

# Protecting Ondiri Wetland

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# NEMA enhancing climate change adaptation in African Countries

By: Joseph Odinga & Bismark Simiyu



**NEMA Kenya and South to South officials at Ole Sereni hotel in Nairobi during the workshop**

**L**ack of finance remains the greatest existential threat especially to African countries in responding to vagaries of climate change.

Environment and Forestry Principal Secretary Dr. Chris K Kiptoo, CBS has said many African countries are struggling to mobilize financial flows to address the climate emergency as per the Paris Agreement.

In a speech read on his behalf by Environment Secretary Administrative Mr. Joel Kitili, during the opening of the South-South Cooperation Grant Workshop, he said African countries are least responsible for the problem but bear the greatest burden with little ability to respond.

The PS said the South South programme of the Adaptation Fund is a commendable initiative on the way countries can support each other through the

accreditation process and improve access to climate finance.

He said Kenya is already experiencing climate related impacts that have increased vulnerability of communities and ecosystems with negative consequences on the economy and livelihoods.

“Climate finances is a big challenge and therefore the successful accreditation of Mozambique and Botswana will go a long way to address impacts of climate change, Kenya is privileged as a beneficiary of the Adaptation Fund as the National Implementing Entity as well as a Readiness Support beneficiary,” he added.

Dr. Kiptoo said Kenya is proud of its partnership with the Adaptation Fund especially in mobilizing and deploying climate finance to assist developing



**NEMA Ag. Chair, Dr. Lul Abdiwahid speaking during the workshop at Ole Sereni hotel in Nairobi**



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PS Environment and Forestry  
Dr. Chris Kiptoo, CBS

Dr. Kiptoo said Kenya is proud of its partnership with the Adaptation Fund especially in mobilizing and deploying climate finance to assist developing countries' built resilience to climate shocks.

Speaking during the workshop in Nairobi, NEMA Board Acting Chair, Dr. Lul Abdiwahid said NEMA accreditation of the two countries will open immense opportunities to unlock the necessary resources to address the climate emergency. She encouraged Mozambique and Botswana to seek strategic partnership both locally and internationally to scaling up climate action and support, including finance, capacity building, technology transfer in order to enhance adaptive capacity, strengthen resilience and reduce vulnerability to climate change taking into account the priorities and needs of developing countries.

Dr. Lul who went on to highlight how NEMA accreditation of the two countries will open immense opportunities to unlock the necessary resources to address the climate emergency.

NEMA Kenya Director General Mamo B Mamo, EBS said through the South South programme, NEMA supported Zimbabwe Environmental Management Agency (EMA) and Malawi Environment Endowment Trust (MEET) in the accreditation process.

He added that NEMA is implementing an Adaptation Fund funded programme in 14 Arid and Semi-Arid counties in Kenya with the aim to improve water resilient management systems, enhance food security, integrated shoreline and mangrove rehabilitation efforts, reduce the vulnerability of communities to climate change among others.

The week long workshop had participants from Botswana and Mozambique and was aimed at supporting the accreditation process for Mozambique and Botswana to enable them access the adaptation finance from the Adaptation Fund.



**NEMA Ag. Chair, Dr. Lul Abdiwahid , Secretary Administration Ministry of Environment and Forestry, Joel Kitili, CBS and NEMA DG Mamo B. Mamo, EBS during the workshop at Ole Sereni Hotel**

The participants further highlighted the Adaptation Fund South-South Cooperation grant and the Adaptation Fund accreditation requirements. Later on, NEMA staff representing different departments took the participants through the presentation of governance tools such as the procurement manual, risk management and audit manual, financial risk management manual as well as the legal status.

After a productive three days of deliberation, it was finally time to let loose, as they say all work and no play makes Jack a dull boy. The Botswana delegation were treated to a game drive at the Nairobi National Park “The world’s only Wildlife Capital” a short drive out of Nairobi’s business capital.

The visit was concluded with a dinner held in honor of our guests where they reflected on the gains made and the progress achieved thanks to our collaborative efforts and ubuntu spirit. It was agreed that going forward, the African unity should continue being our guiding light on the journey to make the continent

even greater. As the African proverb says, if you want to go fast, go alone. If you want to go far, go together



**NIE coordinator, Wangare Kirumba (R) with some participants donning Maasai attire during the workshop**

# UNEA 5.2: Leaders resolve to end plastic pollution

By: Agnes Kamiri & Joseph Odinga

**The heads of state and environmentalists from 175 countries made the historic resolution at the UN Environment Assembly in Nairobi to end plastic pollution, and forge an international legally binding agreement, by the end of 2024**

**The National Marine Litter Management Action Plan (2021-2030) and the National Sustainable Waste Management Policy were launched by CS Ministry of Environment and Forestry, Keriako Tobiko in presence of UNEP Executive Director Inger Anderson, NEMA DG Mamo B. Mamo, EBS among other officials**



**The launch of the National Marine Litter Management Action Plan (2021-2030) during the UNEA 5.2 in Nairobi**

The fifth session of the United Nations Environment Assembly (UNEA 5.2) took place in Nairobi from 28th February to 2nd March 2022.

The Overall theme for event was, “Strengthening Actions for Nature to Achieve the Sustainable Development Goals”. This highlights the pivotal role nature plays in our lives and in social, economic and environmental sustainable development.

Immediately after UNEA-5.2, the Assembly held a Special Session of the Assembly on 3 – 4 March 2022, which is devoted to the commemoration of the 50th anniversary of the creation of UN Environment Programme in 1972 (UNEP@50).

The special session was held under the theme “Strengthening UNEP for the implementation of the environmental dimension of the 2030 Agenda for Sustainable Development.”

Over the years, Kenya has partnered with UNEP to implement various activities that have overseen improvements in socio-economic spheres, particularly in forest conservation, a ban on single-use plastics championed by NEMA Kenya, environmental management legislation, including the Waste Management Bill that currently being discussed in parliament.

The two conferences brought together at least 2,000 delegates from 193 UN member states and was also attended by high-level delegates among them, four Presidents, from the Republic of Botswana, Maldives, Nigeria and South Sudan, the vice President of Tanzania and of Iran, the Prime Minister of Sri Lanka and Namibia, the UN Deputy Secretary General, the president of the General Assembly as well as several ministers of Foreign Affairs and of environmental ministries.

While still in the midst of a global pandemic, health and safety precautions were taken into account with all participants requested to download a self-reporting application on their smart-phones and willingly share

their Covid-19 statuses on a daily basis after taking self-administered rapid antigen testing given by the UN at no cost.

Every participant had high expectations of the anticipated outcomes from UNEP@50 commemoration which included the promotion of a more systematic approach to environmental challenges experienced in the world currently, strengthening UNEP through a renewed long-term vision building on the Rio+20 outcome document, strengthening of environmental integration as well as a reflection on the historic achievements, impacts and importance of international law.

Given the 93% success rate of the single-use plastic bag ban by NEMA Kenya, more progress was made as world leaders in Nairobi endorsed a landmark agreement to end plastic pollution in the next two years. The heads of state and environmentalists from 175 countries made the historic resolution at the UN Environment Assembly in Nairobi to end plastic pollution, and forge an international legally binding agreement, by the end of 2024



**NEMA officers, participants during UNEA 5.2 at UNEP, Nairobi**

The resolution ‘End Plastic Pollution: Towards a legally binding instrument’, aims to tackle plastic pollution in marine and other environments through reduction in product design, consumption and waste management. In the words of Inger Andersen, Executive Director of the UN Environment Programme (UNEP), “the agreement is the most important international multilateral environmental deal since the Paris climate accord”.

NEMA Director General. Mamo B. Mamo, EBS accompanied the Cabinet Secretary, Ministry of Environment and Forestry, Keriako Tobiko as they attended the High-Level Dialogue: Looking back 50 years of the UNEP Programme.

They participated in the UNEA 5.2 side event on circular economy in Kenya which was also attended by Denmark Minister for Environment, UNEP Executive Director, Inger Anderson, Lea Wermelin, Environment Principal Secretary, Dr. Chris Kiptoo, CBS and KEPSA CEO Carole Kariuki among others. The side event concluded with the launch of the National Marine Litter Management Action Plan (2021-2030) and National Sustainable Waste Management Policy.

The NEMA delegation led by Dr. Catherine Mbaisi, Mr. Stephen Katua, Dr. Ann Omambia, Dr. Mumbo, and Ruth Nderitu attended and participated in the Maritime Technology Cooperation Centre (MTCC Africa) side event ‘Reconditioning the Future’ under the theme ‘Decarbonization of Africa’s shipping sector through Energy Efficiency.’ The meeting was led by the PS, State Department for shipping & Maritime, Nancy Karigithu, CBS, The Vice Chancellor, Prof. Victoria Ngumi and Mr. Rob de Jong, Head of the Sustainable Mobility Unit at UNEP.

The NEMA team also participated in the event “Sustainable Oceans - The road to Lisbon: The 2022 United Nations Oceans Conference organized by The Governments of Kenya and Portugal to support the implementation of Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

As the week-long celebration concluded, significant gains were made towards our common sustainability goals and there was no doubt that Kenya remains a strong advocate for the environment and will continue to hold steadfast to its pledge of 1972 to support UNEP in the execution of its mandate.

The event culminated with the launch of the National Marine Litter Management Action Plan (2021-2030) and the National Sustainable Waste Management Policy which aims at enhancing circular economy.

The aim was to highlight the pivotal role nature plays in our lives and in social, economic and environmental sustainable development. UNEA-5 was an opportunity for Members States to share best practices for sustainability.

UNEA brought together governments, businesses, civil society and other stakeholders to agree on policies to address the world’s most pressing challenges. Chemicals and waste management, Marine litter and a green recovery from COVID-19 were some of the issues the UN Environment Assembly (UNEA 5.2) addressed when it convened for the resumed part of its fifth session. Environment ministers were expected to consider the adoption of a declaration on strengthening actions for nature to achieve the Sustainable Development Goals.



**NEMA Staff, visitors at NEMA exhibition booth**



**NEMA Board members, Charles Mulila and Ann Syombua are received by Joseph Masinde at the NEMA exhibition booth during the UNEA 5.2**

# UNEA 5.2 Resolutions

- End Plastic Pollution. The resolution addresses the full lifecycle of plastic, including its production, design and disposal.
- Sound management of chemicals, waste and preventing pollution.
- Nature-based solutions; actions to protect, conserve, restore, sustainably use and manage ecosystems.
- Ecosystem restoration, biodiversity protection, resource efficiency, consumption and production patterns, climate mitigation and adaptation, job creation and poverty reduction.
- Minerals and metals. Development of proposals to enhance their environmental sustainability along their full lifecycle.
- Sustainable Lake management calls on member states to protect, conserve, and restore, as well as sustainably use lakes, while integrating lakes into national and regional development plans.
- Sustainable and resilient infrastructure encourages member States to integrate environmental considerations in all their infrastructure plans.
- Animals' welfare. Member States to protect animals, protecting their habitats and meeting their welfare requirements.
- Biodiversity and health. Member States to reduce health risks associated with trade in live wildlife captured for the purposes of food, captive breeding, medicines and the pet trade, through regulation and sanitary controls.
- Accelerate actions to significantly reduce nitrogen waste from all sources especially through agricultural practices, and saving \$100 billion annually.
- Environmental dimensions of a sustainable, resilient and inclusive post COVID-19 recovery to strengthen measures to achieve a sustainable, resilient and inclusive global recovery.

## UNEP @50

This was a time to reflect on the past and envision the future. The 1972 United Nations Conference on Human Environment in Stockholm, Sweden was the first-ever UN Conference with the word “environment” in its title.

The Creation of the UN Environment Programme (UNEP) was one of the most visible outcomes of this conference on many firsts. UNEP, since that meeting on 5 June 1972, UNEP has become the world's leading advocate for nature, using science, diplomacy and public outreach to counter a range of threats, from pollution to climate change.

UNEP is the leading global voice on the environment. It provides leadership and encourages partnership in caring for the environment by inspiring, informing and enabling nations and peoples to improve their quality of life without compromising that of future generations.

# Organic waste treatment in Meru

By: Daisy Maina & Gideon Galimogle – Meru

**M**eru County is a vast growing County with a population of 1,545,714 people according to 2019 census. It is also one of the leading Counties with farming hence predisposing it to matters of organic waste. Meru like all other counties has challenges in solid waste management due to lack of adequate resources in technologies, human and financial capacities.

The Meru County Government and Meru University Science and Technology have come up with a biological method of Organic Waste Management using black soldier fly. The Black soldier fly (BSF) (*Hermetia illucens*) larvae have been used in low and middle income Countries to convert organic waste into Bio Fertilizers and Animal Feeds. Kenya is not an exceptional to use this Sustainable Technology on Organic Waste Management and Treatment.

A Research study has been conducted on Emerging Technology by Meru University of Science and Technology in collaboration with Meru County Government. It concluded that use of Black Soldier Fly Larvae has a great potential in Organic Waste Management, be it the treatment of market waste, municipal waste or dewatered faecal discharge. It is used to compost waste or convert the waste into animal feeds and bio-fertilizers. They are disease free scavengers and thrive on many kinds of decomposing organic matter, including algae, compost heaps, manure and waste products of beehives. They have large and powerful chewing mouthparts allowing them to shred and devour waste. The Fly larvae are among the most efficient animals at converting biomass into animal feed and bio-fertilizers.

Meru County thereafter presented a proposal to the Bloomberg Champion Cities, Mayors challenge USA. Meru was declared among the 50 Bloomberg Champion Cities across the world. The project is aimed at transforming the town into a Climate Smart Urban Center by 2040 by using the BSF to recycle solid waste. The black soldier fly will be used in Bio-Waste Units to turn organic waste generated County wide daily into organic fertilizer and protein for manufacturing fish and poultry feed.

Currently Meru is carrying out prototyping and testing of the proposed intervention that proposes the

use of the Black Soldier fly (BSF) larvae to produce organic compost (Bio-fertilizer) and the Black Solider Fly Larvae to be processed into animal feed to support its aquaculture and poultry projects. A BSF Bio-waste Unit is proposed at the Meru Gakoromone Sewage Plant for prototyping and testing the suitability of the project. The project has been designed not only to ensure a clean environment but also create jobs. Its proximity to the Meru Gakoromone Fresh Produce Market will deal with the market waste close to the source. A second prototype is being done on Behaviour Change Communication targeting to communicate the concept of Separation of Waste at the Source.

In finality, the treatment of Organic via BSF can contribute greatly to reducing many environmental problems such as GHG emission and the generation of harmful substances associated with existing disposal methods including landfills and incineration.

**Meru County presented a proposal to the Bloomberg Champion Cities, Mayors challenge USA. Meru was declared among the 50 Bloomberg Champion Cities across the world. The project is aimed at transforming the town into a Climate Smart Urban Center by 2040 by using the BSF to recycle solid waste.**



**Black Solider Fly (*Hermetia illucens*)**

# Saving Ondiri Wetland

By: Samwel Irungu & Carol Muriuki



**Guests in a procession in Kikuyu town to mark World Wetlands Day celebrations at Ondiri Wetland**

**K**enya joined the rest of the world in celebrating World Wetlands Day at Ondiri Swamp in Kikuyu town Kiambu County on 2nd February 2022 today.

The theme for this year's event was, "Wetlands Action for People and Nature." This was a clarion call for the world to put resources into the management of wetlands.

The theme also shone a spotlight on wetlands as an integral part to the wellbeing of humans and the environment. It was meant to highlight the contribution of human actions in saving wetland ecosystems globally as well as the importance of wetland goods and services to humans and nature.

The choice of Ondiri Swamp was informed by the importance of the wetland to the economy of the country. For instance, the Ondiri Swamp forms the headwaters for the Nairobi River which forms the Athi drainage system.

Despite its importance, the wetland is under pressure due to increased human activities such as water extraction, deforestation and accelerated erosion.

The Chief Guest during the event was Chief Administrative Secretary, Ministry of Environment

and Forestry Mohammed Elmi, EGH who represented the CS Keriako Tobiko, EGH. Governor Kiambu County, H.E Dr. James Nyoro also graced the event.

CAS Mohammed Elmi, EGH urged politicians vying for various positions to have environment management plans for their areas to ensure environment just like other sectors is given priority. He noted that the Government is working on environmental management frameworks to facilitate conservation of wetlands in the country.

The Governor Kiambu County, H.E Dr. James Nyoro urged the locals to balance between environment and economic developments. He reiterated the importance of hosting the event in his County.

He noted that the County has been working with the Friends of Ondiri to bring on board the communities to embrace the conservation efforts of the wetland. He added that the County has set aside resources to improve the status of the wetland to be a tourist attraction.

NEMA Chairman John Konchellah, EBS stated that the Authority has undertaken inventory, monitoring and assessment of wetlands to establish their occurrence and their health status.



**CAS Environment and Forestry, Mohammed Elmi, EGH launching the Eco-toilet at Ondiri Swamp on behalf of CS Environment and Forestry Keriako Tobiko, EGH**

During the event, the chief guest, CAS Environment and Forestry, Mohammed Elmi launched on behalf CS Keriako Tobiko an Eco-toilet.

The facility built on the outskirts of the Wetland in Kiuyu town will be used by the visitors of the Swamp. It will be managed by the Friends of Ondiri. It has been built by NEMA as one of the efforts to facilitate rehabilitation of wetlands in the country.

## ONDIRI SWAMP FACT SHEET

- Ondiri Swamp (water tower) is a unique Palustrine wetland located in close proximity to Kikuyu town, Kiambu County.
- It covers 34.5 ha with a perimeter of 3.5 km and a depth range of 2 to 3 meters.
- It forms the headwaters of Nairobi River where it is fed by Nyongara River.
- It recharges the Kikuyu springs through a subterranean passage.
- The swamp is a source to 40 other springs, which provides water to the local community.
- The swamp supports biodiversity ranging from aquatic and semi aquatic Plants, birds, mammals, amphibians, reptiles and insects.
- Sixty-eight (68) plant species (aquatic and semi-aquatic) have been recorded in the swamp.
- Over 74 resident and migratory bird species utilize the swamp as their habitat including the Endangered Grey crowned crane.
- It has a potential for being classified as an Important Bird Area (IBA).
- Ondiri swamp provides critical ecosystem services from provision, regulatory and supporting culture





**NEMA's Dr. John Mumbo takes guests led by Environment and Forestry CAS, Mohammed Elmi , EGH (C), Chairman, John Konchellah, EBS (R ) and DG Mamo B. Mamo, EBS (L) through air quality process undertaken by NEMA.**

This includes development of site specific management plans to a number of wetlands in the country. The management plans have informed decisions for conservation and management of the wetlands. The Authority has also been enforcing Water Quality Regulations of 2006 to stop effluent discharges into wetlands.

NEMA Director General, Mamo B. Mamo noted that as part of NEMA's wetlands conservation actions for people and nature we have the following among other activities; developed Integrated Management Plans for various wetlands country- Ondiri swamp management plan is almost finalized, developed and implemented Integrated Coastal Zone Management (ICZM 2019-2023) Action Plan, delineated a conservation area through ground truthing and stakeholder consultation meeting, created awareness on need for conservation and management of the land within wetlands, riparian areas and their catchments , Restored and rehabilitated degraded wetlands, continuous monitoring of wetlands to ensure wise use and curb any practices on wetlands that may result

in the degradation and over exploitation of these ecosystems. The Authority has also been involved in the Nairobi river regeneration program.

The Authority also launched an Eco-toilet at the Wetland on a land donated by a local. The facility will be used by the tourists visiting the wetland under the management of the Friends of Ondiri. The guests also planted trees especially Bamboos at the wetland to enhance the conservation efforts.

During the 13th Ramsar Convention Conference of Parties meeting held in Dubai in 2018, the Contracting Parties were encouraged to address urgently the significant human-induced pressures that threaten small but vital wetlands such as Ondiri, to prevent further loss. The Parties were further encouraged to include small wetlands in their inventories, national wetland strategies, and to integrate their information into national, regional and County land-use plans, as appropriate. These measures are meant to address the loss of small but significant wetlands across the world.

**World Wetlands Day** is celebrated every 2nd February to raise awareness about the importance of wetlands for people and planet. The day also marks the date of adoption of the Convention on wetlands in 1971 in Ramsar.



**NEMA Director General, Mamo B. Mamo, EBS watering a tree at Ondiri Swamp during World Wetlands Day**



**Jayden Mbaabu receives an ward from the chief guest, CAS Mohammed Elmi and Kiambu Governor, Dr. James Nyoro after participating in the wetland online competition.**

# Climate Change Adaptation in Kitui

By: Osoro Naftaly & Oras Murithi

Climate variability is having profound effects on water resources and this is making communities in Kitui vulnerable. Developing measures to reduce this vulnerability due to the frequency of droughts will solve problems related to water, enhance agricultural production and mitigate against the effects of climate change.

Climate change has resulted to increased instances of droughts and floods and the frequency of this will increase in the future. Developing measures that reduce this vulnerability is critical. The harvesting and storing of water in sand dams during the rainy season is critical in Arid and Semi-Arid seasonal rivers.

A sand dam is a reinforced concrete wall built across a seasonal sandy river, it is a low maintenance technology that retains rain water and recharge underground water. The sand dam holds water beneath the sand to last the community a whole year without outages. To promote access to water and sustainable land management, Africa Sand Dam Foundation (ASDF), an NGO working in Kitui has been working with Community Based Organisations (CBOs) to construct sand dams along the seasonal river beds. The sand dams have been constructed in Kitui West, Mwingi Central, North, South Sub Counties.

The Authority in the spirit of ease of doing business has been issuing the CBOs Environmental Impact Assessment Summary Project Report Approvals within 5 days. This is in line with the Legal Notice number 31 and 32 of 2019 on the Environmental (Impact Assessment and Audit) Regulations, 2003 that amended Regulation 7. The office has further handled instances of incidences and complaints reported in the course of the sand dam construction.

The aspect of sand dam construction has enabled the community access water through shallow and infiltration well-constructed along the river beds. The ASDF has supplied water to parts far away from the river beds, solar technology is being used to pump the water, water kiosks have been constructed, the CBOs sell the water hence sustaining livelihoods independently.

The nutritional aspect has been enhanced through

small scale agricultural production by communities that have supply of the water. The use of sand dam is a technology that requires to be rolled out in all the Arid and Semi-Arid Counties as this will enhance sustainable and diversification of water services, the practice will reduce abstraction of underground water and enhance utilisation of surface water instead of it getting into waste, the water retention is very beneficial to the communities and the country.



**NEMA CDE Kitui Oras Mureithi speaking to locals during the meeting**

# Lake Ol' Bolossat Management Plan Launched

By: Caroline Muriuki & Samwel Irungu

sustainable utilization of the lake for the current and future generations.

The Governor expressed optimism in the manner in which the ministry and its departments have worked hard in environmental management and in particular the Lake in the County. The Governor added that the County has 22% tree cover and has planted 2 million trees annually. Governor Kimemia noted that the CS should gazette a committee to spearhead implementation of the integrated Management Plan. He added that the Lake forms the arc of livelihoods for the locals. Hence the need to safeguard and protect it for the benefit of the locals.

The CS echoed sentiments geared towards recognizing Lake Olbollosat as a Ramsar Site of ecological importance which he said is an instrument to ensure the protection of the resource for perpetuity. The CS stated that the Lake will have an electric fence to wade off Hippopotamus from destroying crops and requires urgent surveying of the boundary to minimise encroachment. He further noted that his ministry will form a taskforce to oversee successful implementation of the management plan.

Development of the Lake Ol Bolossat Integrated Management plan was anchored under EMCA provisions. The plan development underwent all stages as guided by the Ramsar Convention including stakeholder consultation, expert field assessments and observations, focus group discussions, expert working groups and stakeholder validation.



**NEMA Board, Staff pose for a photo with CS Environment and Forestry, Keriako Tobiko and Governor Nyandarua, H.E Francis Kimemia during the launch**



**From L\_NEMA Ag. Chair, Dr. Lul Abdiwahid, CS Environment and Forestry, Keriako Tobiko and Governor Nyandarua, H.E Francis Kimemia display some copies of the plan during the launch.**

Lake Ol' Bolossat is the only lake in central Kenya, located in Nyandarua County. It is the 61st IBA and was gazetted as a protected wetlands in 2018 under EMCA. The Lake Olbolosat Management Plan was developed through a consultative process involving all stakeholders both national and county level. The document was launched on the 17th March 2022 in a colourful ceremony officiated by the Environment and Forestry Cabinet Secretary Keriako Tobiko and his host Governor Nyandarua County H.E Francis Kimemia.

Kenya being a signatory to the Ramsar Convention is expected to conserve and manage its wetlands resources through a multi stakeholder approach. The process of developing Management plans is comprehensive in terms of scope and public participation. The management plan is designed to ensure management of the ecosystem for the long-term well-being and the benefit of people.

The process of developing L. Ol Bolossat management plan was led by NEMA- CMF in collaboration with Nyandarua County Government. NEMA Ag. Chair Dr. Lul Abdiwahid accompanied CS to the Launch of Lake Olbolosat Management Plan in Nyandarua County. The Acting Chair NEMA Board noted that the plan will facilitate rehabilitation of degraded areas; enhance ecological integrity, conservation, and

# NEMA Gifts Komb Children Acrobatic Troupe

By: Joseph Odinga

A man's gift make room for him and brings him before the great, wise words from the book of proverbs that proved true when the Komb Children Acrobatic Troupe were hosted by the NEMA Director General, Mamo B. Mamo and NEMA Director Dr. Catherine Mbaisi on the 11th of February, 2022.

Accompanied by their trainer and mentor, the group of kids from different primary schools were brought together not just by their extraordinary talent and love for dance acrobatics but by a sense of responsibility when it comes to environmental conservation and a vision of a clean and crime free Korogocho.

The NEMA board room that has previously hosted Government officials and international delegations was for the day transformed into a performance theater as the young troupe gave a surprise acrobatic showcase that was thoroughly enjoyed by the NEMA officials present. It turned out to be a great day at the office as the infectious joy from the children oozed through and captured everyone in the room.

If the name sounds familiar, it's probably because Komb green were part of the rehabilitation and transformation of the historical Michuki memorial park which was officially opened by the President of the Republic of Kenya, Uhuru Kenyatta. Since then, they have remained purposely driven by an objective

to restore the riparian zone along river Nairobi in Korogocho while at the same time inspiring the youth in Korogocho to leave behind a life of crime.

Established in 2017 in one of the seven villages found in the great expanse of Korogocho, Komb green is a community-based organization formed by reformed youths with an agenda to rehabilitate Nairobi River and to clean the Riparian land around it through urban farming and landscaping.

To further motivate and inspire the young minds that will undoubtedly go on to shape Kenya's future, Dr. Catherine Mbaisi on behalf of NEMA Kenya awarded the troupe several gifts that will enable and facilitate their acrobatic training and nature their talent to ensure that they can generate income through their God given ability and continue to create awareness and inspire residents in their neighborhoods to take up the mantle and be the environmental heroes of Korogocho.

Going forward, these children will undoubtedly be the change makers that Kenya will depend on and look up to in order to realize an environmentally sustainable future. As the saying goes "I am who I am because of who we all are", if we all take the step to make a change, the children of today will be shaped by our actions, following in our footsteps for a greener earth.



NEMA DG Mamo B. Mamo, EBS, Staff and Komb green children at NEMA headquarters receiving their awards

## Scaling up climate change interventions in Lakeside city

By Sarah Muthoni

The National Environment Management Authority, the Accredited Entity by Green Climate Fund (GCF) hosted a delegation from the Kisumu County Government on 9th February 2019. The mission was to explore opportunities for tapping into the Green Climate Funds to scale up climate interventions in the Lakeside City.

The delegation comprised the Kisumu County Government Director for Environment Mr. John K'Oyoo and Director of Climate Change Mr. Evans Gichana was accompanied by Dr Blessing Mberu from the African Population and Health Research Centre (APHRC) and Mike Davis, the Director Complex Urban Systems for Sustainability and Health (CUSSH) project. The three partners have been implementing a project dubbed CUSSH, a project supported by the University College of London and Wellcome Trust being piloted in selected cities in Kenya, France and China.

The project in Kisumu addresses urban issues affecting people's health by reducing pollution, creating more usable green spaces, and supporting sustainable active transport through evidenced based planning and research. The main objective of the project is to turn waste into biogas.

The meeting with NEMA as the accredited entity explored opportunities of scaling up ongoing waste to energy interventions in Kisumu city. "Solid waste management is a challenge in our city which produces 4000 tons of waste daily. Harnessing waste to produce biogas will address climate change and save lake Victoria, our source of fish and fresh water from pollution", Said Mr. Gichana, the Director of Climate Change.

The team resolved to utilize the capacities, experiences and strengths of the partners to address environmental, waste management and climate change challenges in Kisumu city. The team further reviewed a draft concept note to address pollution and waste management in the Lakeside city.



NEMA, County officials in a meeting at NEMA HQ

## Lamu County observes World Wetlands Day

By: James Kamula, CDE Lamu County

Over three hundred Kenyans including representatives of government institutions; NGOs; private sector; community based organizations; and the general public turned out to undertake environmental cleaning and planting of mangroves in Lamu County during this year's World Wetlands Day (WWD) marked on 2nd February 2022.

WWD is marked globally on 2nd February every year since 1997 when it was established by United Nations. It is used to create awareness about the importance of wetlands, promote their conservation and wise use. The WWD 2022 event in Lamu County was held at Mokowe Jetty, Lamu County. NEMA Lamu office coordinated the event in partnership with County Government of Lamu.

In total 3,300 mangroves were planted at Old Mokowe Jetty and environmental clean-up done in entire Mokowe Jetty during the event.

Wetlands in Lamu County include swamps, marshes, floodplains, rivers, lakes and creeks lined with mangrove among others. These resources are however facing threats from various anthropogenic activities including over-exploitation of wetland resources; encroachment by agricultural activities; pollution and sedimentation; and infrastructure development. Stakeholder efforts including rehabilitation of degraded wetlands, public awareness and law enforcement among others have continued to make a great contribution to addressing these threats to wetland resources in Lamu County.

# Hazards of borrow pits to environment

By: Susan & NEMA Kirinyaga Team

**A** borrow pit is a term used in establishment of a hole, pit or excavation that has been dug for the purpose of removing gravel, clay and sand used in a construction project such as when building an overpass or embankment. Almost all construction projects involve earthwork designed to ensure that ground conditions are sound for stable construction.

While this process involves grading and excavation, frequently it's necessary to bring materials from another site that have to provide fill material with the right ground conditions, these materials are mined from borrow pits. Materials are often excavated from close to the road in order to save on haulage costs hence many of the environmental impacts relate to areas close to the road. In these case issues relating to drainage and erosion need to be taken into account at the design stage if they are likely to impact on the road itself.

Often road development follows existing tracks or roads which are located close to the populations being served and in rural areas close to agricultural activities. This means that local populations and agricultural land are inevitably disturbed. Poor engineering practice in the development and restoration of borrow areas can therefore have a direct and detrimental effect on the well-being of rural communities. However good engineering practice during planning, design and construction can overcome many of these concerns.

A borrow pit may be enclosed or open. Closed borrow pits are holes dug into the ground, and the coarse material produced often is used for gravel. These borrow pits frequently fill with water. Open borrow pits are shallow excavations and are generally used to mine sand and clay. These are more susceptible to erosion.

Many countries and counties have regulations regarding borrow pits, and owners require permits to operate. Usually, there are strict requirements to be followed, including the rehabilitation of the site. Despite this the country is experiencing a challenge in ensuring that these borrow pits are rehabilitated, but Kirinyaga county is the lead county in following up on these borrow pits and ensuring they are rehabilitated. Borrow pits provide the source materials for the construction of road embankments depending on the local area gravel/aggregates, silica sands, and laterite sands. Borrow pits are very important activity in the

building industry. They produce materials that are needed for construction of building and roads. The borrow pits also provide employment opportunities for large populations that are unemployed.

Borrow pits establishment lead to increased business opportunities this is because the large number of project staff required will provide ready market for various goods and services, leading to several business opportunities for small-scale traders such as food vendors around the site. The establishment of a borrow pit is also beneficial to a landowner who gets the opportunity to put his idle land into profitable use by renting it for excavation. Once no longer used borrow pits can become an important and valuable source of water supply in different parts of the country.

The primary source of noise from the extraction of maram from the borrow pits is from earthmoving equipment and processing equipment. The impacts of noise are highly dependent on the sound source, the topography, land use and ground cover of the surrounding site.

The mitigation measure for this is to maintain construction equipment i.e. a silencer to be installed on machinery as it is a necessary shield in the site. Construction should be carried out only during day time.

Dust is one of the most visible, invasive and potentially irritating impacts associated with borrow pits and its visibility often raises concerns that are not directly proportional to its impacts on human health and the environment. Some of the machines that are used in the borrow pits are very old and they emit a lot of dusts which affects the workers themselves and the people near the area.

The vegetation in the borrow pit areas is affected because of the dust accumulation that hinders their growth. The dust accumulates on the leaves of the plants therefore blocking the stomata which are very important for the growth of the plant as is used in the process of gaseous exchange. Another effect on the flora is the removal of the vegetation during the excavation process. This always leads to loss of habitat including food resources for the bird population found in the area.

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