



NEMA NEWSLETTER



Ms. Margaret Aanyu

NEMA approves 406 projects in October - December Quarter

The National Environment Management Authority (NEMA) has issued a total of 406 certificates during the October–December, 2020 Quarter.

This is an increase from the 323 certificates issued during the July–September, 2020 Quarter, and the 265 issued during the January–March Quarter of the same year.

Documents submitted for consideration

According to available documents, the number of scoping reports submitted in the October – December, 2020 Quarter was slightly lower than previously, where a total of 297 reports/terms of reference (ToR) documents were submitted by developers, compared to 354 submitted in July–September, 2020 Quarter. In the April–June, 2020 Quarter, 166 reports/ToR were submitted.

The total number of project briefs (PBs) and Environmental Impact and Social Assessments (EISs) submitted to NEMA by developers during the October–December, 2020 Quarter was at 486 as indicated in Table 1 below, compared to the 406 PBs/EISs submitted during the July–September, 2020 Quarter.

Month	Scoping Reports/TOR	PBs	EISs	Total PBs and EISs Submissions
October	81	21	68	89
November	64	35	144	179
December	152	59	159	218
Grand Total	297	115	371	486

Table 1: Total number of scoping reports/TOR, PBs and EISs submitted to NEMA during October–December, 2020 Quarter.

There has been considerable increase in the number of EIA-related documents submitted to NEMA in this Quarter compared to the previous two Quarters (April–June, 2020), mainly due to the partial lifting of the Covid-19 lock-down.

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Saving Lake Victoria protection zone: The Bugala Island experience

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Fish deaths on Lake Victoria: What went wrong?

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Editorial



William Lubuulwa

Senior Information, Education and Communications Officer

NEMA Approves over 400 Projects in Single Quarter

The National Environment Management Authority (NEMA) has issued a total of 406 certificates during the October–December, 2020 Quarter.

This is an increase from the 323 certificates issued during the July–September, 2020 Quarter, and the 265 issued during the January–March Quarter of the same year.

Our lead story gives the details, explaining how this development came about, and the type of documents developers are required to submit to inform the approvals. In that Quarter, 486 project briefs and Environmental Impact and Social Assessments were submitted to the Authority by developers.

On other pages we carry a number of stories that impact our environment. We look at fish kills on Lake Victoria and explore reasons that try to explain what went wrong in the fishing industry. Initially, the dead fish were an eye sore to the communities, but as the numbers of fish being washed ashore kept growing, the assumption by members of the community was that the Lake is contaminated by poisonous chemicals.

Last Quarter, Covid-19 was still raging, as it is now, although with unreliably smaller cases being reported. Despite the turbulent times, some education institutions continue to show resilience in the face of Covid-19. This story highlights the fact that many schools in Moroto District are continuing to manage their environment well despite the challenges brought about by the Covid-19 scourge.

The newsletter also captures the recent rise of Lake Victoria's water levels and the need to plan appropriately if both people and the lake are to harmoniously continue living side by side.

There are more positives still around.

For instance, in Bukomansimbi District, an indigenous non-government organisation, Kirinda Youth Environmental Protection and Poverty Alleviation Programme Uganda (KYEMPAPU), is up and about, running in support of education for sustainable development.

Many schools in the district have reason to smile after Kyempapu came to their aid in planting fruit trees, managing their waste, and harvesting water, among others.

In the Quarter, NEMA continued to sensitize Ugandans on their role in environment management. We engaged journalists from Busoga sub-region on how to report stories that directly impact the environment.

More nationally, we bring to you the story of how Uganda is attempting to account for the flows and stocks of natural capital and their link to socio-economic development.

Nice reading.

NEMA Mandate

The National Environment Act, No.5 of 2019 stipulates that NEMA is the principal agency in Uganda responsible for the management of the environment by regulating, monitoring, supervising and coordinating all activities relating to the environment.

NEMA greens Tororo schools, plans nationwide campaign



Ms. Edith Akurut

Ten primary schools in Tororo District, eastern Uganda, have benefitted from the National Environment Management Authority (NEMA)'s initiative that aims at greening education institutions in the country.

The initiative, which started in FY2019/2020 also aims to create a conducive teaching and learning environment in schools and to foster positive attitude towards environment management in the young generation and key stakeholders in school settings.

NEMA rendered both financial and technical support to 10 select schools by equipping them with knowledge and skills on greening the institutions as well as their immediate environs. A modest financial support was given to each school to enable them implement their identified greening initiatives.

Background

In June, 2020, NEMA's department of Public Education (PE) identified the greening project after the realization that climate change was becoming a serious threat to the wellbeing and future of children in Uganda. The department also realized that despite the threat, no concrete measures had been taken by the Government of Uganda to address the issue in schools. Schools were preoccupied with having as many learners as possible pass in First Grade without necessarily teaching them about climate change.

"The initiative aims at not only greening the depleted environment

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Similarly, there was a tremendous increase in the total number of certificates of approval during this Quarter. The number of Certificates of Approval issued in each of the months is as follows: October 98, November 133 and, December 175.

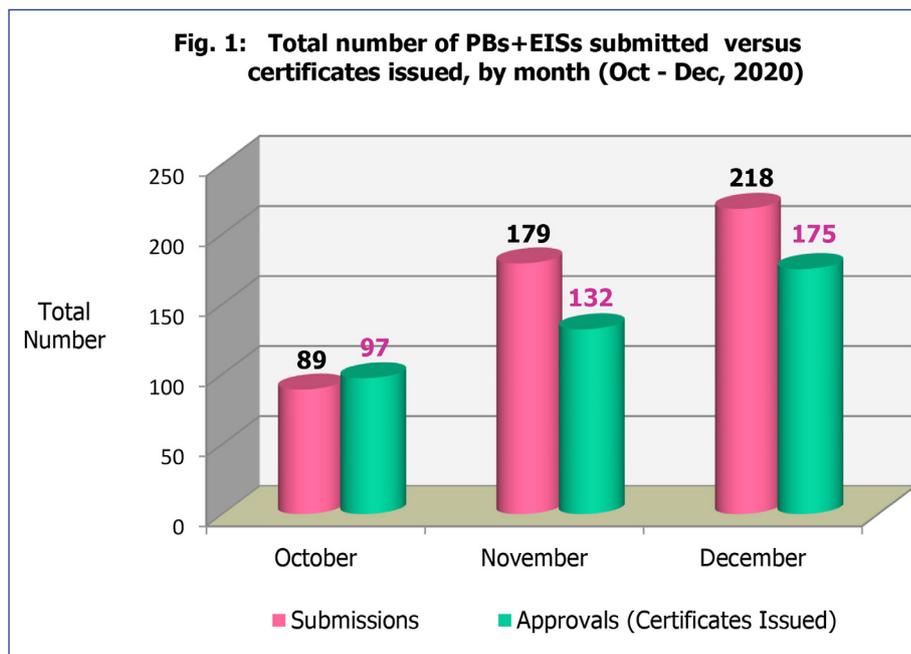


Figure 1: The comparison between the total of ESIA reports (PBS+ESISs) submitted and the Certificates of Approval issued during October–December, 2020.

Impact of Covid-19

The prevalence of the Covid-19 has affected the pace of review and approval processes of proposed projects. For instance, during the April–June, 2020 period, only four categories of projects (*fuel stations – 8; infrastructure – 2; wildlife/leisure – 1; and, mineral/mining – 6*) were approved.

The pace of review, however, picked up after the lock-down was partially lifted with at least 11 (eleven) categories of projects comprising 323 projects, were approved during the July–September, 2020 Quarter.

Further progress/improvement was witnessed during the October–December, 2020 Quarter, in which 404 Certificates of Approval were prepared for projects approved, compared to 323 Certificates of Approval prepared in the July– September, 2020 Quarter.

Major categories

Constituting 81.1% of the total projects approved, the four leading categories of projects approved during October–December, 2020, were:

- ☐ Fuel facilities/stations totalling 97 (23% of projects approved)
- ☐ Infrastructure totalling 90 (22.2%)
- ☐ Information Communication Technology totalling 78 (19.2%)
- ☐ Processing Industry/Manufacturing totalling 64 (15.8%)

These same four categories have been the leading categories during the previous Quarters, with the exception of the April – June, 2020 quarter as mentioned above.

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Summary of approvals

Category of project	Total number	% of total
Education Facility	09	2.2
Energy Production/Distribution	05	1.2
Fuel Facility/Station	97	23.9
Information Communication Technology	78	19.2
Infrastructure - Roads, Housing, Renovations	90	22.2
Land-use Change – Agric., Livestock, Forestry	02	0.5
Minerals, Mining, Quarry	45	11.1
Oil and Gas	01	0.25
Processing Industry, Manufacturing	64	15.8
Waste Management and Infrastructure	01	0.25
Water Supply and Sanitation	04	1.0
Wetlands /Fisheries	03	0.7
Wildlife, Leisure, Recreation, Hotels	07	1.7
Grand Total	406	100.0

By Ms. Margaret Aanyu the manager EIA at NEMA.

Moroto schools doing well despite Covid-19



Mr. William Lubuulwa

Schools in Moroto District are continuing to manage their environment well despite the challenges brought about by the scourge of Covid-19.

This was discovered when the National Environment Management Authority (NEMA) visited Karamoja sub-region at the end of 2020.

NEMA’s directorate of District Support Coordination and Public Education (DSCPE) was in Moroto to monitor and give technical support to schools in the implementation of the agreed action plans drawn during previous environmental awareness activities. The plans touched greening and the general management of the environment in select schools.

The 5-day follow-up exercise engaged head teachers from 10 schools namely: Moroto Prisons Primary School, Kasimeri Primary School, Eagle’s Nest Primary School, Moroto Police Nursery & Primary School, Moroto Municipal Primary School, and Moroto Demonstration School. Others were Nakapelemen Primary School, K.D.A Primary School, Rupa Primary School and Kidepo Pupu Community School. NEMA

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also interacted with both the senior education officer and the district education officer in the district.

Notable among the best performers in environment management in the district were Moroto Police Nursery & Primary School, Moroto Demonstration School, Moroto Municipal Primary School and Moroto Prisons Primary School.

Due to Covid-19, many schools across the country still look bushy and abandoned but these Moroto schools were very kempt and expressed readiness to reopen.

“We have kept the school clean and tidy by slashing the compound regularly. We also water the tree seedlings three times a week to have a green environment,” Mr. Calistus Lobuin, the head teacher Moroto Prisons Primary School, reported. He was, however, worried that “Covid-19 is a great menace to the school wellbeing as many learners may never come back to school.”

At the time of DSCPE’s visit prisoners were slashing the already neat compound which had a number of fruit trees growing.



A cross-section of Moroto Prisons Primary School back yard that houses the refurbished sanitation facilities as seen in December 2020 (NEMA photo)

At Moroto Police Nursery & Primary School, the school administration was growing luxuriant flower gardens and hedges all over the compound despite the Covid-19 lockdown. The school had very clean VIP sanitation facilities complete with screening walls and handwashing facilities.

Located in the police barracks, and without own land, the school has managed soil erosion, installed lightening arrestors and procured four stainless water tanks.

Another success story in environment management in the district was Municipal Council Primary School. Located in the township, the school had Covid-19 related SoPs information sheets pinned on the classroom walls. The clean compound had informative messages; enclosed with well-maintained hedges, there were green spaces and grass growing in formerly bare patches.

The head teacher, Mr. Daniel Animal emphasized: "Social and environmental messages on classroom walls and across the compound, especially messages on waste management, hygiene promotion and good behaviour are key in moulding a useful citizen. That's why we had these messages."



Green and neat: The compound of Moroto Police Nursery and Primary School as seen in December 2020 (NEMA photo)



A message against violence in one of the bare sections of the Moroto Municipal Primary School compound (NEMA photo)

Other schools were also doing well in managing their environment. For instance Moroto Demonstration School had a well planned talking compound with social and environment messages. There was a heavy presence of trees, and particularly fruit trees such as guavas, oranges and mangoes in the compound.

The school's greatest challenge was Covid-19 that had affected the care for the environment and her population as many P7 girls had not reported back.



Although there were good efforts at greening Moroto Demonstration School, Covid-19 has affected the care for the environment leaving some patches of ground bare as seen in the picture above. (NEMA photo)

By William Lubulwa the Senior Information, Education and Communications Officer, NEMA

NEMA's community participation in management of fragile ecosystems pays off



Mr. Herbert Nabaasa

To ensure effective participation and ownership of environment management practices, the directorate of District Support Coordination and Public Education at the National Environment and Management Authority (NEMA) adopted a community engagement approach to restoration and protection of fragile ecosystems across the country.

The 10-year approach, is believed to be successful, and should be replicated in all districts to ensure sustainability of interventions.

Community participation is an important tool that can help to create trust and credibility, particularly with the role players and the affected parties. It plays an important role throughout the various phases of planning and management including; identification of problems and issues; formulation of vision statements, goals and objectives; identification of alternative solutions and evaluation methods.

Participation, thus, is important for opening up greater access to the decision making process to all people including taking part, or actively being involved in the governance for environment and natural resources with particular focus on fragile ecosystems.



Limoto wetland in Kibuku and Pallisa districts was successfully restored using a community approach in 2018 in which 6,000 people got involved. (NEMA photo)

Background

Uganda adopted the decentralized policy in 1993

through legalization by the Local Governments (Resistance Councils) Statute, 1993. The Local Government Act consolidated this policy. Through the decentralized policy, the goal of government is to create a local government system that is democratic, participatory and development-oriented.

Objective 2 of the decentralization policy stresses the importance of participation and ownership. One of the decentralized areas of development in the Local Government Act 1997 is Environment Management – a crucial aspect of sustainable development. The specific decentralized environment management functions are well laid down in this Act, the National Environment Act Cap 153, the Wild Life Act, the Water Act and the Land Act, 1998, among others.

The implementation of the decentralized policy necessitated realignment of the environment and natural resources management sectors, with more responsibilities being passed on to local governments. The decentralization strategy was intended to ensure that all Ugandans participate in the creation of clean and healthy environment as enshrined in the Constitution.

However, achieving sustainable utilization of environment and natural resources management as a component of decentralized functions at the local level depends on the national and individual district local government commitment to mainstream/prioritize the same in its development planning and the effective participation of natural resource users to ensure sustainability.

Unfortunately, the decentralized function of environment and natural resources in the local governments has been constrained by limited participation of the grassroots people hence posing sustainability and ownership challenges.

What environment governance is

In order to fully understand the linkage between participation and governance, it's imperative to define environment governance first which is; "the whole range of rules, practices and institutions related to the management of the environment in its different forms (conservation, protection, and exploitation of natural resources among others)".

A further definition describes it as "all the processes and institutions, both formal and informal, that encompass the standards, values, behaviour and organizing mechanisms used by citizens, organizations and social

movements as well as the different interest groups as a basis for linking up their interests, defending their differences and exercising their rights and obligations in terms of accessing and using the environment.

Unsustainable use of environment

Despite the fact that, the country has been able put in place all the necessary legal framework for environment and natural resource and create awareness as well as establish institutions at national and local levels for effective management of these resources in a sustainable manner, we continue to see unsustainable use of environment and natural resources as evidenced by increased trends in the degradation of forests, wetlands, water resources and poor agricultural practices, among others, and this can partly be explained by limited participation by resource users in governance.

There is thus a need to empower decentralized communities to participate in environment decision-making right from planning to implementation in order to ensure sustainable utilization of resources using a community-based approach. In order to achieve this, communities should be effectively involved in environmental monitoring and reporting as well as participating in formulating local tailored policies to ensure complete ownership for sustainability.

The recognition of community-based approaches to management of environment and development was in 1990s, when the focus of the environmental community was on the international development agenda and the United Nations Conference on Environment and Development was about to set in. This focus culminated into the emergence of the global consensus towards the concept of 'Sustainable Development' that should be based on local-level solutions derived from community knowledge and initiatives.

Support for community participation

The reasoning for community participation and engagement finds strong support in the Ecologist's (1972) 'Blue Print for Survival', Schumacher's (1973) 'Small is Beautiful', and the Brundtland Commission Report. The statements of intent on global environmental problems following the Earth Summit, including Agenda 21 and the Desertification Convention, strongly advocate, as solutions, a combination of government decentralization, devolution to local communities of responsibility for natural resources held as commons, and community participation (Holmerg et al. 1993). The decade set into the process the embedding of spaces for local communities to participate and influence the

generally top-down environmental policies laid down by the government.

One of the success stories under community engagement for restoration of fragile ecosystem is Limoto wetland system in Kibuku and Pallisa districts where more than 6,000 community members were actively involved in planning and implementation of restoration interventions. The result was a complete



A community engagement meeting discusses the restoration of Limoto wetland system in Kibuku and Pallisa districts in recent times. (NEMA photo)

recovery and regeneration of the wetland system which hitherto had been completely decimated.

Community-based approaches to development are generally agreed to be some kind of 'co-management', or an appropriate sharing of responsibilities for natural resources management between national and local governments, civic organizations, and local communities. This kind of management practices is certainly in contrast to the top-down, state-centred and controlled environment management practices in which people figure as actors that need to be governed rather than involved in the management practices.

By Herbert Nabaasa the senior district support officer, NEMA.

How Uganda is attempting to account for nature



Mr. Tom Geme

Uganda has had a fair number of initiatives attempting to evaluate the flows and stocks of natural capital and their link to socio-economic development.

Many of these emanate from academia with little or no interaction with other stakeholders. With

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in the partner schools but also empowers children to become environmental stewards in their own communities through learning how to plant and grow trees, and the importance of greening these institutions generally," Ms. Aidan J. Asekenye, the principal environment education coordinator, and head of the PE department at NEMA, said.

Therefore, in coordination with education and environment departments of the district, and because of the need for interventions to stretch out to school-going children and meet their needs, the project was launched. PE believes that if children are taught to be conscious about their environment they grow up responsibly and can sustainably manage Uganda's natural resources.

Through the district education officer, 10 primary schools were selected to take part in the project. The 10 schools were taken through the whole school approach on environment management to improve on their understanding of the best environment management practices.

Impressive performance

The project has performed well in Tororo District, and it is hoped that the 10 schools will work as a springboard for NEMA to replicate greening in many other schools across the country.

The schools have planted flowers, fruit and other trees, and are helping to grow them. They have also carried out other impressive environmental management practices especially in waste management.

In just five months into the project, there were positive changes in the schools.

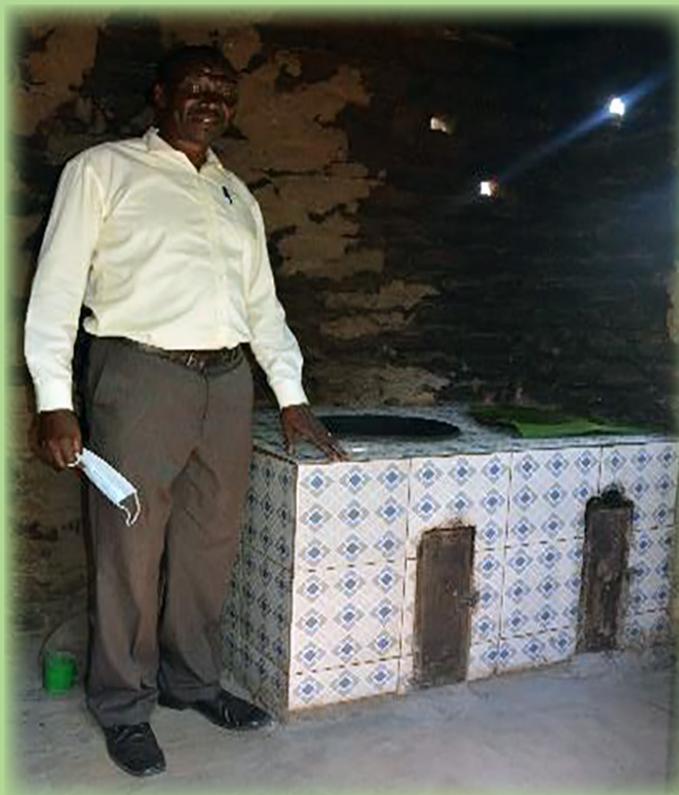
The head teacher of Kainja Primary School, Mr. Patrick Kaunye pointed out: "We started harvesting vegetables like Sukuma wiki and cabbages for consumption by primary seven candidates during lockdown, and we have even sold some at the village market."

Other head teachers were also happy with the project. Mr. Patrick Waida Wegulo, the patron of Namwaya Primary School said: "I was so impressed and tickled by the project because when I came back from the training, I immediately formed the Environment Club and we started to implement some activities even before the money came. It looked like NEMA woke us up." He continued: "After implementing all the agreed actions with the financial support from

NEMA, we were able to see the value of this project."

To Topista Nyadoi, the head of Papol Primary School, all is now well with their schools. "We have much more beautiful, welcoming and conducive school environments now and our woodlots are growing well," she said, before adding that "being part of the greening project was paying off and we are happy being part of the implementers".

"The greening project in Tororo has produced outstanding results and we shall roll it out to other districts in Uganda. It is so encouraging to see little money producing so much impact in schools in just a few months," Ms. Asekenye observed.



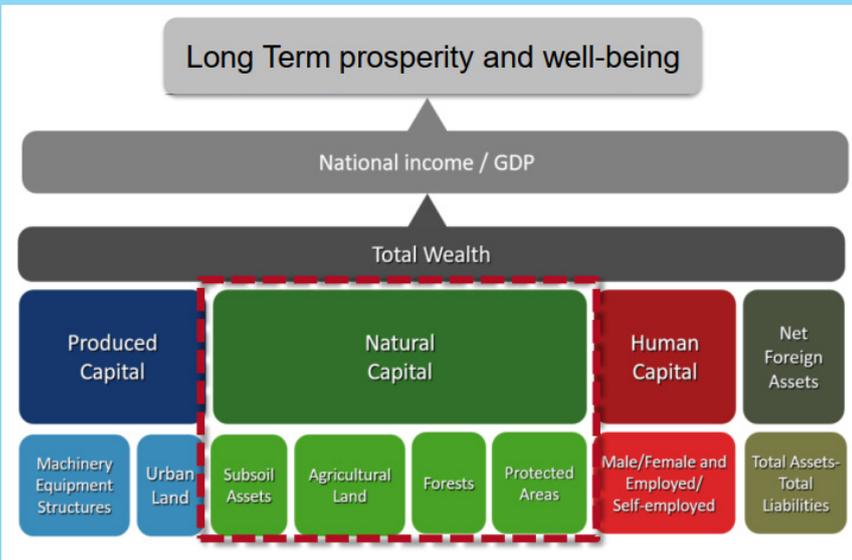
Mr. Patrick Waida Wegulo, the head teacher, Namwaya Primary School, shows the newly constructed energy saving stove to NEMA staff at the school in December 2020. (NEMA photo)



Greening efforts: Grass (left) and cabbage being grown in Kainja Primary School in December 2020. (NEMA photo)

By Edith Akurut the environment education officer, NEMA.

time, however, non-government players, especially the environment and/or social development Non-Government Organisations (NGOs), development agencies and/or civil institutions came on the scene to support the approach. In the last decade, Uganda has exhibited a renewed interest in the advancement of approaches to account for nature and use of information from such accounts in national policy decision-making.



In this article, we highlight some of the prominent attempts to account for nature in Uganda to date.

The earliest assessments are from as far back as 1995 with a study on the economics of Protected Areas (PAs) in Uganda. The study appraised the overall benefits and costs associated with the country's PAs to determine their benefit to society by intricately looking at the costs, benefits and policy issues related to their management.

Four years later, the International Union for Conservation of Nature (IUCN) in collaboration with the National Environment Management Authority (NEMA), published a report titled 'Uganda Biodiversity: Economic Assessment'. It sought to underscore the rationale for introducing frameworks for accounting for nature in the operationalisation of the National Biodiversity Strategies and Action Plans.

Shortly after, the International Gorilla Conservation Programme and the African Wildlife Foundation analysed the economic significance of gorilla tourism in Uganda. This study conducted in 2000 aimed to bolster gorilla conservation efforts by establishing the economic benefits that accrue from conserving them, and the related tourism.

In 2001, IUCN and NEMA once again conducted and published a study on the cost of environmental degradation and loss to Uganda's economy. This study showcased how the sound management of environmental resources could contribute to Uganda's Poverty Eradication Action Plan.

With a renewed effort and considering the potential of information from these assessments in decision-making processes, Uganda commissioned a study to assess the feasibility of introducing environmental sustainability into the national accounts in 2005. This could later be accomplished with the compilation and launch of the National Plan for Advancing Environmental-Economic Accounting for Uganda in 2019.

This plan was developed by the Uganda Bureau of Statistics (UBOS) in partnership with several relevant Ministries, Departments and Agencies (MDAs), academia, environment and/or social NGOs and international

development agencies. This strategic plan seeks to create an impetus for advancing the Natural Capital Accounting (NCA) approach within Uganda. This is by interesting various stakeholders in adopting the approach, creating a basis for resource mobilisation and building capacity.

Between 2005 and 2019, more initiatives to account for nature were undertaken. These included the compilation and publication of the first species accounts for flagship wildlife tourism species (chimpanzees and elephants) and selected non-timber forest products such as Gum Arabic, Shea butter nuts, and the African cherry (*Prunus Africana*) in 2015. Similarly, in 2018, the Ministry of Water and Environment (MWE) together with relevant stakeholders undertook an economic valuation of Uganda's forests and their contribution to the economy.

Currently, the major NCA projects that are running include:

- ❖ Tourism Satellite Accounts Development Initiative - a collaboration between UBOS, the Ministry of Tourism, Wildlife and Antiquities and other stakeholders. The aim is to develop overarching accounts for the country's tourism sector.

- ❖ **Wealth Accounting and Valuation of Ecosystem Services project (October 2018 to August 2020).** The project is being implemented by the World Bank, Uganda's Ministry of Finance Planning and Economic Development, MWE and UBOS. The project aims to develop Biomass Accounts as well as Forest and Wetland Ecosystem Accounts for Uganda.
- ❖ **Water and Energy Accounts Initiative.** UBOS and the United Nations Statistics Division are working with respective MDAs to develop water and energy accounts for Uganda.
- ❖ **The NCA project titled 'Integrating Natural Capital Accounting into Sustainable Development Decision-making in Uganda.'** This Darwin Initiative funded project is being implemented by NEMA, UBOS and National Planning Authority on behalf of the Government of Uganda with support from the UN Environment World Conservation Monitoring Centre, International Institute for Environment and Development, Institute for the Development of Environmental-Economic Accounting and other stakeholders.

The project runs from July 2018 to March 2021, and covers three biodiversity-related themes:

- Biodiversity and tourism:** these accounts will organise data on major tourism sites and their species thereby highlighting the value of tourism expenditure and earnings related to Uganda's iconic species. They will inform sustainable use and protection laws that are tourism demand-driven.
- Fisheries resource:** these accounts will organise data on the declining fish stocks and the implications on the country's export earnings and livelihoods of its people.
- Land and soil:** these accounts will provide an understanding of the evolution of Uganda's soil fertility to draw policies for better soil management practices to ensure sustainable agriculture, reduced habitat conversion and contribute to poverty alleviation.

All early and current initiatives to account for nature in Uganda are premised on three core issues that link economic development and the exploitation of natural resources.

First: Economic benefits associated with biodiversity

are high, and accrue throughout the Ugandan economy and society.

Second: Economic benefits and/or costs that accrue from the exploitation of biodiversity-related natural resources are unequally distributed in Uganda.

Third: Multiple economic forces drive biodiversity degradation and loss in Uganda.

Uganda, therefore, can now use both the experience, support garnered through time to account for nature. Further, the standardised and evidence-based approach, as proposed in the UN System of Environmental-Economic Accounting framework is now available to dispel any contradictions that would arise and allow for holistic decision-making.

By Tom Geme the project officer – NCA at NEMA.

Climate change: Ecosystem-based adaptation approaches in northern Uganda



Mr. Edgar Basaliza

Climate change greatly affects smallholder communities whose livelihood principally depends on the natural resource base.

In Uganda it is projected that the livelihoods of the poorest communities in the most areas are more likely to be negatively affected by extreme events through effects like crop withering, increased pest and disease invasion, and water stress, among others.

Climate change is the global phenomenon of climate transformation characterized by the changes in the usual climate of the planet (regarding temperature, precipitation, and wind) that are especially caused by human activities.

Northern Uganda experience

Central north and some parts of West Nile have registered the highest cases of environmental degradation. The degradation has been majorly

charcoal burning, wetland encroachment; unplanned urbanization and degradation of river catchments among others. Ecosystem Services, in the form of provisioning, regulating, supporting, and cultural services that contribute to human well-being have greatly been affected.



Some of the sections of the degraded Odokomit wetland systems in Lira City as seen in July 2020 - the degradation has affected ecosystem service provision in the area. (NEMA photo)

The region also faces massive influx of population from different areas including South Sudan, DR Congo and parts of Somalia leading to enormous destruction of available ecological systems. This escalates the rate at which climate change variabilities prevail.



A cross-section of Lake Kwania shore wetlands and Kole systems that are under threat as seen in October 2020. (NEMA photo)

EbA approach

Ecosystem-based Adaptation (EbA) is a tool to adapt and mitigate the adverse effects of climate change on social-economic and ecological systems. The Convention for Biological Diversity defines EbA as “the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change.”

Local communities rely on EbA through applying existing practices such as sustainable natural resource use, community-based natural resource management and community-based adaptation which is an integral part of sustainable natural resource management.

How EbA addresses impacts of climate change

EbA is a people-centric concept that acknowledges human resilience and depends critically on the integrity of ecosystems. It uses biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the negative

effects of climate change and variability that is prevalent at local levels.

The success of EbA relies on extension services that enhance the likelihood to conserve the ecosystems in order

to sustainably obtain services from them during extreme weather conditions. Further, extension services increase the farmers’ knowledge and information concerning sustainable utilization of ecosystems which are a sole source of services such as water, temperature, humus, quality soil that boost their agricultural productivity. Drought threatens agricultural productivity through

increased temperatures, changes in precipitation patterns and increased occurrences of extreme weather conditions, new crop and livestock pests, limited supply of irrigation water and the increased severity of soil erosion, among others. Most of the northern

region experiences all these characteristics especially in Abim, Adilang, Kitgum, Kole and Pader.



The NEMA team discuss with Amolatar District officials areas worst hit by floods in Lango region at the district offices in September 2020. (NEMA photo)

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The local communities have always adapted to prevailing environmental risks, and evidence suggests the entire region faces changes in climatic conditions and its threat to their livelihood. Most local people have observed long-term increased temperatures, declining and pattern change in precipitation and increase in drought frequencies, changes in rain patterns as a result of climate variations.

Practices adopted in the region

These include dry planting where seeds usually of maize are planted on dry farms prior to the first rains of the season; mixed cropping where farmers grow their crops in a carefully designed mix on the same plot; use of organic fertilizer; irrigation using farm ponds and wetland water channels where farmers construct farm ponds to supplement water during extreme weather conditions; and planting of drought resistant varieties.



The Giligili Irrigation System used by farmers to cope with water stress in Arua in November 2020. (NEMA photo)



Different varieties and drought tolerant crops designed in a popular mix in Kitgum District in November 2020. (NEMA photo)

Vital

It is observed that besides the practices adopted, climate change is very likely to have an overall negative effect on yields of major crops across regions, with strong regional variability in the degree of yield reduction and massively affect the livelihoods of local communities. Thus, in rural farming communities, it is of paramount importance that community's vulnerability to climate change is decreased and adaptive capacity enhanced and sustainably maintaining the health of ecological systems for ecosystem services provision on which communities depend.

By Edgar Basaliza the district support officer - northern region NEMA

KYEMPAPU supports Education for sustainable development in Bukomansimbi



Ms. Sylvia Namukasa

Schools in Bukomansimbi District have reason to smile after Kirinda Youth Environmental Protection and Poverty Alleviation Programme Uganda (KYEMPAPU), a local non-government organisation, came to their aid in planting fruit trees, proper waste management, and water harvesting, among others.

Since its inception in 2010, Kyempapu has evolved and worked with different local, national and international partners to implement several project activities in Entebbe and Bukomansimbi District in central Uganda.



The Woman Member of Parliament for Bukomansimbi District Veronica Nanyondo, the Education Officer CECOD-FEE and the ED Kyempapu Ms. Sylvia Namukasa in March 2018.



Students of St Lawrence SS Bigasa Sub County Bukomansimbi, Plant a tree donated by KYEMPAPU during the sanitation week 22-26 March 2021

Kyempapu is a grassroots non-profit organisation that is committed to community development, environmental management, and poverty alleviation in Kirinda, Kitanda sub-county in Bukomansimbi District.

Kyempapu joined a consortium of eco-schools to implement environmental conservation programmes and the litter-less campaign in five pilot schools in Entebbe Municipality and in Bukomansimbi District. These included St. Agnes Primary School Entebbe, Chadwick Namate, Katabi St. Joseph's, Meria Junior School and Kyakajwoga Primary School. This was funded by Conservation Efforts for Community Development (CECOD-FEE) under the Eco-School Approach and the seven steps criteria that would lead to awarding the best school what is called the Green Flag.

Kyempapu is one of the civil society organisations that won this flag too having exhibited good practices in Education for Sustainable Development. The programme involves planting fruit trees, establishment of vegetable gardens in the school, proper waste management,

water harvesting, among other themes. From this project experience, Kyempapu decided to construct a plastic bottle house which acts as the office block to show the world that waste is wealth.

that waste is wealth.

Sylvia's Sisters, a non-profit organisation registered in USA donated five plastic water tanks with 1,000 litre-capacity to the schools in Bukomansimbi such as Bright Parents Kayanja. The donation came along with kits



Dr. Mike Taylor from Carnegie Mellon University USA with his mother plant a fruit tree in the KYEMPAPU Peace Gardens recently. Courtesy photo

of washable sanitary towels as a way of keeping girls in school.

With support from the University of Eastern Finland, and under the Environment Online Programme which I have coordinated for the past 10 years, we have been able to participate in the celebration of international environmental days, International Day of Peace, and Planting Peace of Forests in Schools such as Kabandiko Primary School where we planted several fruit trees among 1,000 trees, with an aim of encouraging school children to plant and grow trees.

By. Sylvia Namukasa the founder and executive director, KYEMPAPU.

NEMA trains Busoga journalists in environmental reporting



Mr. William Lubuulwa

The National Environment Management Authority (NEMA) has trained journalists in Busoga sub-region.

The two-day environmental journalism training that was spearheaded by the Directorate of District Support Coordination and Public Education (DSCPE) took place at Jinja City Hall, in February.

Opening the training, the director DSCPE, Dr. Daniel Babikwa said: "Journalists are partners in environment management and are crucial in creating the right citizenry."

He challenged them to understand the role of individual responsibility versus the work of NEMA, district local governments and the general public as enshrined in the Constitution of Uganda.

In a paper titled: 'The role of local governments in decentralised environment management in Uganda', the senior district support officer at NEMA, Ms. Ann Nakafeero informed

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Saving Lake Victoria protection zone: The Bugala Island experience



Dr. Jerome S. Lugumira

Lake Victoria has attracted a lot of attention in recent times mostly because its shore has, over the centuries, been settled with people who have transformed the latter into all kinds of land uses.

However, the recent rise of this lake's water levels has only reminded us of the need to factor its dynamisms in land use planning. In 1964 the water level rose by more than a metre.

A friend of mine who has inhabited the shore of this lake over the last 70 years intimated to me that Lake Victoria never fully regained its pre-1964 level; taking over areas it once occupied in its geologic history. Yes, the history of its boundaries is hidden in the geology of the area. A close inspection of several sedimentary features around the lake reveals the scale of past lake level fluctuations, which have been neatly studied. For instance, literature shows wave-cut terraces and horizontally bedded beaches around the lake at +3, +10 – 12, and +18 m above present levels, with +3 m beaches dated to about 4,000 years. There is also evidence in the soil recovered from the deepest basin of the lake showing it dried some 16,000 – 17,000 years ago. This is just one episode among several events of drying.

Victoria - a very sensitive lake

Lake Victoria is very sensitive to changes in rainfall because of the balanced nature of its water budget. Average rainfall over the lake is almost the same as average precipitation therefore just above normal rains causes significant change in water level especially when the atmospheric demand for moisture is low. In addition, the shallowness of this lake contributes to large changes in surface area even with modest changes in precipitation totals. What this implies is strict adherence to regulated space beyond which land uses must be carefully selected to suit the conditions.

Impact of poor planning

Images of flooded palatial dwellings in local media are evidence of unplanned developments that should have never been constructed where they are today. Evictions of local markets here and landing sites there are evidence that local planning authorities ignored nature and misled masses, despite guidance in environmental laws and regulations regarding the use of lakeshores and riverbanks, dating back to the year 2,000. It is common to find a title of submerged land along the lake, demarcated and approved as recently as this year, despite warning that some areas around the lake will remain under water for some time.

NEMA efforts

Given the huge cost of restoring degraded landscapes,

the National Environment Management Authority (NEMA) continues to guide use of land. For protection zones of lakes and riverbanks, this is urgent because they seem to be the last resort for many, yet their ecological role is unmatched. On this account, in the last half of 2020, NEMA embarked on a nationwide campaign to rid lakeshores of illegal activities and land uses that threaten the water resources. A team worked around Lake Kyoga, one worked along Lake Victoria in Mukono, Buikwe and Jinja, and another was deployed in Kalangala District.

Today's article majorly looks at the works undertaken around Bugala Island, in Kalangala District.

In August 2020, we undertook an assessment of the effect of rising water levels around Bugala Island, to document the effects of this phenomenon and relevance of maintaining the 200-metre protection zone, primarily along landing sites. This was supposed to guide decisions and to support those deemed to be suitable but with no approval to operate in the protection zone to secure user rights.

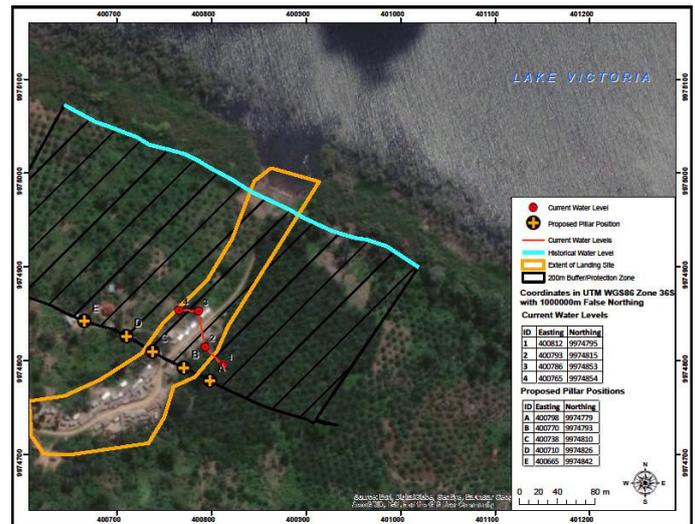
The assessment was participatory, and involved the local government political and technical leadership, right from the district to the lowest local government directly superintending the landing areas. In total, we assessed 25 landing sites, namely Luuku-Bugoma, Mapeera, Kasamba, Nakatiba, Kyagalanyi, Kananaansi, Mwena, Mutambala, Ssenero, Kasekulo, Kamwanyi, Ddajje, Buyiri, Bwamba, Njoga, Kasenyi, Banga-Kagolomolo,

Banga, Bungo, Buziga, Kibanga, Mabigo, Kasamba-Kyondo, Lwabalega-Kitooke and Kazi-Malanga.

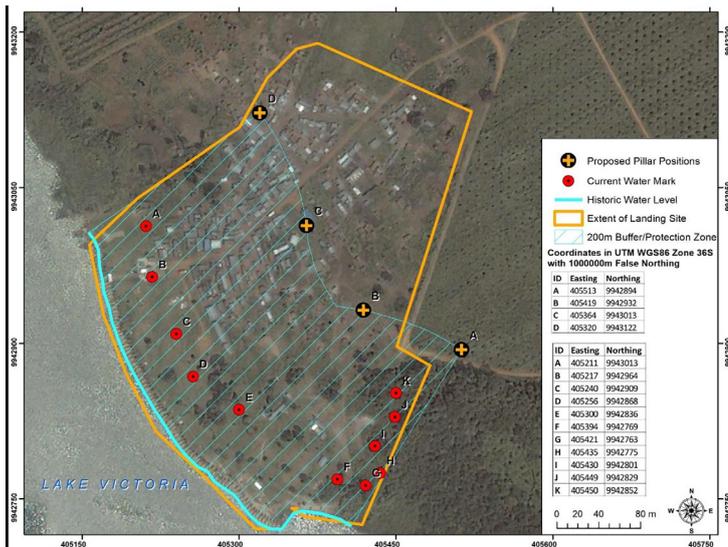
Findings

Generally, the rising water levels affected all the landing sites in one way or the other, including submerging docking sites and processing areas, hence requiring communities to move high up on dry ground, which is either congested or already limited because of forests and oil palm plantations. For these, the recommendation is to decongest or relocate them. Not surprisingly, there are several landing sites where there were no developments 50 – 100 metres from the lowest water mark, owing to several community engagements NEMA and the district undertook several years ago. However, many landing sites have permanent structures in the protection zone, although the ground here is firm and elevated to suffer inundation any time soon. There are also landing sites that are poorly situated – generally low-lying ~1 m above the current level of the lake, where communities relocated because much of the area is under water.

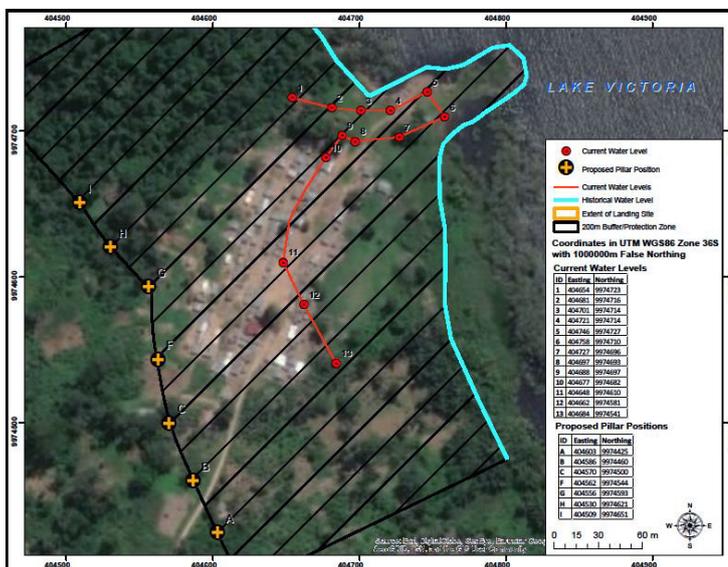
Bungo Landing Site as of August 2020: More than a quarter of the site is under water, and there is no room for extension on dry land. (NEMA photo)



Buziga Landing Site as of August 2020: The site is limited either sides, and upland because of oil palm plantation and a forest, respectively. (NEMA photo)



The level of flooding relative to the structures at Nakatiba Landing Site in Kalangala District as captured in August 2020. (NEMA photo)



Pillar demarcations

A total of 21 landing sites were selected and demarcated in November and December 2020, taking into account the historical and current water marks. What is left to be done is to support the communities develop land use plans, which they require when seeking approval from NEMA to operate within the protection zone of the lake. This will encourage self-regulation and ensure compliance with environmental and public health laws and regulations, for the benefit of the communities and the ecosystems they depend on.

By Dr. Joreme .S. Lugumira the natural resources manager (soils and land use) at NEMA.



Fish deaths on Lake Victoria: What went wrong?



Mr. Tony Achidria

There are growing concerns about the rising number of dead fish, especially Nile Perch, being washed ashore of Lake Victoria.

Lake Victoria is the largest lake in Africa and chief reservoir of the Nile, lying mainly in Tanzania and Uganda but bordering on Kenya. Its area is 26,828 square miles (69,484 square km).

Initially, the dead fish were an eye sore to the communities, but as the numbers of fish being washed ashore kept growing, the assumption by members of the community was that the Lake is contaminated by poisonous chemicals.

Lake is vital

The lake is an important ecosystem for biodiversity and is major source of water and supports a number of livelihoods and development projects. It is the lifeline of most communities living around the shores.

Following the reports of the unusually high number of dead fish being washed ashore investigations were instituted to ascertain whether the cause was a breach in the environment controls put in place to prevent contamination of the resource.

On a positive note preliminary investigations ruled out the

possibility of poison and attributed the occurrence to a drop in oxygen levels. Nile Perch is species of fish known to be sensitive to low oxygen levels (below 2mg/l).

This is partly as a result of the recent flooding and rising water levels where large masses of weeds were submerged and sunk into the lake bed. These weeds use up oxygen as they rot from within the lake hence a drop in the oxygen levels.

Secondly, the recent strong winds around the Lake Victoria basin heightened lake overturn; a phenomenon that causes water from the bottom of the lake that is low in oxygen, to come up and mix with upper layers, where fish live; leading to a reduction in oxygen, hence the death of fish.

Situation not new

This is not the first time large scale fish deaths are occurring on Lake Victoria; fishing communities have always referred to this situation as 'Kaliro' and it occurs periodically.

Following deeper investigations, the Permanent Secretary at the Ministry of Agriculture Animal Industry and Fisheries, Mr. Pius Wakabi Kasajja, issued a statement regarding the lab findings on the fish deaths.

He confirmed that 'fish kill' is an annual phenomenon that usually occurs on Lake Victoria and is associated with weather patterns. However, due to severe weather patterns in 2020 and past weeks, the extent of fish kills reported

this time was higher and disclosed that the fish deaths were not only on Lake Victoria but parts of Lake Kyoga as well.

"Fish and water samples were picked from different landing sites and taken for analysis for toxicology, algae and Pesticide Residue Analysis," Mr. Kasajja explained, adding the communities had indeed recently experienced windy days causing the water to get turbid.

"Communities also reported significant floating vegetation covering the fishing grounds coupled with the floods," he said and added that the decomposition process of the floating vegetation uses up oxygen from the water. On Lake Victoria, investigations show that the fish kills were localized in Wakiso District.

Kenyan experience

Inquiries from Kenya reported no significant fish kills observed with only one landing site (Nyandihwa) reporting fish kills of about 200kg in December. In Tanzania side, fishers from Mwanza did not report any mass fish deaths.

Results from the recent lake wide hydroacoustic indicated widespread thermal stratification patterns, most prominently in the North Western, South Western and North Eastern sectors of the lake.

Dissolved oxygen profiles showed instances of anoxia or below critical levels of dissolved oxygen occurring at the bottom depth zones.

Reports by Directorate of Water Resources indicated Dissolved

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Oxygen as low as 3m/l in some places reflecting anoxic conditions. A lot of algal blooms were observed along Entebbe Bay.

According to Scientists from NaFIRRI, Lake Victoria is known to get thermally stratified during the long dry season (December – March) and generally mix during the strong winds of the short dry season (July –September). However, from 2019, there was higher than normal rainfall causing water levels to rise. Because of this there was no usual mixing during the July – September season. This could explain the prolonged thermal stratification observed in October – November.

Laboratory analysis found blue-green algae dominant, although microcystis, the toxin producing genera were found in all sampled sites. The presence of microcystis may not be related to the fish kills given the fact that no fish mortalities were reported in other parts of the lake where similar studies have been previously conducted.

All samples tested for the poisonous organophosphates, organochlorines and pyrethroids were negative.

Communities living around the lake have now been advised to bury the dead fish to contain the pungent smell and continue consuming fish that is caught through the proper channels as there is no risk of poisoning.

By Tony Achidria the senior public relations officer, NEMA.

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Speaking about environmental legislation and policy in Uganda, the senior legal officer at NEMA, Ms. Sarah Naigaga emphasized that all environment management legislations are anchored in the Constitution of the Republic of Uganda. She also highlighted some of the legal provisions key to environment management including: environment, social impact assessment, policies related to energy, wildlife, land, noise standards regulations, and waste management regulations, among others.

Closing the training on behalf of the chief administrative officer (CAO) Jinja, the assistant CAO, Ms. Barbra Linda Nakayenze, appreciated NEMA for organizing the training. She also requested NEMA to plan for the journalists in form of facilitation in order for them to capture authentic environment data.

By William Lubuulwa the senior information, education and communications officer, NEMA.

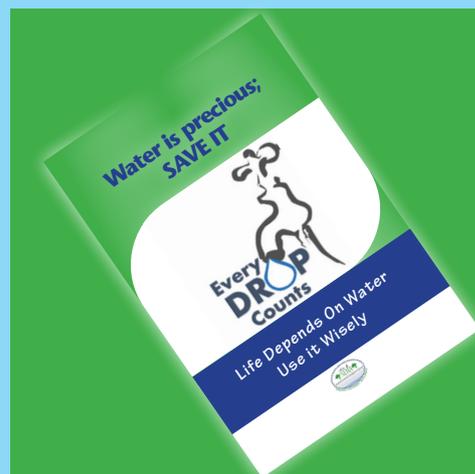
the journalists that while decentralization is in force, the central government has not given away all her powers.

She also cautioned the journalists to take care of what is reported, not to 'blow issues out of proportion' and end up inciting public violence.

The training, which brought together journalists from print, electronic and online media outlets practicing in the districts of Busoga sub-region, aimed at familiarising the media fraternity with the world of biodiversity, environment management and nature conservation; and also meant to equip journalists with knowledge and key aspects related to constructive and positive reporting on the environment.

Speaking at the same function, the Jinja District senior environment officer, Mr.

Moses Maganda highlighted a number of challenges facing the environment in Busoga sub-region including the indiscriminate cutting down of trees in favour of sugar cane growing and search for wood fuel. He warned that "if environment management remains wanting, Busoga and Uganda, in general, may have almost no wetlands by 2050."



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