**Uganda Investment Benefits from the Nile Basin Cooperation**

One of the four (4) modern equipped surveillance boats Leaf II provided to the D.R. Congo and Uganda for joint surveillance of transboundary Lakes Edward and Albert.

Leaf II supplied two (2) modern mobile water quality laboratory vehicles to D.R. Congo and Uganda to support water quality management.

New Mbarara Substation in Uganda constructed through interconnection of electric grids of Nile Equatorial Lakes Countries Project.

NBI/NELSAP-CU, APRIL 2019
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 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, Kenya, Rwanda, Tanzania, Uganda, Egypt, Ethiopia, South Sudan and Sudan.

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 mobilized USD 557.107 million cumulative finance to-date for pre-investment programs of and additional USD 493.018 million for investment projects.

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 Uganda since 2006 as elaborated below.
A. Lakes Edward and Albert Integrated Fisheries and Water Resources Management (LEAF II)

The LEAF II Project is a transboundary project being jointly implemented by the DR Congo and Uganda, with its regional coordination by the NELSAP-CU. This project is financed by the African Development Bank (AfDB) through a US$ 8.785 million grant to DR Congo and US$ 7.321 million loan to Uganda, and an US$ 8.1 million grant from the Global Environment Facility (GEF) through the AfDB to the NELSAP-CU. The project’s overall objective is to “sustainably utilize the fisheries and allied natural resources of the Lakes Edward and Albert Basin through harmonized legal framework and policies”, over a 5-year implementation period (July 2016 – June 2021). This will be achieved through two key components of fisheries resources development and management, and integrated water resources management.

In Uganda, the project area traverses the 19 districts of: Bushenyi, Bundibugyo, Bunyangabu, Kabarole, Kamwenge, Kanungu, Kasese, Mitooma, Rubirizi, Rukungiri, Bulisa, Hoima, Kasese, Masindi, Nebbi, Ntoroko, Pakwach and Kikuube.

Key achieved benefits to Uganda so far include: delivery of 2 equipped patrol boats to support lake surveillance and enforcement; signature of bilateral fisheries agreement to guide sustainable utilisation and management of the shared lakes by DRC and Uganda; (iii) completed fisheries frame survey

Other ongoing project activities in Uganda include: (i) preparation of the Lakes Basin Strategy and Investment Plan to guide rationale development and management of the basin’s transboundary water and allied resources; (ii) preparation of the Semliki, Nkusi, Muzizi, Mitano and Nyawamba Catchment Management Plans, to support reversal of environmental degradation, improve land productivity, community livelihoods and resilience; (iii) construction of 5 improved fish landing sites at Rwenshama on Lake Edward, Mahyoro on Lake George, and Kitebere, Mbeug and Bei on Lake Albert; (iv) construction of a water quality laboratory and acquisition of a mobile water quality laboratory, to improve water quality monitoring; (v) construction of surveillance stations to strengthen lake surveillance and enforcement; (vi) construction of fisheries research station and acquisition of marine research vessel to support scientific fisheries research; (vii) development of water and fisheries resources information management systems, to improve knowledge generation, bilateral technical cooperation and policy decision making; (viii) assessment of cage aquaculture potential and installation of 5 pilot cage farms, to support alternative livelihoods; (ix) provision of water supply and sanitation facilities in selected under-served areas; (x) construction of strategic hydromet stations to strengthen water resources monitoring; etc.

B. Interconnection of Electric Grids of Nile Equatorial Lakes Countries Project

Through interconnection of electric grids many projects were achieved for the five Nile Basin Initiative member states of which the following were of direct benefit to Uganda.

i.) Construction of 220kV double circuit transmission line from Bujagali via Tororo substation to the Uganda/ Kenya border, over a distance of 131km.

ii.) Construction of 220kV double circuit transmission line from Mbarara North substation, via Mirama Substation in Uganda to the Rwanda border over a distance of 66km.

iii.) Extension of Bujagali substation.

iv.) Extension of Tororo substation, with incoming lines from Bujagali, to Lessos - Kenya; v.) Construction of two 132kV lines from existing Mbarara North substation and 132kV 220/132KV, two 220kV line feeder bays to Mirama; vi.) Construction of Mirama Substation.

NELSAP mobilized 18 million NOK (USD 3 million) and undertook feasibility study for the Uganda (Nkenda) - DR Congo (Beli-Bunia-Butembo). Fundraising for its implementation ongoing. NELSAP is mobilizing funding for the Uganda-South Sudan
interconnection for Uganda to export power to South Sudan following the signing of an MOU between the two Governments mandating NELSAP.

C. Shared Angololo Irrigation Development and Watershed Management Project (Kenya/Uganda)

Angololo gravity-fed Irrigation Development and Integrated Watershed Management (AIDWM) Project in Tororo district in Uganda and Busia County in Kenya will involve the construction of a diversion weir and irrigation infrastructure at Angololo village (UTM: Longitude 645160, Latitude 76706, elevation 1200m a.s.l) border of Uganda and Kenya. The project is located on the shared River Malaba. Prefeasibility studies for identification of AIDWM were undertaken in 2010 with financing from Sweden/Norway to NBI/NELSAP Sio-Malaba-Malakisi River Basin Management Project. The AIDWM project will include a diversion weir, main conveyance system as well as secondary and tertiary irrigation systems to serve 2500 ha of irrigation land including mobilizing the beneficiary community (out growers).

Objective of the AIDWMP is to alleviate poverty in the project area by transforming the existing subsistence farming into large scale commercial farming of irrigated lands producing principally high value horticultural crops. AIDWM will comprise of four main elements: (i) Upstream Integrated Watershed Management, (ii) Angololo diversion weir infrastructure (iii) Downstream Irrigation (iv) Environmental Mitigation. The total cost of the project is estimated at US$ 18.9 million. The project is expected to benefit at least 5,000 people from Tororo in Eastern Uganda and Busia County in Western Kenya directly or indirectly through creation of employment opportunities, agricultural production (irrigation), and livestock and fisheries production. Estimated Pre-investment cost: US$ 1.5 million (Feasibility study, detailed design, preparation of tender documents, preparations of ESIA, and Resettlement Action Plan). The project will contribute towards Uganda’s Vision 2040 and Kenya’s Vision 2030 which both include improvement in modernized and commercial agriculture.

Nyimur / Limur Multipurpose Water Resources Development

November 2013, NELSAP CU submitted a joint funding request to the African Water Facility of the African Development Bank (AfDB/AWF) on behalf of the governments of South Sudan and Uganda for financing the Feasibility Studies - FS, Tender Design Studies Environmental and Social Impacts Assessment Studies - ESIA, and the Resettlement Action Plan (RAP) of the Nyimur/Limur Multipurpose Water Development Project within the transboundary Aswa River Basin. In May 2015, the project preparation proposal was approved and a Grant Agreement was signed between the AfDB/AWF and NBI/NELSAP to the tune of USD 1.9 million for the period between May 2015 and December 2018. The project comprises of a community based irrigation scheme, a water reservoir, and a water and soil conservation component among other enabling sub components. The core scheme of the project consists of: a) A 27 m head dam and reservoir on Nyimur/Limur River in Uganda to supply water for an irrigation scheme of 2,900ha net in Uganda; b) A 21m control dam downstream at the confluence of Nyimur/Limur and Ateng rivers in Uganda to supply water for an irrigation scheme of 1,150ha net in South Sudan and 130ha net in Uganda; bringing the total irrigated area in both countries to 4,180ha c) A mini hydropower plant with a capacity of 410 kW included in the Head Dam, to supply the Ugandan side and an 800 kW hydropower plant in the Control Dam, to supply the South Sudan side. The project is designed to effect a permanent separation between the irrigation modules and cattle in a form of a protection zone (the “cordon sanitaire”) 500m wide that engulfs all irrigation modules and includes watering points for cattle in the periphery. In addition, the project includes on the Ugandan side (due to the fact that the two dams are located in Uganda): a) Improvement of existing and construction of new rural water supply and sanitation infrastructure for a population of approximately 12,000. b) Sustainable Land use Management practices as well as afforestation activities for an estimated at 14,300 ha.

Progress so far: Feasibility, Social Impacts Assessment Studies - ESIA and and the Resettlement Action Plan (RAP) were completed in March 2018. The detailed designs will be completed by June 2019.
Completed Projects With Direct Benefits to Uganda

The project covers Mella Sub County in Tororo District, Uganda. The Project aimed at investing in water supply development, to address the problems experienced in obtaining safe, reliable and sufficient water supply from existing sources, by the communities living in three villages of Mella Sub County. The project is benefiting an estimated 2,000 people and 4,500 livestock. The total project cost was estimated at US$130,000, including physical and price contingencies with the Royal Swedish Government providing all the funds. At project completion, the actual project cost totalled US$ 165,000, or 127% of the estimated costs. National Water and Sewerage Corporation provided additional financial support for the Project to a tune of Uganda Shillings 50 million for labour costs. The Project was commissioned on February 23, 2009 by Hon. Minister of Water and Environment, Uganda.

B. Busia Community Fish Ponds Project, Uganda
The project covered 4 sub counties in Busia District. The aim was to invest in community fish farming within the wetlands of Sio River. The overall objective was to demonstrate and promote fish farming as an alternative source income for the communities. The project involved construction of 7 community fishponds at Bunyide, Budimo and Bunyadeti; provision of all production inputs in support of first production cycle and training and mentoring of community members in pond construction and aquaculture techniques, basic business skills and community dynamics. The total project cost was estimated at US$90,000, including physical and price contingencies with the Royal Norwegian and Royal Swedish Governments providing the funds, benefiting communities providing unskilled labour and Busia local government providing technical knowledge. At project completion, the actual project cost totalled to US$ 66,000, or 73% of the estimated costs. This was entirely for the fish farming/aquaculture development.

C. Lukhuna Gravity Fed Irrigation Demonstration Scheme, Manafwa District, Uganda
The scheme is about 60 Km from Mbale town and the intake is at a distance of 12 km from Bukhokho center. It was identified as part of efforts to ensure enhanced participatory integrated land and water management in selected critical watersheds in the Sio-Malaba-Malakisi river basins. The scheme is benefiting about 66 households (500) people directly through improved production of high value horticulture crops. The design of the scheme was undertaken internally within the Sio Malaba Malakisi Project Management Unit. The cost of the scheme was US$61,250. Construction works for the intake structure and transmission primary and secondary mainlines commenced July 2014; scheme commissioning was held on February 22, 2015 during the Nile Day celebrations.

D. Prefeasibility studies for potential Multipurpose Water Resources Development Project Within the SMM Basin
NELSAP-CU completed pre-feasibility studies for potential
Multipurpose Water Resources Development projects within the Sio Malaba Malakisi Basin at a cost of US$ 190,000. The study identified 13 potential multipurpose Water Resources development project on the Ugandan side of the catchment. The prefeasibility studies aimed at enabling the Government of Uganda in planning and advancing investment projects for improved food, water and energy security.

E. Prefeasibility Studies for Potential Multipurpose Water Resources Development Project Within the Manafwa Sub-Catchment

In the study conducted in 2012, 17 potential multipurpose reservoir dams were identified. The possible purposes for the dams include; water storage (including those to act as silt traps), flood protection, irrigation and livestock production, and water supply. The proposed multipurpose reservoirs are envisaged to provide water in the drier months, protect downstream communities against flood and serve as sedimentation check for dams (silt traps).

F. Shared Lwakhakha, Lower Sio, Middle Malaba and Middle Malakisi Sub-Catchment Management plans.

NELSAP supported the governments of Kenya and Uganda in preparation of sub catchment management plans for the shared Lwakhakha, Lower Sio, Middle Malaba and middle Malakisi sub catchments at cost of 199,000 US$. When implemented the plans will benefit over 560,000 community members through increased farm production, reduction in soil fertility loss, increased incomes and improved livelihoods.

G. Rehabilitation of Hydro-meteorological Net Work within Sio Malaba Malakisi Basin

NELSAP undertook assessment and design of hydrometric network within the Sio Malaba Malakisi basin. A total amount of US$ 197,000 was spent in rehabilitation of the hydro met network. In 2012, Nelsap installed 5 river gauging stations, 4 automatic weather stations and 19 rain gauges in the Ugandan part of the SMM Sub Catchments. The installed stations augment the existing network stations and have enhanced water resources planning and management within the SMM Basin.

H. SMM and Manafwa Water Allocation Model

The Nelsap CU together with Sio- Malaba- Malakisi River Basin Project developed a dynamic water budget and allocation model with its associated database for the SMM and Manafwa Sub basins using DHI’s MIKE Hydro river basin modelling software. The resultant model is being used as a primary tool in evaluating current and future water uses of the surface waters as well as enhancing future water resource decision-making within the Sub basins. The model provides a quantitative assessment of water distribution and allocation within the entire Sub basin while giving an overall water balance and general understanding of water movement throughout the basin.

I. Capacity building at all levels for sustainable management of Water Resources

NELSAP-CU organized and conducted numerous trainings to benefit both Uganda technical officers and community members. Trainings were mainly conducted in the following areas; a) Sub-basin wide sustainable hydro-meteorological network Rehabilitation for technical staff. b) Capacity Building Plan, Stakeholders Participation Plan and Gender Mainstreaming Plan. c) Sediment Modelling for technical staff. d) Use of the NB-DSS for technical staff. e) Water allocation and economic appraisal of projects, for technical staff. f) Water Resources Environmental groups formed and trained. g) Lukhuna Irrigation water user’s groups formed and trained.
J. Other Key Water Resources Projects Identified
NELSAP-CU through SMM in Collaboration with the Government of Uganda identified small-scale irrigation development and watershed management projects, and HEP in the Mt Elgon areas of Uganda. Among such projects are the Bukhabusi (480 ha of potential irrigation land) and Lirima (341 ha of potential irrigation land), and Soono Hydro Electric Power (HEP) site with potential of generating 2 MW of power.

K. Regional Agricultural Trade and Productivity Project (RATP 2009–2012)
The rationale of this project was that investments in reliable access to water, strengthened market linkages and active promotion of private sector are options that can have a dramatic impact on agriculture growth, food security and poverty reduction. This 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 RBO lessons, and national and regional consultations.

L. Katuna Water Supply
Kagera RBM designed and constructed Katuna Water Supply in Ndorwa County, Kabale District. The project is a gravity flow scheme near Rwanda-Uganda border, serving about 10,000 people. The project covered seven communities including Kabaliisa (Buranga, Nyakibande), Rwakakobe, Nyamayengo/Kanyanjokye, Mayengo (Katuna, Konigo), Burambira, Hakabungo and Ryaruhinda. The project is at present serving 10,000 people.

M. Installation of Hydro-meteorological Equipment in Uganda
The Kagera River Basin Management (RBM) Project facilitated the installation of hydromet stations in Uganda as follows; (i) 5 Automatic water level recorders with data loggers and accessories; (ii) 15 Vertical staff gauges of 1m length; (iii) 4 Automatic weather stations; (iv) 4 Standard rain gauges; (v) 2 C31 Universal current meter; (vi) 1 Handheld GPS unit; (vii) 1 Acoustic doppler current profile (ADCP); (viii) 1 Portable bank-operated cableway sediment sampler; (ix) 1 Handheld sediment sampler; (x) 2 Life jackets, and (xi) 2 Wading suits. Besides the Kagera RBM trained selected country participants in quality assurance and control of hydro-meteorological data and in installation, operation and maintenance of hydrometric equipment.

N. Maziba Sub-Catchment Management Plan
NELSAP-CU supported the government of Uganda in preparation of sub catchment management plans for Maziba sub-catchment; shared between Rwanda and Uganda (along River Kagitumba). When implemented the plans benefited over 560,000 community members through improved soil & water conservation measures on 13,620 ha; soil fertility enhancement on 35,440 ha; river bank protection (80km » 480 ha); sustainable development of wetlands (3,916 ha); rainwater harvesting & small-scale irrigation on 500 ha; afforestation of bare hills, for erosion control; capacity building in IWRM & catchment management; alternative livelihoods, e.g. bee keeping, etc.
### Projects in the Pipeline with Direct Benefits to Uganda

<table>
<thead>
<tr>
<th>Name and Location</th>
<th>Status</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rwimi Irrigation Development &amp; Watershed Management Project (4000 ha) - Kabarole D.</td>
<td>Prefeasibility done, next to be done is Feasibility, ESIA, detailed design</td>
<td>Pre-investment USD 3.5 mln, investment USD 28 million</td>
</tr>
<tr>
<td>Kabuyanda Multipurpose Water Resources Development Project (5,000 Ha) - Isingiro District</td>
<td>Feasibility &amp; ESIA studies ongoing, next to be done is detailed design &amp; project implementation</td>
<td>Investment USD 55 million</td>
</tr>
<tr>
<td>Lirima Irrigation Development &amp; Watershed Project - Manafwa District</td>
<td>Prefeasibility done, next to be done is detailed design &amp; project implementation</td>
<td>Pre-investment USD 0.3 mln, investment USD 1.1 mln.</td>
</tr>
<tr>
<td>Bukhabusi Irrigation Development &amp; Watershed Project - Manafwa District</td>
<td>Prefeasibility done, next to be done is detailed design &amp; project implementation</td>
<td>Pre-investment USD 0.3 mln, investment USD 2.6 mln.</td>
</tr>
<tr>
<td>Nyamatunga Irrigation Development &amp; Watershed Project - Mella Sub County</td>
<td>Prefeasibility done, next to be done is detailed design &amp; project implementation</td>
<td>Pre-investment USD 1.4 mln, investment USD 13.5 mln.</td>
</tr>
<tr>
<td>Maziba Sub-catchment Management Plan - Kabale District</td>
<td></td>
<td>Pre-investment USD 0.5 mln, investment USD 22 mln.</td>
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<tr>
<td>Semuliki Hydropower Project (72 MW)</td>
<td>Identification done, next is Feasibility study &amp; ESIA RAP - detailed Design</td>
<td>Pre-investment USD 6 mln</td>
</tr>
<tr>
<td>Nsongezi Hydro power project (48MW) - Kagera River</td>
<td>Identification done, next is Feasibility study &amp; ESIA RAP - detailed Design</td>
<td>Pre-investment USD 6 mln</td>
</tr>
<tr>
<td>Olwiyo-Juba South Power Transmission Interconnection, 400KV of 320 Km (Uganda-S. Sudan)</td>
<td>Identification done, next is Feasibility study and ESIA RAP - detailed Design</td>
<td>Pre-investment USD 3.0 mln, investment USD 240 mln.</td>
</tr>
<tr>
<td>Nkenda - Beni - Butembo - Bunia transmission line, 220KV of 396 km (UG-DRC)</td>
<td>FS and ESIA RAP completed, next is Resource mobilization &amp; Implementation</td>
<td>Investment USD 165 mln.</td>
</tr>
<tr>
<td>Masaka- Mwanza Interconnection 220KV of 640km (Uganda - Tanzania)</td>
<td>FS and ESIA RAP completed, next is Resource mobilization &amp; Implementation</td>
<td>Investment USD 325 mln.</td>
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