in Rwanda was completed in March 2016 and commissioned at 110kV in the interim and maintained operation at 110kV before commissioning at 220kV
4. KIGOMA (RWANDA)-GITEGA (BURUNDI) TRANSMISSION LINE: Procurement for Rwanda scope was completed contract signed and design work commenced.
5. CONSTRUCTION OF KIGOMA AND GISAGARA SUBSTATIONS is ongoing and work is at design stage and will be completed in February 2020.

AKANYARU MULTIPURPOSE WATER RESOURCES DEVELOPMENT PROJECT

NELSAP-CU has stepped up preparation for full feasibility and detailed design studies of the Akanyaru Multipurpose Water Resources Development Project that will be shared between Burundi and Rwanda. The project, located on the trans-boundary Akanyaru River, comprises a 52m high dam with storage capacity of 333 million cubic metres that will supply water to 614,200 people and irrigate 12,474 ha directly benefitting 24,948 farmers. It will also generate 14.5 MW hydropower which will power 141,111 homes and serve 846,000 people. This project was identified in 2012 by Rwanda and Burundi with support from NELSAP-CU. NELSAP-CU did detailed identification studies in 2012 with financing from a Sweden-Norway grant. In 2016 NELSAP-CU prepared a Project concept note and did a full proposal in March 2018 for funding from the AfDB NEPAD-IPPF.

Early November 2019, NELSAP-CU hosted a team from the African Development Bank (AfDB) NEPAD-IPPF (Infrastructure Project Preparation Facility) and from the African Water Facility (AWF) for an appraisal mission in
Rwanda to discuss among others modalities for financing of this project and to get country commitment on the same. “Following review and technical screening of the Akanyaru project, it was found to present a strong case for socio-economic development in the sub-region because it will address food, water and energy security, and contribute to economic development, thus the project is eligible for NEPAD-IPPF and AWF support and has accordingly been included in the 2019 Work Program for preparation,” said Mr. Mtchera Johannes Chirwa, Chief Infrastructure and PPP Specialist from the AfDB’s NEPAD-IPPF. Burundi and Rwanda formally mandated NELSAP-CU to prepare the project into full feasibility, and to conduct on their behalf, detailed design, tender documents preparation, environmental and social impact assessment (ESIA) and a resettlement action plan (RAP). This phase will commence in March 2020 and cover a 24-month period.

THE MUVUMBA MULTIPURPOSE WATER RESOURCES DEVELOPMENT PROJECT

NELSAP completed the pre-feasibility study for Muvumba Multipurpose Water Resources Development project. The project includes a dam and a reservoir for mainly irrigation up to 12 ha. Given the prime importance of the project to Rwanda as a nation, the GoU has sourced funding from KOREA and advanced the project to feasibility and detailed design phase. A part of the financing has been secured from KOICA and another part is being sourced from other development partners for implementation. 15 masonry water tanks in Nyagatare schools were constructed to harvest water from roof tops in September, 2007.

AKANYARU RIVER SMALL HYDRO POWER PROJECTS

The Trans-boundary Akanyaru River rises in the western highlands of Rwanda and Burundi, flows east and then north along the border between these countries before joining the Nyabarongo River in Rwandan territory. The shared part of the river has 3 sites with a power potential for 25 MW, which may generate an annual energy production of about 132 GWh. Identification was done by the Government of Rwanda through the Ministry of Infrastructure (MININFRA) in collaboration with NELSAP and site identification and reconnaissance study report was produced by a consortium led by MWH International in February, 2015. The reconnaissance study was funded by EU. NELSAP is currently fundraising for 3 million USD for its full feasibility and detailed design studies from the EU and AfDB. Once funds are available, this pre-investment phase will take two years to complete.

80MW THE REGIONAL RUSUMO FALLS HYDROELECTRIC PROJECT

The Regional Rusumo Falls Hydroelectric Project is a power generation infrastructure is located at Rusumo Falls at the border of Tanzania and Rwanda. This run of river scheme (at 1,320masl) will have installed capacity of 80MW to be shared equally among Burundi, Rwanda and Tanzania. As of June 2023, the 80MW Rusumo project was 99% complete. Its Transmission Lines (TL) will extend from the power generation plant to Gitega in Burundi, Kigali in Rwanda, and Nyakanazi in Tanzania.

The project will develop renewable hydroelectric power as part of a broader program to support sustainable management of the Kagera River Basin and promote growth and poverty reduction. NELSAP is implementing the Hydropower Project on behalf of the three countries. The project upon completion will facilitate increased economic activities, private sector development, and investments in social infrastructure and services through improved access to electricity.

The project has two components: i) A hydroelectric power generation plant at the Rusumo Falls of -80MW capacity to be shared among the three countries, ii) Transmission Lines connecting the hydroelectric generation plant
of Rusumo Falls to the national grids of Burundi, Rwanda and Tanzania, and the related project area development. Setting up of the Special Purpose Vehicle (SPV) the Rusumo Power Company Limited (RPCL) was completed. US$340 Million and US$128 Million was advanced to the countries as loan/grant from the World Bank and African Development Bank for the implementation of the Power Plant and Transmission Lines respectively.

PROGRESS OF ACTIVITIES

The project is now at full implementation phase having completed Environmental Baseline Studies which included Fish Baseline Survey, Spray Zone Biodiversity Survey and Water Quality Baseline Survey. The 80 MW dam will be commissioned in 2022 and it will provide 26 MW of electricity to the people of Rwanda. As part of bringing quick benefits to the community around the project site, the project supports the Local Area Development Plan (LADP) as a benefit-sharing program worth 15 Million US Dollars designed to enhance regional economic and social development in the Rusumo area as an extended program related to the construction of the project. LADP is expected to improve community livelihoods and promote socially sustainable outcomes of the riparian citizens of the affected districts. Implementation of the Livelihood Restoration Program (LRP) started in February 2017 and is on-going. In Kirehe District rehabilitation of 30 km of feeder road in Kigarama and Musaza (Cyagasenyi-Gasarabwayi-Nganda Road) was completed. Construction of the Kigina Health Center is also completed. In Ngoma District construction of 28.7 km of mixed water pipeline supplying 10,500 populations of Gatonde-Gahima cells was completed as well as the 33 km of Gituku-Murama water supply system and construction of 9.54 km of Kigabiro-Rurenge-Gatore Feeder Road.

PEOPLE AFFECTED BY PROJECT (PAPS) IN RUSUMO RECEIVED VARIOUS LIVELIHOOD RESTORATION SUPPORT. (CLOCKWISE) I) A FAMILY USED THEIR LIVELIHOODS RESTORATION FUND TO START COMMERCIAL RABBIT REARING. II) ANOTHER GROUP STARTED A LIVESTOCK INTENSIFICATION PROJECT FOCUSING ON DAIRY CATTLE. III) MADINA KARERE, ESTABLISHED A COMMERCIAL POULTRY PROJECT IV) A DUMMY CHEQUE PRESENTED TO PEOPLE AFFECTED BY PROJECT.

NEL-IP Projects in the Pipeline with Direct Benefits to Rwanda

THE NILE EQUATORIAL LAKES INVESTMENT PROGRAM (NEL-IP)

NELSAP has consolidated the advances made in independently prepared investment projects from Member Countries into a single, feasible Nile Equatorial Lakes Investment Program (NEL-IP). The NEL-IP provides a framework for shared water and other resources, and more importantly, a suite of well-structured, -designed, purposeful, integrated and bankable projects for development partners and investors to consider. Out of the total list of 17 projects Rwanda got three projects, these are: 1) Akanyaru Water Resources Development (MPP) 2) Integrated Management of Transboundary Water Resources of Lakes Rweru, Cyohoha and the


AKANYARU WATER RESOURCES DEVELOPMENT (MPP)

Akanyaru MPP (Burundi/Rwanda) consists of a 334 Mm³ dam, 12,400 ha of irrigated land, 14.5 MW electricity, potable water supply for 683,585 people and restoration of 1700km² degraded watersheds. It is anticipated that the project would improve the living conditions and incomes of rural populations in the provinces of Kirundo, Ngozi and Kayanza in Burundi; and Huye and Gisagara Districts in Rwanda; and surrounding areas. Expected direct and indirect impacts include the creation of employment opportunities, water for domestic consumption,
hydropower production, agricultural production, and livestock production. The outcomes of these benefits will enhance household incomes and livelihoods, environmental protection/watershed management, agricultural production to match the ever-increasing human populations and market demand at regional level thereby improving both national and regional food & energy security, social economic development and ultimately poverty reduction.

The project was originally identified in 2012 by the NELSAP-CU together with the Government of Burundi and Rwanda. The project is a high national priority for both countries. Full feasibility, detailed design and preparation of tender documents, as well as independent ESIA and RAP studies are planned to be undertaken through the NEPAD-IPPF, financed by the African Development Bank (AfDB) after the countries sign a joint MoU for the studies preparation and implementation. NEPAD-IPPF also requested the countries to choose the option of doing the feasible, ESIA and RAP studies first because the available funds are enough to cover this activity and later seek for more funds to undertake the detailed designs and tender documents preparation. The estimated cost of project implementation from the pre-feasibility study is USD 191m, however this number should be confirmed during the project design phase.

INTEGRATED MANAGEMENT OF TRANSBOUNDARY WATER RESOURCES OF LAKES RWERU, CYOHORA AND THE AKANYARU MARSHLANDS (GIRET)(WM)

The project area covers the Akanyaru marshland, the Lakes Cyohora and Rweru and their watersheds shared by Rwanda and Burundi, and is located in the Akanyaru sub-basin and the downstream Nyabarongo sub-basin, both being part of the Kagera sub-basin shared by Rwanda, Burundi, Uganda and Tanzania. The project area has experienced a steady decline in the level of ecosystem services from being the food basket of Rwanda and Burundi in the 1960s with widespread forest area and plenty of rainfall to its current status of frequent drought, soil erosion and lack of grazing land. The objective of this project is to enhance:

- Co-ordination, sustainable development, management and utilization of the Lakes Cyohora, Rweru, Akanyaru marshland environment, including water and fisheries resources production
- Contribute to poverty reduction and the reversal of environmental degradation in the Bugesera region shared by Rwanda and Burundi, especially in the Rweru and Cyohora lakes basins and Akanyaru marshland.

The project aims to develop 4,200ha irrigated land; 2.5 million agroforestry trees; 765ha riverbank & lake shores protected; restocking of 2 lakes; support to 9 fishermen cooperatives; 1 million beneficiaries including 4,500 fisher folks and improved capacity of more than 6,500 farmers. In more detail:

- Integrated Agriculture and Watershed Development and Management: Nearly 2,000 ha of irrigated land set up with hillside irrigation techniques and effective marshland management, more than 6,500 farmers with improved capacities on improved seeds, dairy cows and post-harvest infrastructures
- Watershed management: Mechanisms and capacities for joint water monitoring and management in place and operational, Protection of 765ha of lakeshores and Akanyaru riverbanks with fodder grass, agroforestry, fruit, bamboo and indigenous tree species. Conservation of aquatic ecosystems and biodiversity through restoration of lakes shores, spawning sites and catchments and joint mechanisms for fishery and water resources monitoring and management
- Fisheries Resources Development and Management: Restock of the 2 lakes with 1,000,000 tilapia fingerlings, support construction of fishery infrastructures and strengthen capacities of 6 fisherman cooperatives and key stakeholders for sustainable fishery development. Regional Integration and peace building through harmonized
policies frameworks
• Capacity building and development: Capacity building for alternative livelihood and by commodity chain of 4,500 beneficiaries from fishery, farmers and agriculture cooperatives, 50% being women. Leading to poverty reduction and improved food security. This component also specifically addresses knowledge generation and dissemination systems to monitor specific risks and threats, notable climate change and variability.

The project is ready for implementation and requires funding of USD 95m over 4 years implementation to enable the project to become financially self-sufficient.

KAGERA BASIN-WIDE INTEGRATED WATERSHED PROGRAM (WM)
The overall objective of this watershed management project is to establish a sustainable cooperative framework for the joint management (Burundi, Rwanda, Uganda, Tanzania) of the water resources of the Kagera River Basin; in order to prepare for sustainable development-oriented investments that will improve the living conditions of the people while protecting the environment.

The Kagera River Basin Project contributes to the improvement of living conditions of the basin communities through social economic development, poverty reduction and reversal of environmental degradation. Numerous notable achievements and outputs within the basin already, and the NEL-IP request is for USD 60m to further assist with implementation including substantial welfare benefits to Kagera Basin including Soil and Water Conservation on 300,000 ha, Irrigation on 65,000 ha, and building of rural roads up to 2,000 km.

<table>
<thead>
<tr>
<th>NAME AND LOCATION</th>
<th>STATUS</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akanyaru River Small Hydro Power Projects</td>
<td>Pre refeasibility has been done Required next is Feasibility, ESIA, and detailed design</td>
<td>Pre-investment USD 3 mln.</td>
</tr>
<tr>
<td>Rwanda and Burundi: Akanyaru Multipurpose Water Resources Development Project (44.5 MW power, 12,474 Ha Irrigation; Water Supply to 614,200)</td>
<td>Pre refeasibility has been done Required next is Feasibility, ESIA, and detailed design</td>
<td>Pre-investment USD 3.5 mln, investment USD 100 mln.</td>
</tr>
<tr>
<td>Burundi &amp; Rwanda</td>
<td>Feasibility has been done, next is Project Implementation</td>
<td>Investment USD 40 mln.</td>
</tr>
<tr>
<td>Integrated Management of Transboundary Water Resources of lakes Cyohoha, Rweru and Akanyaru Marshland Project at the Bugeera Wetlands</td>
<td>Pre refeasibility has been done Required next is Feasibility, ESIA, and detailed design</td>
<td>Pre-investment USD 6 mln.</td>
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ONE RIVER ONE PEOPLE ONE VISION

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