

State Minister for Environment visits NEMA



State Minister for Environment Hon. Beatrice Anywar meets NEMA ED Dr. Tom Okurut in his office

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Newly appointed Minister of State for Environment, Hon. Beatrice Anywar visited NEMA on February 19, 2020 to brief management and staff about the expectations from the sector.



By Tony Achidria
Senior Public Relations Officer

The Minister fondly known as #Mama Mabira drawing from her passion to protect Mabira Forest at a time when there was a proposal to gazette part of the forest for sugarcane growing; was taken on a tour of the NEMA building and the facilities there in, including the Library, Laboratory, Geographic Information Systems and ESIA centre.

At the GIS centre, the minister learnt that NEMA is able to determine the exact boundaries of natural systems such as wetlands, forests, rivers, lakes etc. GIS technology is used to determine location of transmission lines, sewer lines, drainage channels and the technology was also used to develop the Uganda Wetlands Atlas.

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EDITORIAL

In December 2019, Hon. Beatrice Atim Anywar was appointed Minister of State for Environment. Well known by the moniker Mama Mabira, over the years Hon. Anywar has made her mark as a staunch advocate for environment. In February NEMA was honored to host the newly appointed Minister of State for Environment. Hon. Anywar was briefed about the operations of NEMA on roles, achievements and the challenges. The details of the ministerial visit are in our lead story for this issue of the NEMA Newsletter.

Meanwhile the country experienced an emergency in the form of an invasion of desert locusts. NEMA has played a key role in the fight against the invasion by regulating the chemicals being used in the fight against locusts. The fight against locusts, the world wetlands day and information regarding the state of a national e-waste collection center and much more make up the rich collection of stories in this issue. Enjoy your read.

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State Minister for Environment visits NEMA

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The minister tasked the team to utilize the technology to develop a document that will be used to demarcate all natural critical ecosystems and possibly adopt newer technology that can provide real time data on activities taking place in, around or near critical natural ecosystems.

At the NEMA library, Hon. Anywar noted that it is critical to share information with the public and leaders in local governments such as district environment officers, in order to have synchronized environment management decisions from top to bottom and vice-versa. The NEMA library also runs a tool known as the e-board that enables staff to access all relevant information. Plans are underway to upgrade the system to ensure that the e-board is available online, for everyone seeking environmental information.

NEMA Executive Director, Dr. Tom Okurut, in a presentation to the minister, explained the role of NEMA in environmental management emphasizing that in spite of the institution being a regulator, many people still expect NEMA to undertake the duties of local governments in managing local environmental issues such as noise pollution. Dr. Okurut also highlighted the challenges NEMA faces including misperception of roles, limited staffing and funding.

He also highlighted NEMA's achievements including successfully monitoring large development projects such as Isimba, Karuma, Entebbe Express Way and ensuring that these have been completed without significant damage to the environment. He further explained that contrary to press reports the commercial rice growing project in Lwera was approved by NEMA and it is not dangerous to the environment.

In her address to top management, Hon. Anywar assured the team that there is good will from

the head of state and that the Environment is on top of the agenda. Hon. Anywar committed to advocating for a total ban on single use plastics, protection of critical ecosystems such as of wetlands, forests, rivers and lakes. She further emphasized that the law would catch up with individuals who are causing environmental degradation; and promised to go on a field tour of all areas where NEMA has had interventions in order to ascertain the challenges and success stories.

In addition, NEMA has been tasked to draft a Cabinet Paper putting a case for the Environmental levy in line with the new Act; and compilation of the list of land titles in wetlands including those that had been cancelled.

Finally NEMA will submit the necessary documentation regarding the ban of kaveera, including the current provisions in the act. This is intended to re-ignite the processes to effect a total ban on single use plastic carrier bags.

Accounting for Nature

By Tom Geme – Project Officer

The unprecedented decline in natural capital is increasingly becoming a common concern globally. Resources both renewable and non-renewable are dwindling fast. The concern for the former is attributed to utilisation and/or exploitation pattern that is unparalleled to the natural replenishing rates for this natural capital as well as anthropogenic activity that undermine the integrity of related biogeochemical systems. The phenomenon of biogeochemical systems integrated has been extensively illustrated by Rockström and others in a 2009 paper on Planetary boundaries.

In part one of the write-up on Accounting for Nature, I introduce the concept of natural

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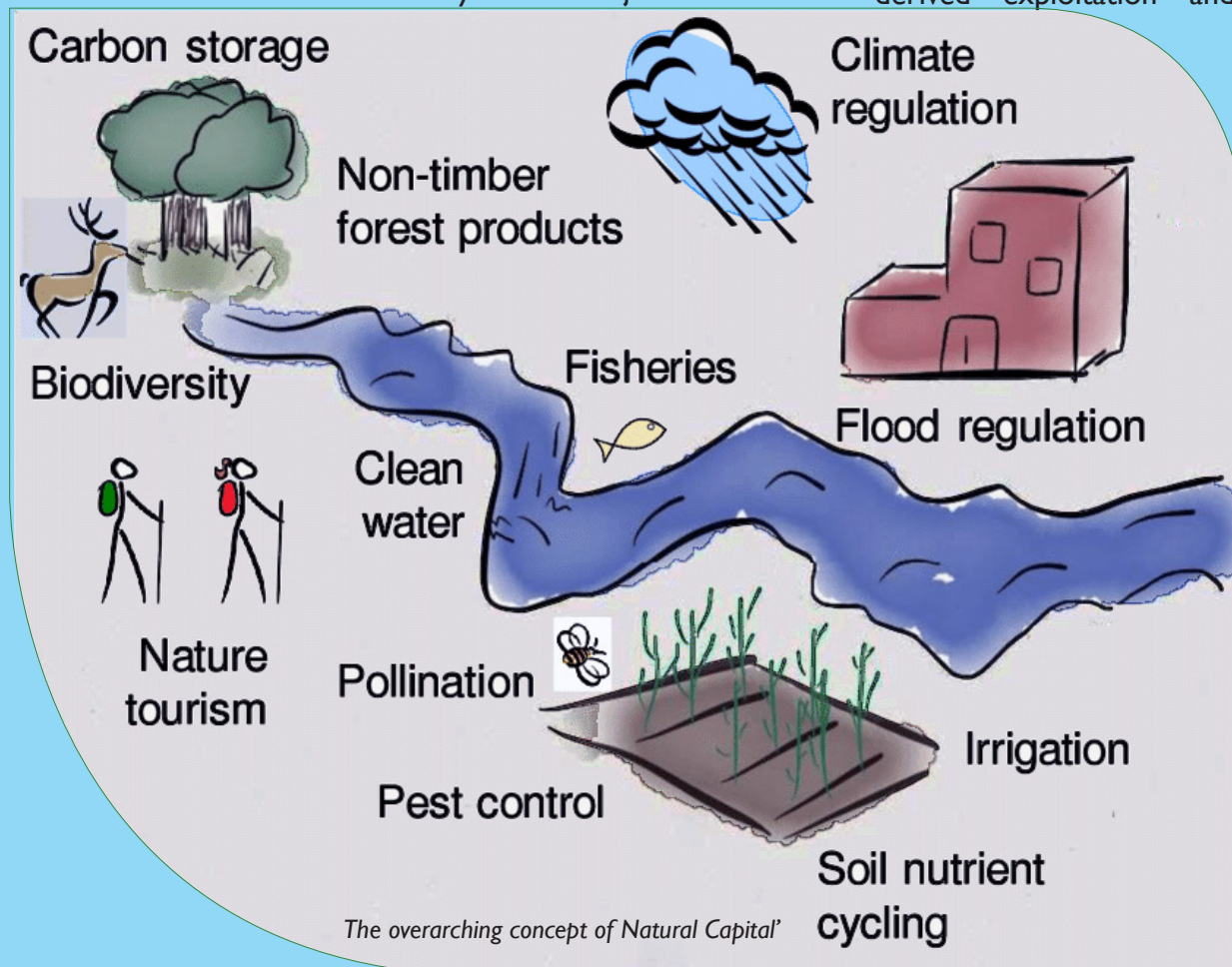
capital, examples of natural capital and why we should be concerned about the depletion rates. Further, I introduce the concept of Natural Capital Accounting (NCA), its conception, rationale, benefits and shortcomings. In a later publication, part two of Accounting for Nature, I will give an account of NCA in Uganda, highlighting some case-studies and projects on NCA, the lessons and the vital role of such undertakings in fostering sustainable development in Uganda.

Natural Capitals are resources from the environment that provide goods, flows and ecological services required to support life. They include minerals, water, biodiversity, soils and air.

The benefits from natural capital notwithstanding, current business practices; development patterns; environmental modifications; exploitation of resources from other countries and government policies are continuously undermining stocks of natural capital. This not only has financial implications such as increased market prices due to resource depletion but also environmental implications as services provided by ecosystems are damaged and unable to function effectively which in turn, causes flow-on effects. A case in point is as greenhouse gas emissions like carbon dioxide increase and areas responsible for carbon sequestration (sinks) decrease, global temperatures rise, weather patterns change, sea levels rise, terrestrial and aquatic ecosystems re-adjust and land use

like the environmental transition hypothesis and the environmental Kuznets curve that are premised on the instrumental value of ecosystems and the need to exploit them for socio-economic development. The challenge, however, is that unchecked socio-economic development may undermine further development due to depletion of resources required for development let alone lead to adverse impacts that may negate the benefits that have been accrued from exploitation of natural capital consequently decreasing the quality of human life.

Owing to the adverse impacts of the depletion of natural capital including the loss of natural income, i.e. monetary income derived exploitation and use



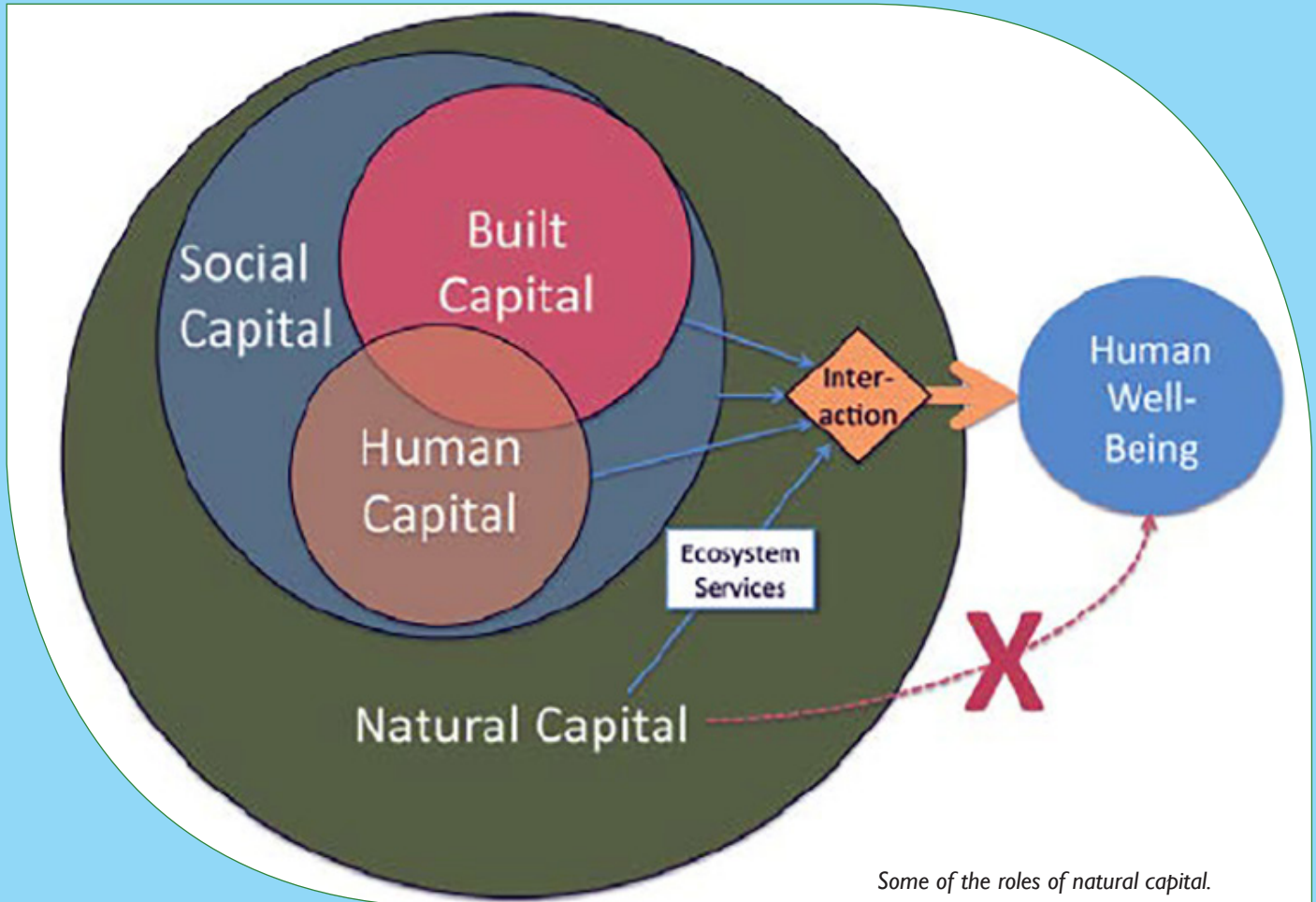
The 2005 Millennium Ecosystem Assessment (MEA) categorises benefits from nature as provisioning, regulatory, cultural or supporting. This, therefore, underscores the unwavering importance of natural capital in socio-economic development.

patterns change.

Further, until recently, environmental protection has been a secondary issue in traditional planning and policy frameworks. This is attested by the belief in development theories

of natural capital, as well as interference with the planetary boundaries, there was and there

still is need to mainstream environmental protection mechanisms into national planning and policy frameworks. Natural



Some of the roles of natural capital.

Capital Accounting (NCA) is one of the several mechanisms to this realisation. NCA entails the calculation of natural resource stocks and flows within an ecosystem. The conception of NCA was motivated by the 1987 Brundtland report on 'Our Common Future' and subsequent global summits on sustainable development such as the Rio Summit whose Agenda 21 in Chapter 40 calls upon parties to develop quantitative information regarding their activities. In 2010, the Aichi Targets were adopted by the Parties of Convention on Biological Diversity with Target 2 explicitly advocating for the inclusion of biodiversity values in national accounting frameworks by 2020 at the latest. NCA seeks to integrate natural resource and economics analysis so as to offer a comprehensive picture on development thereby signalling to businesses and decision-makers of the importance of monitoring and valuing natural capital.

There are several approaches to accounting for environmental resources. A full account of these

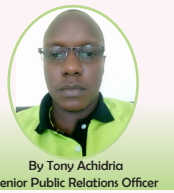
approaches may be found in a 2019 paper by Dickie and Neupauer titled Natural capital accounts: nations and organizations. Briefly, however, these approaches are environmental accounts, ecosystem accounts and then natural capital accounts. Environmental accounts such as the System of Environmental-Economic Accounting (SEEA) Central Framework seek to integrate the environment into national accounts, and subsequently, environmentally-adjusting or "greening" macroeconomic indicators such as GDP. This is by recording stocks and flows relevant to both the environment and the economy and may include aspects like physical flow accounts; functional accounts for environmental transactions; and asset accounts in physical and monetary terms. Ecosystem accounts, on the other hand, seek to go beyond the information given in the environmental accounts. This is by integrating the functional roles of ecosystems to socioeconomic development. As part of its final output,

therefore, ecosystem accounts offer detailed information on the ecosystem condition, extent and supply/ services in addition to the monetary asset and thematic accounts. Lastly but not least are the natural capital accounts. These go further in detail to the information given in the ecosystem accounts by including biotic and abiotic services that accrue from the ecosystems.

In the next NEMA newsletter, international, national and sub-national efforts to streamline biodiversity related natural capital will be covered. This will include earlier and current efforts to account for natural capital in Uganda.

NEMA inspects locust infested areas to ascertain impact of spray chemicals

The invasion of locusts in the horn of Africa has been described as the worst in 25 years by the Food and Agriculture Organization (FAO). Having come from Somalia and Ethiopia via Kenya, the first swarm of locusts entered Ugandan territory on February 9th 2020 through Amudat district.



By Tony Achidria
Senior Public Relations Officer

The invasion was classified as an emergency and therefore immediate control measures were initiated. These were exempted from Environmental Impact assessment because of the nature of the emergency. Having been on standby to monitor the situation, an Inter-ministerial task force was set up by the Office of the Prime Minister, spearheaded by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) with support from FAO, Uganda People's Defence Forces (UPDF) and Desert Locust Control Organization for Eastern Africa.

MAAIF subsequently sought advice from the National Environment Management Authority (NEMA) regarding the appropriate

locust control methods. NEMA recommended aerial spraying using either of two pesticides; fenitrothion and Malathion ; or ground spraying using either cypermethrin, lambdacyhalothrin or chloripyrofos.

However, in accordance with provisions under the Rotterdam and the Stockholm Conventions- which Uganda is signatory to, and the National Environment Act, No. 5 of 2019, the use and application of the pesticides is restricted for only controlled spraying in order to minimize environmental hazards.

At the moment there are 2,000 UPDF soldiers, clustered in 10 groups tasked to spray the locusts; these are under the command of Major General. Sam Kavuma. Spraying operations have been conducted in the areas of Amudat, Nakapiripirit, Soroti, Kaabong, Kotido, Napak and Karenga in the Karamoja region; while in the Acholi sub-region, the locusts have been sprayed in areas of

Orom and Lamwo. In March, led by the Minister of State for Environment Hon. Beatrice Anywar and Executive Director Dr. Tom Okurut, NEMA

undertook an inspection in Amudat, Nakapiripirit, and Soroti Districts to ascertain compliance regarding the use of pesticides.

Initial findings from the inspection indicated that new swarms of locusts were still entering the country through Amudat; the team encountered a swarm at Komaret and observed that they were yellow in colour and fly in the direction of the wind.

Also noted was that the locusts were adults and so far had only damaged /eaten the leaves of the balanite trees (Locally called Echoma), but much of the vegetation including the grass was intact and appeared natural.

The locusts are also very sensitive to noise. They are mobile for most of the day, but settle down during the night and, therefore, spraying has been effective at night.

Because of the hard nature of the soils, the locusts are laying eggs either on the surface or not deep in the soil (usually eggs are deposited 10-15cm into the ground). The insects have sought softer soils near riverbanks and swamps; while the females land to lay eggs, the males remain patched at the top of trees. There was no immediate impact of the chemicals sprayed; although the team observed a reduced population of butterflies in Komaret and interestingly many birds feeding on the locusts.

Among the notable challenges faced is the inaccessible terrain, especially the hard to reach mountainous areas; superstition and insufficient information causing anxiety among the communities. Some community members believe the locusts are a sign of a good harvest to come, a myth being propagated by some of the elderly who claim to have witnessed the last invasion in 1954. Besides, some locals get excited about the spraying exercise and therefore, even without the required protective



Hon. Beatrice Anywar(left) gets a feel of the locusts by NEMA Inspectors Nancy Allimadi and Monica Angom

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gear, they come with in dangerous proximity of troops during the actual spray exercise.

NEMA has since tasked MAAIF to implement the following;

- * Put in place a multi-sectoral monitoring team to oversee the application of the chemicals and monitor subsequent impacts;
- * Develop an Environment and Social Management Plan (ESMP) to ensure that social and environmental impacts, risks are effectively managed during implementation;
- * Map out GPS coordinates of areas where the spraying is taking place to ease monitoring;
- * Submit periodic reports and support strategic impact monitoring that shall be undertaken three months after the first spraying;
- * Mitigate any other undesirable impacts that were not foreseen earlier;

The locust invasion was an emergency causing panic in Uganda, however following the necessary interventions there are all signs to show that the menace is fully under control. NEMA will continue conducting rapid assessment of potential impacts of the control exercise and do a risk profiling of the affected areas and periodically sample the soil, water and air for analysis and monitoring.

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.

CELEBRATING WORLD WETLANDS DAY IN UGANDA BUSHENYI DISTRICT

Wetlands are land areas that are saturated or flooded with water either permanently or seasonally. It stays wet long enough for certain plants and animals to grow even when there has been no rain. Wetlands types include: Inland wetlands, these are marshes, ponds, lakes, fens, rivers, floodplains, and swamps. Coastal wetlands include saltwater marshes, estuaries, mangroves, lagoons and even coral reefs. Fish ponds, rice paddies, and saltpans are human-made wetlands. Healthy wetlands provide ecosystem services, such as water purification, water storage, carbon storage, flood protection and shoreline stabilization. These ecosystem services contribute to a range of benefits to the lives of human and wildlife. For wildlife, approximately 40% of the plant and 12% of the animal species of the world live or breed in wetlands despite them covering 1% of the total world surface.

According to the Ramsar Convention, 35% of wetlands worldwide have disappeared since the 1970s, and 87% have been lost since the 1700s. Wetlands are disappearing three times faster than forests due to reclamation for agriculture and development, pollution, over-exploitation of

natural resources (e.g. overfishing), invasive species and climate change. Loss of wetlands does not only affect wildlife but also to the local communities that live around them. Over 50 % of the world's population live within 3km of a wetland. Wetlands provide abundant food resources and support livelihoods for one billion people globally (Davidson, N. C., Van Dam, A. A., Finlayson, C. M., & McInnes, R. J. (2019)

Due to the depletion of the wetlands, we are losing the country's reservoirs of biodiversity and the services that we are relying on. Collaboration is needed to reverse the situation. On 7th February 2020 Uganda joined the rest of the world to celebrate the world wet land day as a key obligation of the contracting parties to the Ramsar convention, and also to raise awareness, educate and also improve the management implementation and to ensure that the wetlands are sustainably managed.

The World Wetland Day is celebrated on 2nd February of every year all around the world to make the public aware, discuss the values of wetlands, beneficial aspects as well as to promote

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The Chief Guest Hon Moses Ali (middle on the high table), Hon. Beatrice Anywar (in yellow Gomesi) and Deputy Executive Director NEMA Ms Christine Akello (back row right), among other dignitaries celebrating World Wetland Day in Bushenyi District on February 7. (Nema Photo)



Deputy Executive Director NEMA Ms Christine Akello, greeting the State Minister for Environment Hon. Beatrice Anywar during the World Wetland Day celebrations in Bushenyi district (NEMA Photo)

conservation and sustainable use, to enhance the overall level of the human health, growth, and development. The demands of water required for growing crops, energy supply and various needs of the industry are also focused on during the celebrations. It is celebrated to promote the proper use of wetlands and their resources, also to remember the Ramsar Convention on Wetlands which was signed on the 2nd of February 1971 in the city of Ramsar.

The Ramsar Convention is an international treaty aimed towards the conservation and sustainable use of wetlands. The Convention is an intergovernmental treaty, which provides a framework for national action and international cooperation for conservation and wise use of wetlands and their resources. The general aim of the convention on wetlands is to halt the world wide loss of wetlands and to conserve them through wise use and management. Uganda in 1971 signed the Ramsar Convention and membership was validated in 1988, On 4th July 1988 the convention entered into force in Uganda.

Uganda remains at the cutting edge of Wetland conservation through policy development and implementation, establishing institutional frame work and adopting effective strategies and tools. Since the signing of the convention Uganda has delivered on many commitments such as; Adoption of a National Wetlands

policy: Establishment of a Wetland Management Department under the Directorate of Environment Affairs in the Ministry of Water and Environment; Establishment of a Multi sectoral Wetland Advisory Group to guide wetland Policy implementation: Ensuring the integration of wetlands in government financing through the

Poverty Action Fund and the National Development plan; Boundary demarcation and restoration of degraded wetlands including eviction of un authorised wetland users to list but a few.

Section 54 and 55 of the National Environment Act N0.5 of 2019 Mandates the National Environment Management Authority in collaboration with relevant lead agencies, to ensure that wetlands are conserved for the common good of the people of Uganda. In the Implementation of the mandates, National Environment Management Authority (NEMA) joined the rest of Uganda to celebrate the World wetland Day, Under the theme “Wetlands and Biodiversity” on 7th February 2020 with a National Slogan “Life thrives in Wetlands-Protect them” at Bumbaire Sub county Headquarters Bushenyi District.

The objectives of the celebration of world wetland day were;

- * To halt the world wide loss of wetlands and to conserve them through wise use and management
- * To raise awareness about

the need for the wise use of wetlands

- * To take stock of wetland management in Uganda by drawing wider attention of the public on the role in managing sites declared as Wetlands

NEMA's role in the commemoration of the World wetland day sets out to create awareness as regards management and utilization of wetlands, environment management, conservation, and Sustainable development. This was through one on one interaction (Question and answer) with the public and the NEMA officers, mass media, information Education and communication materials distribution inform of take home NEMA brochures, fliers, Environment Impact assessment brochures, Newsletters, make Uganda a Kaveera free country stickers and the guidelines for environmental impact assessment in Uganda.

The main World Wetland Day celebrations took place at Bumbaire Sub county Headquarters Bushenyi District. It attracted several NGOs, CBOs, Private Businesses and Government



NEMA staff Mr. Tony Achidria on the NEMA Stall talking to a community member (NEMA photo)

organization that showcased goods and services to the guests these included; National Water Sewerage Cooperation, Open streets advocating for sustainable cities, Basheruka women group, Adritex- water solutions exhibited water for irrigation pipe, Nyaruzinga community wetlands products, Environment CSO Network- environment and Natural Resources Civil Society

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Cultural group Entertains guests during the World Wetland Day (NEMA Photo)

Organization, Wetlands and management department, Ministry of Water and Environment - water for production regional center west and Blood donation camp facilitated by Red Cross. The Presidential initiative on banana industrial development products exhibited banana flour, porridge flour, bread and cakes at the venue.

Among the dignitaries who graced the ceremony included; Religious leaders, first Deputy Prime minister of Uganda (Guest of honors), District chair person, Members of Parliament, Hon. Minister of Water and environment, Hon. State Minister of Environment, Cultural leaders, Representative of secretary General of Ramsar Convention, Permanent Secretary Ministry of Water and environment, Local Council leaders I,II,III and V

The Bushenyi District leadership pointed out the achievement of the district as regards to the wetland management, these included; Conservation of Nyaruzinga wetlands, Mapping of wetlands targeted for restoration, and with support from Ministry of Water and Environment demarcated all wetlands and also sustained the local wetland concern efforts. Challenges faced by the District highlighted included experiencing obstacles in the restoration and eviction of people from the wetland and the Limited finances to undertake various activities.

The Secretary General of Ramsar Convention in her speech read by Mr Alfred Okot Okidi the permanent Secretary Ministry of water and environment. She recognized the importance of Biodiversity without it our ambitions for a better world for all will not be realized, certainly

without biodiversity we face an uncertain future. Loss of Biodiversity symbolizes the unprecedented disappearance, degradation and unsustainable use of the ecosystems on which we all and other living things depend on to survive and thrive. Healthy and diverse ecosystems, especially wetlands, are our life support. They provide our water, food and strengthens economies. They offer powerful solutions for health, poverty, climate change and sustainable development as whole. Safeguarding biodiversity in all its forms is now as urgent as tackling climate change. There must be no further loss of our wetlands- the most bio-diverse and valuable ecosystem we have. And we must restore those we lost. It is not too late to avert a mass extinction and secure our future wellbeing. Wet land must be at the heart of national and global biodiversity discussions, decisions and actions in 2020 and beyond.

Minister for water and environment in his speech, congratulated Bushenyi District Local Government for successfully organizing the celebrations. He also thanked the stakeholders in the wetland management for all the efforts made toward wetland conservation. He acknowledged, and thanked His Excellency the president of Uganda for his personal initiative in the conservation of the wetlands. He informed the public of the two critical interventions; the cabinet directive to cancel land titles issued in wetlands on public land acquired unlawfully after 1995; the presidential initiative to raise funds for wetland management that yielded funding through the green climate fund that is matched by contributions from Government of Uganda and United Nation Development Programme. These are key in the conservation of the wetlands and the resources they provide to the masses

The newly appointed Minister of state for Environment Hon Beatrice Anywar in her speech said that wetland cover has decreased to 15.4% over the past years. In 2016, wetland coverage reduced annually at 2.5% and it is likely to continue reducing tremendously by 2040.

Wetland reduction which was highlighted at Tare he sita celebrations and approximately 10 Billion shillings is required to restore wetlands which are degraded.

It is pertinent to advance ecosystem conservation agenda Hon. Minister further said that the greatest hiccup of wetland management is negative attitude/ poor mindset and limited knowledge about the importance of wetlands. She asked the public to safe guard the wetlands for the good of their children

She concluded inviting the of honorable Minister of General Duties Honorable Mary Busingye Karooro Okurut who later invited the guest of Honor.

The guest of Honor first deputy Prime Minister General Moses Ali thanked Bushenyi District for accepting to host the event. He informed the public that for wetlands degradation, both the educated and the uneducated are culprit as they devise means of survival. Due to the rapid encroachment on wetlands our future is becoming more uncertain due to its effects. We cannot just sit and watch as the wetlands are being invaded by the communities. As we move forward with the wet land conservation, we need to take stalk of our challenges and achievement and also chart the way forward for the present and next generations. He thanks Ministry of Water and Environment for taking stalk of the wetland, conservation, restoration and the sustainable utilization of the wetland. The he finally wished the public a joyous wetland day celebrations "For God and My Country". The Minister also recognized those



A marathon winner receiving his prize from the chief guest during the World Wetlands Day (NEMA Photo)

that participated in the marathon by giving certificates and bicycles.

National E-Waste Collection and Disposal Centre in the offing

Since the early 1990s there has been a steady increase in the number of electronic and electrical equipment (EEE) and devices imported into Uganda for both domestic and commercial purposes.

Such technology and equipment has its positives in terms of increasing efficiency and simplifying developmental processes. However, this has come with concerns about environmental, human and health safety of such electronics at the end of their useful lifespan. At this point old devices and

form the National E-waste Steering Committee to set up a sustainable national E-waste collection and disposal centre.

Luwero Industries Limited (LIL), a liability company under the Ministry of Defense in corporation with NEC, among other national interest, has since 2011 been at the center of improving waste management services (waste treatment and disposal) in the country, with waste management facilities including an incinerator, waste water treatment plant, an engineered landfill and the associated infrastructure, located in Kiguli



NEMA Officials led by NEMA ED Dr. Tom Okurut Inspecting the E-Waste collection site (NEMA Photo)

equipment turn into electronic waste; e-waste.

E-waste is now the fastest growing waste stream globally and Uganda has not been spared. A 2017 UN Environment Agency survey estimated the stock of e-waste in Uganda at an annual growth rate of 25,000 tons. This required special attention to be given to the sector and for interventions to be adopted to mitigate the adverse effects of e-waste to human health and the environment.

The National Environment Management Authority (NEMA), charged with the regulation of waste management in Uganda, conducted a needs assessment survey for e-waste with support from UNDP; and has taken several steps to address the emerging concerns. NEMA is working closely with the Ministry of Information Communications Technology (MICT), National Enterprise Corporation (NEC) and other stake holders who

LC.I, Wajjala Parish, Rwanpanga Sub-County, Nakasongola District.

NEMA earlier released a sum total of 291 Million Uganda shillings to furnish the facility and inspections of the proposed E-waste collection center have been ongoing to ascertain the progress

Plans are under way to draft standard operating procedures on how to handle electronic waste and the E-waste collection and disposal centre is set to be commissioned later this year.



*By Tony Achidria
Senior Public Relations Officer*

Agro-pastoral farmers' perceptions of drought

Introduction

Drought is an important factor affecting agriculture and livestock and the most constraining climate extreme to livelihoods. Drought is an extreme and recurring event that affects the livelihoods of people around the world and is regarded as the most important disaster in economic, social and environmental terms. Studies show that, of all natural hazards, drought is expected to become a more important factor affecting agriculture and livestock.

Drought and its characteristic extended period of moisture deficiency, greatly affects smallholder farmers especially in the developing countries whose livelihood principally depends on natural resource. Drought destructs market access, trade and food supply, reduces income, depletes savings and erodes livelihoods. In Africa, Small scale rural farmers have limited capacities to deal with the effects of drought, partly due to high levels of poverty.

In Uganda, drought is increasingly threatening local community livelihood. The cattle corridor of Uganda experiences the most extreme conditions. Over 98% of the local community depend on rain fed subsistence agriculture and natural resources for livelihoods. The occurrence and severity of drought is perceived to be triggered by widespread deforestation, wetland degradation, high dependence on rain-fed agriculture and limited application of adaptation inputs. In the study carried out to examine agro pastoral farmers' perception of drought in one of the cattle corridor Districts of Central Uganda, key observations conclusions and recommendations were drawn

The majority of agro pastoral farmers (99.3%) reported that they had experienced drought in which a sizable number (32%) explains that the drought extreme periods normally lasts for 5 months. The famers also reported that they had experienced drought at various times since 1978 with 2018 being the worst period. This finding is not surprising following earlier studies of Mfitumukiza, Barasa and Ntale (2017)

having reported clear scenarios drought episodes in the cattle corridor.

Perceived Causes of drought

Agro pastoral famers (59.3%) perceived that forest degradation was the major cause of drought in their locality in which a clear figure (23.3%) explain that trees were mainly cut for charcoal production while given percentage of about 11.1% emphasized that sugarcane growing was another cause of drought, particularly. It was revealed that sugarcane farms had been established in areas where forests and wetlands formerly existed. For example, Mehta and Madhvani Companies had cleared 1,600 square miles of land for sugarcane growing in these areas. It was also noted that:

“there are also some individual sugarcane out grower farmers who have also cleared their land to plant sugarcane. The trees which were cleared by the companies and individual farmers were used for charcoal production and firewood. However, no replanting has been done hence escalating the drought conditions in this area”.

Figure 1: Massive forest clearance for sugarcane growing recently in lira (Nema Photo)

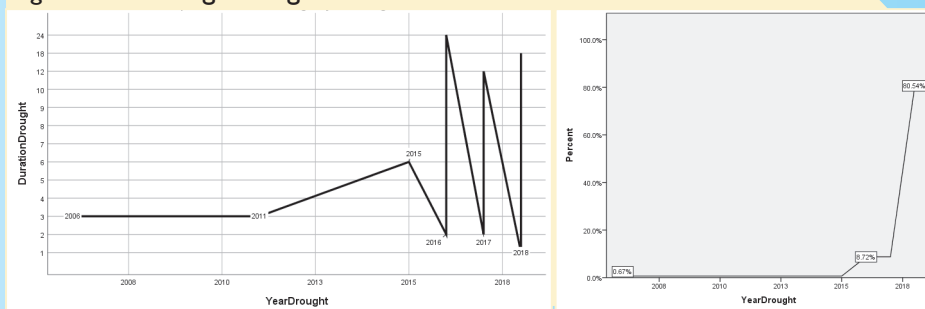


Drought occurrences and trends as perceived by agro pastoral famers'

It was noted that a small section of farmers (0.67%) recorded a constant decrease in drought conditions in some years sighting 2007 to 2015. However, between 2015 and 2017 a sizable number of agro pastoralists (8.72%) experienced a slight increase: whereas the majority (80.54%) respondents experienced extreme conditions in 2018. It was also clearly noted that noted:

“During the 1990s the wet seasons were evenly distributed into two long seasons of about 4 months each season which is not the case today where the rain season is certainly unpredictable”.

Figure 2: Showing Drought occurrences and trends



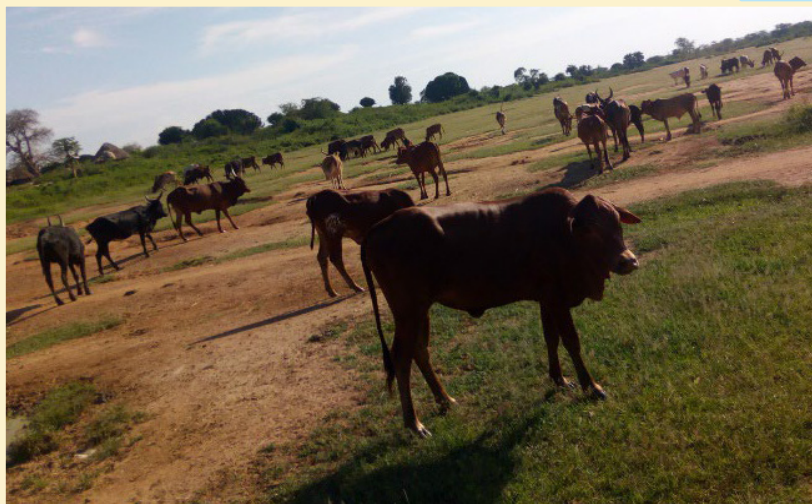
Perceived effects of drought on agro pastoral households

The majority of agro pastoral famers (90%) reported that their households had been affected by drought. The findings concur with Mfitumukiza, Barasa and Ntale (2017) who reported that the study area has a history of prolonged drought since the early 1980s. a section of famers 42% reported that during drought periods, they experienced low food output and low incomes noting that food becomes expensive amidst limited purchasing power. This is clearly

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supported by (Zizinga, et al., 2017) who noted that sudden increase in temperatures create a fundamental problem for farmers who seek to maximize seasonal farm yields, hence a decline in yields and a decrease in house hold incomes.

Figure 3: Stunted maize fields and un healthy animals recently in lira (Nema Photo)



Derived Conclusions and recommendations

Its therefore established that majority households experience drought cases which exalted between the year 2015 and 2017 with extreme conditions faced in 2018. This being attributed to deforestation for charcoal burning, large scale sugarcane plantations and wetland conversion. In terms of productively and social livelihoods, Drought resulted in low food production and low house hold incomes.

Drought at local scale in this area is largely being described in social economic terms. The effects of drought were largely based on agricultural production(output) and income levels. Agro pastoral farmers

relied largely on their past and present observations to describe drought occurrences and trends in which cases correlates with scientific knowledge. Agro pastoral farmers had perceived and marked permanent increase of drought scenarios between 2015 and 2018.its thus very critical to cope and integrate such opinions and perceptions in planning process. Although agro pastoral farmers clearly perceived the changes in drought, they are struggling to adapt to these changes.

Its therefore important for government to support agro pastoral famers create income generating activities for alternative livelihoods during the dry spell that will boost their incomes and wellbeing. It is also

important to include agro pastoral farmers' opinions and perceptions in adaptation policies, strategies and programs streamlined by government and NGOs and Strengthening policy actions through making ordinances and by laws at sub county and district level on conversion of forests and wetland to sugarcane plantations. This could help agro pastoral famers identify specific coping mechanisms that fit their society.

Edgar Basaliza
NEMA District Support Officer
Lira District

NEMA Preventing the spread of Corona Virus (COVID-19)



NEMA Security Staff taking a Clients temperature at the Entrance (NEMA Photo)

Measures at our offices;

- ☛ Screening client's temperature at the entrance
- ☛ Washing hands with soap and water at the entrance
- ☛ Use of alcohol based sanitizers at entrance, front desk, lounges and in the lift
- ☛ Frequent cleaning and disinfection of door handles, lift switches, and flat surfaces with soap and bleach



The impacts of continued degradation and misuse of the natural resources, Many settlements, commercial developments and other infrastructures are flooding and have been submerged



SUSTAINABLE DEVELOPMENT GOALS



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Fight Air Pollution to Protect Human Health and Environment"

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