New Milestone as Rusumo Project Enters Final Phase, Construction 78% complete

Construction at the 80 MW Regional Rusumo Falls Hydroelectric Project shared between Burundi, Rwanda and Tanzania and managed by NELSAP-CU, has entered the final phase with overall completion rate of 78%. “As of 31st March 2021, construction of the dam and spillway were at 92% and were expected to complete in June 2021, the power intake was at 96%, the headrace tail was at 70%, with the two expected to be complete by November this year, while the powerhouse structure was 83% complete,” said Mr. Andy Maro Tola, the Acting Regional Coordinator of NELSAP-CU, in his briefing note to the Rusumo Power Company Limited RPCL.

Cage Aquaculture on Lake Albert, a ray of hope for a group of Artisanal Fishers as they prepare to harvest 36,000 fish

“Whenever you leave your home to go into the lake fishing, the outcome is uncertain; – you may come back with fish or without fish, lose your net due to bad weather, drowned in the water, or be attacked by pirates,” says Moses Munyomo, an artisanal fisherman for fifteen years. “With these fish cages however, most things seem assured; you know where your fish are and their exact number, and if you feed and take care of them well, you will get a certain quantity of fish and make money,” Moses adds.

Moses is a member of Bafa (Buhuka Albert Fishers Association), one of the three fisher groups involved in cage aquaculture on Lake Albert. The groups presently own three fish cages with a total of 36,000 tilapia (Oreochromis niloticus). The three groups... continued p.5
NELSAP-CU supports South Sudan to Conduct Full Feasibility of the 170km 400kV Nimule-Juba Power Transmission Line

Following the signing of a Memorandum of Understanding (M.O.U) between NELSAP-CU and the government of South Sudan in October 2020, NELSAP-CU, has begun preparation for the full Feasibility of the 170 kilometre 400kV Nimule-Juba power transmission line. In future the Nimule-Juba power transmission line will evacuate approximately 2 GW of hydropower from four potential dam sites along the Nile: i.e Bedden (570MW), Grand Fula (1080MW), Lakki (420MW) and Shukoli (240MW) to other states of South Sudan through internal backbone transmission lines. Nimule is at the Uganda/South Sudan border and the Nimule-Juba transmission line will connect with the Olwiyo substation in northern Uganda, which is currently under construction.

The Nimule-Juba high voltage transmission line will also connect the Eastern Africa Power Pool (EAPP) countries through various interconnections, forming part of the western arm of the North-South electricity superhighway. The interconnectivity will enhance power exchange between Ethiopia, South Sudan, and Uganda once the proposed interconnection line between South Sudan and Ethiopia is implemented. It will also help create a loop link to interconnect with the eastern part of the Democratic Republic of Congo. The entire feasibility of Nimule-Juba transmission line is funded by the African Development Bank (AfDB/IPPF) to the tune of USD 1.5 million together with counterpart funding by South Sudan of USD 65,000. The role of NELSAP-CU is to coordinate and manage the entire project preparatory activities, which includes Feasibility Study, Detailed Design and Preparation of Tender Documents; Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plan (RAP). Once the Feasibility Study is complete, its report will form the basis of resource mobilization for implementation.

Progress so Far

Currently, procurement of the consultancy firm to conduct the feasibility study is ongoing with expected projected contract signature date of September 2021. The feasibility study is expected to take one year and is envisaged to be completed by August 2022.

Significance of the Transmission Line

The Nimule-Juba Power Transmission Line was prioritized by South Sudan under NBI/NELSAP following the Study for Hydropower Expansion Plan and Regional Integration Plan of South Sudan into Regional Electricity Grid, which was completed in July 2015. In addition to evacuating approximately 2 GW of hydropower from four potential dam sites along the Nile, the proposed project will provide a medium-term supply of power to the southern parts of South Sudan around Juba, the capital city where access to power constitutes a big constraint to economic growth. The city has 16,000 customer connections from the 31MW Ezra Power plant against demand of 80MW for its 0.37 million people.

Electricity Distribution in South Sudan

Electricity distribution consists primarily of three (3) isolated networks in the major commercial centres of Juba, Wau, and Malakal and several smaller mini-grids in state capitals. All the available capacity is thermal generation. Therefore any power exchange into South Sudan through the proposed transmission line will offset and minimize dependency on non-renewable energy and contribute to climate change resilience and reduce CO2 emissions.

Key Project Dates

- **OCT. 2020** - South Sudan and NELSAP signed a Memorandum of Understanding M.O.U on Development of the Transmission Line
- **FEB. 2021** - Evaluation of Expressions of Interest Completed
- **JUN. 2021** - Evaluation of Proposals to be Completed
- **SEPT 2021** - Commencement of full feasibility
- **AUG 2022** - Completion of Feasibility
Feasibility Identifies Two Optional Locations for the Angololo Dam, Pending Approval by Stakeholders

Identification of the best site for the Angololo dam, shared between Kenya and Uganda, is nearing conclusion after the ongoing feasibility interim report presented its two possible sites. The two proposed sites have their left banks in Uganda and right banks in Kenya and were selected out of the six locations earlier identified. The site identification was part of the interim feasibility report presented to stakeholders in March 2021 in Busia, Kenya. Supported by a panel of experts, the two countries (Kenya and Uganda) will approve the best dam site location.

“A key factor in determining the eventual dam site will be the environmental and social impact assessment (ESIA) catchment size, water yield potential and potential irrigation command area,” said Mr. Andy Maro Tola, the Acting Regional Coordinator of NELSAP-CU. Mr. Tola was speaking during the review of the feasibility interim report of Angololo in March 2021 at Busia, Kenya.

“My constituency is very privileged to host this project and as member of the Natural Resources Committee of the Uganda National Assembly, I will ensure that my country fast track this project once feasibility is complete,” said Hon. Fredrick Angura, MP. Tororo South during presentation of the interim report.

The Angololo dam is part of the transboundary Angololo Water Resources Development (AWRD) project shared between Kenya and Uganda. The project consists of: the composite (rock-fill/concrete) 30 m high gravity dam with a capacity of 43 million cubic metres reservoir, a mini hydropower plant of capacity 1.75 MW, irrigation command area development on 3,300 ha of farm land, domestic and livestock water supply to 20,000 people, fish production, and catchment restoration. The dam will be built across the River Malaba (Sio-Malaba-Malakisi River basin) at the border of Kenya and Uganda.

The Angololo Project in Numbers

- Project comprises a dam with storage capacity of 43 million cubic metres
- Total number project beneficiaries: 127,300 people in Kenya & Uganda
- The project will supply potable water to over 20,000 people
- The dam will irrigate irrigate 3,300 Ha (1,180 Ha in Kenya & 2,120 Ha in Uganda)

Key Project Dates

- **2010** - NELSAP, Kenya and Uganda identify the project, NELSAP conducted prefeasibility
- **OCT. 2015** - 18th NELCOM Approved the project in Entebbe Uganda
- **MAR 2019** - Project Grant Letter Signed between NELSAP and AfDB (NEPAD-IPPF)
- **JUL 2019** - Project Launched in Entebbe Uganda
- **MAR 2020** - Independent International Dam Safety Panel of Experts formed and Community sensitization at Angololo dam site in the two countries conducted
- **OCT 2020** - Governments of Kenya and Uganda approved full feasibility
- **MAR 2021** - Interim Report submitted and endorsed by countries
- **DEC. 2021** - Completion of Feasibility Phase of the project

<<My constituency is very privileged to host this project and as member of the Natural Resources Committee of the Uganda National Assembly, I will ensure that my country fast track this project once feasibility is complete.>> - Hon. Fredrick Angura, MP. Tororo South, Uganda>
First ever joint patrols on Lakes Edward and Albert by D.R.C and Uganda Nab thousands of illegal gears, sets stage for permanent joint management

“Our analysis is that if illegal fishing continues at the current rate on Lakes Edward and Albert we could end up with two dead lakes,” said Ms. Daisy Olyel Aciro, the Assistant Commissioner for Enforcement in the Directorate of Fisheries Resources of Uganda.

“Last year, when we analyzed results from the Catch Assessment Survey done by LEAF II and the Governments of the D.R Congo and Uganda in 2019, the huge quantity of catch recorded; to a lay person looked impressive but to us as fisheries experts, was alarming. It showed that our fishermen were taking everything from the Lakes; immature fish that had little commercial value to the non-consumable by-catch that should be feed for the big fish, that they were using illegal gears and even fishing in breeding areas,” added Ms. Oyl. She spoke at Kasenyi, D.R Congo at the kickoff meeting for the first ever simultaneous joint patrol on Lakes Edward and Albert.

On his part Hon. Guerchole Dramani, the Provincial Minister for Agriculture, Fisheries and Livestock for Ituri Province of the D.R Congo, explained that the joint patrols are a follow-up to the State visit to Uganda in November 2019 by the President of the D.R Congo H.E Felix Tsheshkedi. He said that during the State visit, a Joint Technical Committee was formed to strengthen bilateral relations and a key component of this was cooperation in management of shared waters. He added that the State visit was itself a follow-up to the signing of the Bilateral Fisheries Agreement in Munyonyo, Uganda in October 2018.

Hon. Dr. Fatuma Hassan Sheilla, the Provincial Minister of Agriculture, Fisheries, Livestock and Rural Development for North Kivu Province of the DRC, speaking at Ishasha during the joint operation said, “Together we have agreed to completely stop harvesting of immature fish, use of illegal nets and use of fishing lights at night and have also agreed to exchange illegal fishers and destroy all illegal fishing gears on the spot.” She added that D.R. Congo will go further to confiscate illegal gears found in shops.

Hon. Dr. Fatuma’s sentiments were echoed by the Head of the Uganda delegation, Mr. Robert Mugimba, the First Secretary of the Ministry of Foreign Affairs saying, “A major weakness of previous enforcement operations on the lakes was that the exercises were uncoordinated and each country operated separately, which allowed fishers with illegal gears from one country to cross over to the other country to escape the operation.”

This joint patrol exercise was facilitated by the Multinational Lakes Edward and Albert Fisheries and Water Resources Management (LEAF II), a project under NELSAP/NBI that is funded by the African Development Bank (AfDB) and the Global Environment Facility (GEF) and collaboratively implemented by the Governments of D.R Congo and Uganda.
... continued from p.1

**Cage Aquaculture on Lake Albert, a ray of hope for artisanal fishers..**

started as saving and lending groups for fishers in the remote fishing village of Kinya in Buhuka area, Kikuube District of Uganda. The groups began cage aquaculture in 2020, with support from the Multinational Lakes Edward and Albert Integrated Fisheries and Water Resources (LEAF II) project of NELSAP/NBI that is funded by the African Development Bank (AfDB) and the Global Environment Facility (GEF) and implemented in collaboration with the Governments of the D.R Congo and Uganda. As of mid-March 2021, fish from three cages owned by the groups were 3.5 months old, each weighing close to 100 grams. Each of the three groups hope to harvest a minimum of 3-4 tons of fish per cage and make a minimum of 15 million UGX (USD, 4,200) per cage. Bafa group has so far spent 4 million UGX (USD 1,100) and expect to spend another 2.6 million UGX (USD 712) on feeding the fish for the next three and half months. That means, by the time fish matures they will have spent 6.6 million UGX (USD 1,800).

“We have a goal of installing two additional cages in the next cycle after we complete this pilot phase where we are receiving 50% support,” says Mwongezi Vitus, a Parish Chief and fisherman. Vitus is one of the leaders of Bafa group. “After we sell this lot, we will sit as a group, calculate how much we shall have gotten from the fish and add to the savings from members and re-invest in the same venture,” Vitus added.

“Fishing and cage farming can go hand-in-hand, because getting returns from cage farming takes a bit long (7-8 months), but with my fishing, if I get one big mbuta (Nile Perch) and sell it, I can get quick income and even support our cages,” explains Mr. Joseph Abeka and says that is why they have not abandoned artisanal fishing. For the past 22 years, Joseph specialized in catching big fish, specifically Nile Perch (mbuta), but of late he has not been fishing much. He explains that the number of big fish has reduced greatly in the lake due to illegal fishing practices. For now, Joseph is focused on the cage aquaculture project being one of the people trained in cage installation, management, and fish feeding.

Mr. Richard Rugadya, the National Fisheries Officer for LEAF II project in Uganda, says that through this pilot support, the project wanted to demonstrate how organized groups around the two lakes can fabricate and install fish cages, acquire fingerlings, manage the fish through proper feeding and care up to harvest and possibly make a profit.

“It is difficult for cage aquaculture to be an alternative livelihood to individual artisanal fishers due to high maintenance costs and intensive management requirements. That is why we gave the cages to groups; since they can pool resources,” Mr. Rugadya explains.

How the Group Manage the Fish Project

The group has employed four personnel: two as security guards to protect the cages day and night and another two to feed the fish. The fish are fed three times a day. Five members of the group underwent a two-week Training of Trainers Course on installation of cages, feeding, replacing nets as fish grow, monitoring health of fish and general management of fish cages. The groups have been receiving capacity building and supervisory visits by the LEAF II Project, the local District Fisheries Officer and sub-county Fisheries Officer who visit the groups at least once a week to oversee their progress. Within a month, the project will hand over the cages to the groups to fully manage going forward.

“We are very ready for the handover of the cages since we have enough feed in stock that will take care of our fish until they are ready for sale,” says Mwongezi Vitus.

Five members of Bafa who underwent training, say that they have acquired knowhow to fabricate and fully install their own fish cages into the lake, put in fingerlings and feed them for their entire life cycle.

In 2019 LEAF II project conducted a research on the potential of Cage Aquaculture on the two trans boundary Lakes Edward and Albert. The research informed the current pilot cage aquaculture projects, revealing among others, the suitable areas for aquaculture projects and their carrying capacity.
Q: The Nile Basin Development Forum (NBDF) is a high-level science-policy dialogue that provides an opportunity for sharing latest information, knowledge and best practices as well as building partnerships among professionals in trans-boundary water resources management and development. Can you please comment on how the forums have shaped Ethiopia’s Water Resources policy formulation, planning and management and development practices?

A: The Forums conducted so far have contributed towards creating common understanding among the Nile riparian countries and influencing their mutual engagement. In the case of Ethiopia, both the Ethiopian Water Resources Management Policy and the Ethiopian Water Sector Strategy promote an inter-sectoral meaningful and mutually fair regional cooperation and agreements on the cooperative and efficient use of transboundary waters with riparian countries based on “equitable and reasonable use” principles. The contribution of the Forums to Ethiopia’s water resources planning, development and management may be demonstrated by its subjecting water resources development schemes to environmental and stakeholder considerations as well as meeting economic criteria: factoring in transboundary elements in the planning, design and development of infrastructure and water resources projects.

Q: As the host of the 6th Nile Basin Development Forum, how do you think the deliberations will influence how Member States plan and implement regional investments (i.e. joint investments between two or more Members States or by one country but with a scale of regional impact) in the Nile Basin?

A: The Nile Basin has a huge infrastructure deficit. Most of the basin inhabitants suffer from economic water scarcity. That means, while water is physically available, the population does not have access to it due to lack of infrastructure. Therefore, the basin states need to invest substantially to harness their water resources endowment. However, since the Nile is a shared river, they need to consider transboundary effects in infrastructure projects. That is the reason the theme ‘thinking regional investments’ is timely. Ethiopia believes in multilateral cooperation on water. As NBDF is a science policy dialogue forum attended by scientists, water resources experts and policy/decision makers of the Nile Basin countries, the deliberations will certainly influence the planning and implementation of cooperative and national investment projects in Member States. As a practical work, Ethiopia has been keen on hydropower energy interconnection as one of regional integration vehicle, advancing the agenda of the Cooperative Framework Agreement (CFA) and a River Basin Commission for effective governance and integrated approach for the basin management.

Q: Previous Nile Basin Development Forum sessions have been physical interactions with participants from within the Nile Basin as well as those without. How do you evaluate the first ever virtual NBDF?

A: Virtual forum generally has its own advantage that it is low carbon footprint, reduces the hassle of travels and similar factors. On the other hand, it is disadvantageous that the NBDF could not meet for physical and emotional togetherness, undertake bilateral and informal talks, missed the opportunity of diverse ways of communications. Staying safe, but also continuation of the business of NBDF as it happened in the 6th forum has been useful.

Q: Ethiopia hosts one of two NBI investment programmes offices – ENTRO and this year it is hosting the Nile Basin Development Forum for the 2nd time (the first was the inaugural forum in 2006). Why do you think Nile cooperation is so crucial for NBI Member States? (b) How do you appraise the return to Ethiopia of her investment in the Nile Basin Initiative?

A: Ethiopia tabled several water resources development (hydropower, irrigation, and watershed) projects that have regional significance and multiple benefits to the riparian countries. Independent studies commissioned by ENCOM proved this. For example, the Scoping study: Opportunities for Cooperative Water Resources Development on the Eastern Nile: Risks and Rewards. The Study found that these projects would generate large amounts of hydropower and would provide important multipurpose benefits to downstream riparian’s, including flood control, sediment management, and improved navigation. The studies showed... continued p.7
New Milestone as Rusumo Project Enters Final Phase, Construction 78% complete

The NELSAP-CU Acting Regional Coordinator further stated that 97% of equipment for the electromechanical works were already delivered, while the switchyard and powerhouse installations were in progress. He added that the Service Bay overhead travelling crane (OTC) had been installed and commissioned for generator assembling and future servicing needs. "Focus has been on among others: the powerhouse construction, specifically on the service bay overhead travelling crane, which is functional and will be pivotal during assembling of generators, turbines, turbine embedded parts, downstream wall, and powerhouse super structures. Furthermore, there is a 220 ton crane installed that is helping to assemble the generator units 1, 2 and 3 and the pen stocks. The crane will support the backfilling of the upstream side of the powerhouse, which is prerequisite for installation of electrical equipment," Mr. Andy Tola added.

Under NELSAP-CU, the three beneficiary countries, Burundi, Rwanda, and Tanzania created Rusumo Power Company Limited (RPCL), a Special Purpose Vehicle (SPV) for the project. The three countries mandated NELSAP-CU with the responsibility of overall implementation during the preparation and construction phase. The Regional Rusumo Falls Hydroelectric Project (RRFHP) is implemented on the Kagera River, 25 km downstream of the Burundi, Rwanda, and Tanzania common border. The project is funded by the World Bank at about USD 340 million. The associated transmission lines connecting each of the three country’s Electric Grid to the Rusumo project switchyard are funded by the African Development Bank (AfDB) for USD 128 million while the respective implementation of the transmission lines are being coordinated by country specific utilities.

Upon completion, this project will bring an additional 80 megawatts of renewable, clean, relatively low-cost power to the national grids of Burundi, Rwanda, and Tanzania. The additional power will benefit an estimated 1,146,000 people in the three countries and an estimated increase in electricity access rates of: 5.4% (520,000 people) in Burundi, 4% (467,000) in Rwanda, and 0.34% (159,000) in Tanzania.

Environmental issues would be minimal (and can be mitigated), and reservoir evaporation losses would be small. The Study thus concluded that the Blue Nile sub-basin in Ethiopia provides the best opportunities for a first set of Joint Multipurpose Project investments. Water storage and hydropower generation facilities in this sub-basin could be complemented by investments in watershed management and irrigated agriculture.

Only preparation and implementation of some small-scale irrigation and watershed management projects including facilitation of the Ethiopia-Sudan 132 KV transmission interconnection were carried out in the early days of ENSAP.

ENTRO/ENSAW was established to help countries prepare and implement investment projects that benefit the riparian. Ethiopia has great expectations from NBI investment projects and the NBI development partners, who have made strong commitments to support cooperative efforts. So far Ethiopia has not adequately benefitted from NBI. Regardless, Ethiopia is committed to the Nile cooperation and the NBI. Ethiopia has always been paying its annual contribution to the NBI centres on time and it will continue its unwavering support to the NBI which it believes is crucial for all Member States.
Joint patrols on Lakes Edward and Albert by D.R.C and Uganda

The two-week joint operation was conducted in March 2021 on both Lakes. On the D.R Congo side, the operation was led by Admiral Egide Ngoy, who oversees security in the Eastern part of the country together with Director Rodrigue Mugaruka Katembo, ICCN Deputy Director in charge of Law Enforcement for the Virunga National Park. Operations on the Uganda side was under direct supervision of the UPDF Marines Brigade Commander, Brigadier Michael Nyarwa.

Results from the two-week joint patrol

The two-week joint operation arrested and exchanged 237 illegal fishers from the two lakes, destroyed 889 monofilaments, 15,465 hooks, 1,165 gillnets and 237 beach seines. Also destroyed were 1,697 silverfish undersize gears, 4 tons of immature fish and over 1,356 boats. About 79 boat engines were confiscated.

Speaking at the close of the exercise, the UPDF Marines Brigade Commander, Brigadier Michael Nyarwa said, “The joint exercise gave us confidence and trust with our partners from the other side (D.R.C) and showed that we can to work together.” Brig. Nyarwa added that the two countries were working to harmonize several things specifically, the fishing holiday which only D.R.C has in force, so that even Uganda can put into effect the same and synchronize them, so when that holiday is over, fish catch will be high. “The other area we are reading from the same script is on the total ban of the non-biodegradable plastic mono-filaments, which are very dangerous to fish and the ecosystem,” Brig. Nyarwa added. The Brigadier was accompanied by Hon. Jean Marie Nyolo Lonema, Provincial Minister for Environment, for Ituri Province of the D.R Congo. Hon. Jean Marie affirmed that his country is committed to future joint operations guided by the Standard Operating Procedures (SOPs) for joint patrols on the two lakes that was developed jointly by the two countries.