Rwanda Investment Benefits from the Nile Basin Cooperation

Ongoing work at the 80MW Regional Rusumo Falls Hydroelectric Project

New Kigina Dispensary, a local area development project at the Regional Rusumo Falls Hydroelectric Project

Shango Sub-station in Rwanda

NBI/NELSAP-CU, FEB 2020
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


The Integrated Management of Trans–boundary Water Resources of Lakes Cyohoha 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 hydrometeorological 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 (Ruviryonza 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.
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 (2020), 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 in 2020 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.

**The Rwanda-DR Congo Power Interconnection**

This is a 220kV line which was completed and commissioned into operation three years ago initially at 110kV.

**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.

“The 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. The unshared part (Rwanda territory alone) of the river has a total potential installed capacity of 11 MW with annual energy generation of about 64 GWh. When fully developed the river has potential of more than 36 MW.

Since most of the potential SHPs are envisaged to be RoR (run-off-river) types, it is expected to cause minimum environment and social impacts as they will not require dam construction.
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.

**Regional Rusumo Falls Hydroelectric Project (RRFHP)**

The Regional Rusumo Falls Hydroelectric Project, under implementation with an installed capacity of 80 MW (Run of River Scheme at 1320masl) that will be shared equally among Burundi, Rwanda and Tanzania. The power generation infrastructure will be located at Rusumo Falls at the border of Tanzania and Rwanda. The transmission lines will extend from the power generation plant to Gitega in Burundi, Kigali in Rwanda, and Nyakanazi in Tanzania. The project will develop renewable hydropower as part of a broader program to support sustainable management of the Kagera River Basin and promote growth and poverty reduction. NELSAP-CU is implementing the construction of dam and installation of electromechanical equipment for generation of the expected electricity on behalf of the three countries.

**Project components**

The project has three components: i) A hydropower generation plant at the Rusumo Falls of 80MW capacity to be shared among the three countries, ii) Transmission lines connecting the hydropower generation plant at Rusumo Falls to the national grids of Burundi, Rwanda and Tanzania, and the related project area development and iii) A jointly owned utility/institutional mechanism for the co-management of the power generation plant and transmission lines to national utilities. The joint institution will be responsible for environmental and social safeguards.

The setting up of the Special Purpose Vehicle (SPV) the Rusumo Power Company Limited is complete. US$340Million and US$128Million have been advanced to the countries as loan/grant from the World Bank and African Development Bank for the implementation of the Regional Rusumo Falls Hydropower project and the Power transmission lines respectively, which commenced in 2014. The contractors for both dam construction and installation of electromechanical equipment were procured and activities are on-going. The Dam construction contractor has completed site mobilization while the electromechanical equipment contractor is designing the equipment.

**Progress**

The project is under implementation having concluded all preparatory activities which included Environmental Baseline Studies on Water Quality, Fish Survey and Spray Zone Biodiversity.

The overall project implementation status is at 61% as of February 2020. Compensations of persons affected by the project has been completed on both sides of Rwanda and Tanzania with 53 households and 1 commercial group in Rwanda and 108 households and 3 commercial groups in Tanzania respectively. A total USD 3.1 million were paid out to the PAPs as compensation in the two Districts Ngara in Tanzania and Kirehe in Rwanda. Civil works/supply and installation of hydromechanical
MADINA KARERE, A BENEFICIARY OF THE COMPENSATION AND LIVELIHOOD RESTORATION PROGRAM AT RUSUMO

equipment begun in 2016 and is ongoing. The dam will be commissioned in 2020 and it will provide 26MW of electricity to the Government of Rwanda. In addition, the construction has created job opportunities to 200 Rwandans.

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 ongoing. USD 711,000 has been earmarked for program in Kirehe and Ngara districts of Rwanda and Tanzania. The Project has allocated USD 5 million to the people through Ngoma and Kirehe Districts to implement different community development projects (agriculture (crops and livestock) through irrigation, construction of a new health centre, and roads rehabilitation. In Kirehe District rehabilitation of 30 km of feeder road in Kigarama and Musaza (Cyagasenyi-Gasarabwayi-Nganda Road) is ongoing. Construction of the Kigina Health Center is completed. In Ngoma District it is constructing 28.7 km of mixed water pipeline supplying 10,500 populations of Gatonde-Gahima cells and 33 km of Gituku-Murama water supply system and construction of 9.54 km of Kigabiro-Rurenge-Gatore Feeder Road is starting soon.

Community Beneficiaries: Regional Rusumo Falls Hydroelectric Project

It is early morning at Kirehe District of Rwanda at the Rusumo border between Uganda and Tanzania. Karere Madina, a mother of five is attending to close to 1,000 layers chicken (exotic chicken kept for eggs). Madina is one of 53 people displaced by the Regional Rusumo Hydroelectric Power project on the Rwanda side of the trans-boundary project. Madina and nine other people started this poultry project from the displacement compensation money that they received from the project.

“We benefitted a lot from this Rusumo project because as a result of the compensation money we received, we started poultry farming and this has benefitted me and my family a lot,” says Madina.

“My neighbours also benefit a lot from this poultry project because they get fertilizer from me to improve yield from their farms,” Madina, a widow, but because of her projects, she is able to support herself and her children, two of whom are in secondary school while the others are still in primary level.
## Projects in the Pipeline with Direct Benefits to Rwanda

<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</td>
<td>Pre-investment USD 3 mln.</td>
</tr>
<tr>
<td>Rwanda and Burundi: Akanyaru Multipurpose Water Resources Development Project (14.5 MW power, 12,474 Ha Irrigation; Water Supply to 614,200)</td>
<td>Pre refeasibility has been done</td>
<td>Pre-investment USD 3.5 mln, investment USD 100 mln.</td>
</tr>
<tr>
<td>Burundi &amp; Rwanda Integrated Management of Transboundary Water Resources of lakes Cyohoha, Rweru and Akanyaru Marshland Project at the Bugesera Wetlands</td>
<td>Feasibility has been done, next is Project Implementation</td>
<td>Investment USD 40 mln.</td>
</tr>
<tr>
<td>Trans-boundary 48 MW Nsongezi Hydropower Project between Rwanda, Tanzania and Uganda: Uganda and Tanzania have accepted Rwanda to be part of this project.</td>
<td>Pre refeasibility has been done</td>
<td>Pre-investment USD 6 mln.</td>
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