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A Quarterly Publication

# nema news

The National Environment Management Authority

October-December 2017



## KENYANS EMBRACE PLASTIC BAGS BAN



Ministry of Environment  
and National Resources

## EFFECTING THE GAZETTE NOTICE ON THE BAN ON PLASTIC BAGS



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National Environment  
Management Authority

### FREQUENTLY ASKED QUESTIONS (FAQs)

**Question 1: Which plastics have been banned?**

**Answer:** The ban applies to all plastic carrier bags and flat bags used for commercial and household packaging.

**Question 2: What is a plastic carrier bag?**

**Answer:** This is any bag regardless of its thickness or colour, used at the supermarkets, retail stores, shopping malls and grocery stores as secondary packages.

**Question 3: What is a flat bag?**

**Answer:** A flat bag is a plastic bag constructed without handles and may have a gusset or not.

**Question 4: What are the major concerns of plastics bags?**

**Answer:** Plastic bags are usually manufactured for single use and generally tear or puncture after a first use. They are easily transported by the wind and are some of the most visible components of roadside and shoreline litter. Plastic bags are produced from oil and natural gas, and never fully biodegrade, remaining in the environment as small or even microscopic particles, essentially forever.

**Question 5: Are plastics used for primary industrial packaging also banned by the Gazette Notice?**

**Answer:** No, plastic bags used for industrial packaging are exempted so long as they are used for industrial primary packaging at the source of the product and are not available on sale at the counter or given freely outside the industrial setting. Furthermore, the bags must be labelled clearly by the industry manufacturing the product.

**Question 6: When are manufacturers and importers required to stop providing plastic single-use carrier bags to customers?**

**Answer:** By August 28th, 2017. Furthermore all manufacturers and importers shall declare all their remaining stocks by the due date to the National Environment Management Authority for necessary action.

**Question 7: Will exporters of plastic single-use carrier bags continue to manufacture the bags?**

**Answer:** NO. The manufacturing of all plastic carrier bags shall cease by 28th August 2017.

**Question 8: Will there be a “grace period” for retailers to comply?**

**Answer:** The Gazette Notice was published on 28th February, 2017, allowing six (6) months grace period for necessary adjustments and compliance.

**Question 9: Are retailers allowed to use up existing stocks of plastic bags after August 28th 2017?**

**Answer:** No, retailers are required to clear stocks within the grace period. Furthermore, all retailers shall declare all the remaining stocks by the due date to the National Environment Management Authority for necessary action.

**Question 10: Can retailers provide paper bags as an alternative to plastic carrier bags?**

**Answer:** Yes.

**Question 11: What are the alternatives to plastic carrier bags?**

**Answer:**

1. All bags made of non-plastic materials e.g. jute/sisal bags, cloth bags, papyrus bags, canvas bags and buyers/shoppers own shopping bags.
2. Woven Polypropylene plastic bags (gunny bags)
3. Non-woven polypropylene plastic bags (cloth like bags)
4. Laminated polypropylene bags
5. Polyolefin fibre bags

**Question 12: Which retailers are affected?**

**Answer:** All Retailers

**Question 13: Are small retail businesses exempt?**

**Answer:** No.

**Question 14: Are bin liners exempted?**

**Answer:** Yes. Bin liners have been exempted for the following categories of waste;

1. Biomedical waste,
2. Hazardous waste
3. Garbage

On condition that they are legibly and permanently labelled the name of the industry manufacturing the product and the end-user (here being NEMA licensed waste handler/Transporter.

**Question 15: Is there an exemption for clothing stores?**

**Answer:** No. Exemptions apply to only primary industrial packaging which is in accordance with approved standards as indicated in 5 and 14 above.

**Question 16: Are duty free bags exempted?**

**Answer:** Yes. Duty free bags are not affected by the ban though they use is restricted within the Duty free shop and they should not be available for sale or use within the Kenyan market. Furthermore any traveller coming into Kenya with duty free bags shall be required to dispose the same at the entry points or in the aircrafts prior to disembarking their flights.



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National Environment Management Authority - Kenya



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Our Environment, Our Life, Our Responsibility



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# Editorial

## **Compliance levels with the plastic bags ban on high**

The plastic bags ban took effect on 28th August 2017. As a sign of goodwill, the National Environment Management Authority (NEMA), embarked on an awareness campaign for a period of one month before the Authority swung into enforcement action.

The Authority's effort and the goodwill from members of public who had grown tired of seeing plastic bags strewn all over has borne fruits. For the last six months since the implementation of the ban began, there is evidential reduction in the use of plastic bags. Approximately 500 people throughout the 47 counties have been caught using, manufacturing or importing the banned plastic bags. These individuals have been prosecuted in various courts where some were fined or imprisoned according to the penalties prescribed by Environmental Management and Coordination Act (Amended Act, 2015)

As a result of these concerted efforts, this quarter, the compliance levels with the banned plastic bags have rose to unprecedented levels as the Authority has more often than not stepped out of its way to create awareness on the negative effects of plastic bags to the environment.

During the quarter, the debate on the ban of Polyethylene Terephthalate (PET) bottles also took centre stage. The Authority sought partnership and collaboration with the relevant stakeholders on how to address the issue. Stakeholders were brought on the table where they were requested to come up with initiatives to manage the plastic bottles waste.

NEMA also took centre stage during the third United Nations Environment Assembly (UNEA) in December 2017. The theme for the Conference was 'Towards a plastic free planet'. Among the parallel sessions was 'Saving Oceans from Plastic Pollution' which focused on alternatives to plastics. NEMA Director General Prof. Geoffrey Wahungu was among the panelists where he highlighted the success of the plastic bags ban in the country.

NEMA was also privileged, as the National Implementing Entity (NIE) for the Adaptation Fund to host guests from Zimbabwe and Malawi in November 2017. These guests were in Kenya through a South-to-South collaboration framework that is part of the Adaptation Fund's Readiness Programme for Climate Finance. NEMA also came out in a big way during the United Nations International Day for persons with disabilities to exhibit and share with stakeholders on what the Authority is doing as regard to persons with disabilities.

Have a nice read!

Evans Nyabuto,  
**Chief Corporate Communications Manager**



# NEMA in support of Persons with Disabilities

By Erick Ngongi

The United Nations International Day for Persons with Disability is a day set aside “to promote the rights and well-being of persons with disabilities in all spheres of society and development”, according to the United Nations, the custodian of the day. The day has been marked on December 3<sup>rd</sup> since 1992.

This year’s theme was “Transformation towards sustainable and resilient society for all”. In Kenya, the day was celebrated nationally on 7<sup>th</sup> December at KANU Grounds in Nanyuki town-Laikipia County.



NEMA Erick Ngongi and Sarah Muthoni receives visitors at the NEMA booth during the event  
[PHOTO: COURTESY]

The commemoration was officiated by the Principal Secretary, Ministry of Labor Social Securities and East Africa Community, Madam Mwatete. Other delegates

included Senator Mwaura, Nominated MP Sankok, and Mr. Gabow CEO National Council for Persons with Disabilities among others.



NEMA's Erick Ngongi with H.E. Isaack Mwaura during the event in Nanyuki town  
[PHOTO: COURTESY]

NEMA came out in a big way to exhibit and share with stakeholders on what NEMA is doing as regards to persons with disabilities and created awareness on the correlation between environment and disability. The community was thrilled by NEMA stand and praised the Authority on the plastic ban implementation.

{The writer is NEMA's Environmental Officer }

# Malawi, Zimbabwe NIEs visits Kenya

By Sarah Muthoni & Nancy Chacha



NEMA Staff with South-South NIEs from Malawi and Zimbabwe in a group photo during the training  
[PHOTO: N. CHACHA/NEMA]

**NEMA was privileged, as the National Implementing Entity (NIE) to host guests from Zimbabwe and Malawi from 27<sup>th</sup> to 29<sup>th</sup> November 2017. These guests were in Kenya through a South to South collaboration framework which is part of Adaptation Fund's Readiness Programme for Climate Finance.**

To actualise this programme, the Adaptation Fund Board has made South-South Cooperation grants available in order to increase peer-to-peer support among accredited NIEs like NEMA, and those seeking accreditation. These grants are aimed at strengthening the capacity of countries seeking accreditation with the Fund to undertake activities, and to prepare and submit relevant documents that lead to accreditation with the Fund.

To access these grants, Countries seeking accreditation with the Adaptation Fund are required to submit a proposal for peer support to prepare and submit an application for accreditation to the Fund through an eligible accredited NIE. The country seeking accreditation can contact an accredited NIE of their choice to initiate dialogue and work with the NIE to see through the submission of the proposal to receive peer support. This grant was created in the recognition that navigating the accreditation process is a challenging complex process.

It is under this framework that the Government of Malawi, and Zimbabwe requested to be supported by Kenya through NEMA. NEMA has since received grants to support the Malawi Environment Trust Fund (MEET) in Malawi and the Environmental Management Agency (EMA) in Zimbabwe. MEET and EMA are the organizations nominated for Accreditation by the government of Malawi and Zimbabwe respectively.

The delegates came from these two organisations. The main aim of the visit is to identify relevant accreditation application materials and technical mentoring exercise.



NEMA DG Prof. Geoffrey Wahungu (R) receives a gift from Andreas Mlalazi, Board member of Zimbabwe EMA  
[PHOTO: S. IRUNGU/NEMA]

Specifically, NEMA's role was to assist MEET and EMA review their existing systems, procedures and documents with a view to seeking AF NIE Accreditation; support identification of documents for accreditation submission and to develop an action plan for gaps that need to be addressed.

The guests engaged with various departments to understand and have hand on experience on how NEMA is structured, in line with the accreditation process over the 3-day visit.

*[The writer's are NEMA's Environment officer and an Intern at NIE Section]*



NEMA Board Chairman, Mr. John Konchellah (R) receives a gift from Andreas Mlalazi, Board member of Zimbabwe EMA  
[PHOTO: S. IRUNGU/NEMA]

# Invest in leadership, DG urges trainees

By Samwel Irungu

The NEMA cohort of the 2016-2017 Strategic Leadership and Development Programme (SLDP) at Kenya School of Government could not hide their delight as they won a trophy after presenting a position paper on the plastic bags ban in Kenya.

During the closing ceremony presided over by the NEMA Director General Prof. Geoffrey Wahungu, the NEMA group were presented with a trophy and certificates after the six weeks training.

During the event, Prof. Wahungu shared his experiences in leadership since his heydays in high school hitherto where he is now as the NEMA Director General. He stressed on the importance of settling disputes in relation to human resources and general relationship

with people. He added that making precise and decisive undertaking requires involvement of all stakeholders.

The DG gave a case when EIA fees were abolished and the Authority had strategize and budget to ensure continued operation of the Authority and implementation of her

*During the closing ceremony presided over by the NEMA Director General Prof. Geoffrey Wahungu, the NEMA group were presented with a trophy and certificates after the six weeks training.*



NEMA Director General, Prof Geoffrey Wahungu presenting a trophy to Wangare Kirumba, Jasper Omwenga, Shieni Koiyet and Anne Theuri during the SLDP closing ceremony at KSG-Nairobi [PHOTO: S. IRUNGU/NEMA]

mandate. He added that management requires a lot of dynamism, flexibility and creation of synergy in leadership.

“The implementation of the plastic bags ban required a lot of finances, the Authority had to accumulate strategies on the plastic bags ban,” the DG said. He added that documentation is key in operations of organizations especially in the government departments.

Prof. Wahungu pegged the success of the case at High court challenging the implementation of the Gazette notice on plastic bags ban was possible due to update and regular documentation since the journey to ban plastic bags began.

Moreover, over the years, the Authority has invested in training Environment and Land court judges on environmental matters. This, according to Prof



NEMA's Mrs Ann Theuri receives a certificate from the NEMA Director General Prof. Geoffrey Wahungu during the graduation [PHOTO: S. IRUNGU/NEMA]

Wahungu has also contributed to making environment gain traction in the corridors of justice.

He urged the trainees to always be optimistic and invest more on consulting other people before making key decision within their purview.



NEMA Director general Prof. Geoffrey Wahungu making his remarks during the graduation at KSG [PHOTO: S. IRUNGU/NEMA]

*Prof. Wahungu pegged the success of the case at High court challenging the implementation of the Gazette notice on plastic bags ban was possible due to update and regular documentation since the journey to ban plastic bags began.*

# Kenya hosts the third UNEA meeting

By Samwel Irungu & Wangeci Mwangi

The National Environment Management Authority (NEMA) has over the years been spearheading partnerships with the United Nations Environment Programme (UNEP) pertaining issues to do with the conservation of the environment. As a result, NEMA was invited to attend the Third meeting of the United Nations Environment Assembly (UNEA-3) which was held in Gigiri, Nairobi, Kenya from 2<sup>nd</sup> - 6<sup>th</sup> December 2017.

This year's Assembly was sustainable and climate-neutral, and featured side events that confront pollution in its various forms. The Assembly aimed to deliver a number of tangible commitments to end the pollution.

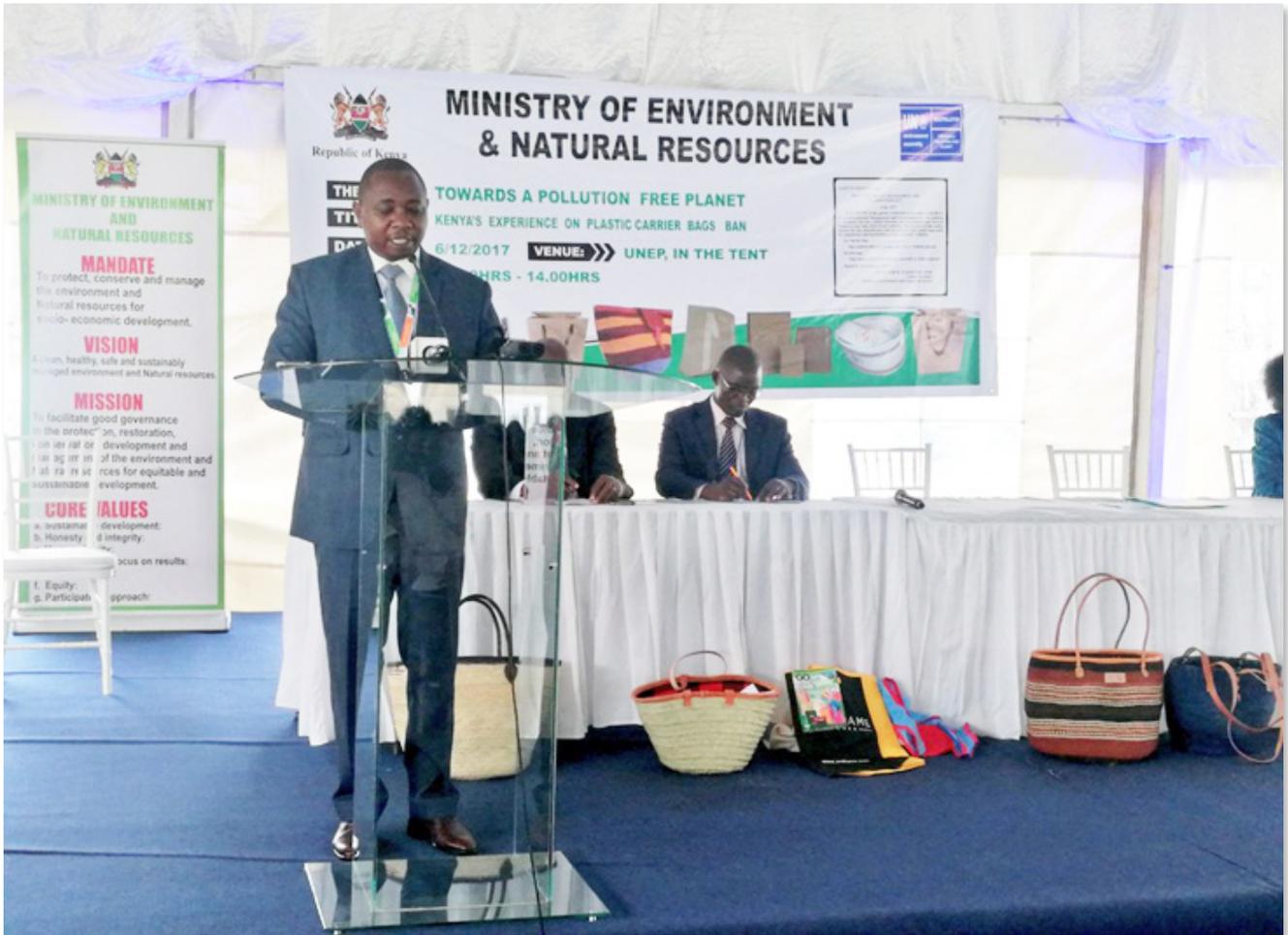
The central theme of the third session of the United Nations Environmental Assembly (UNEA-3) was **"Towards a Pollution-Free Planet"**. Since the assembly

represents the world's highest level of decision-making body on issues to do with the environment, the assembly was able to culminate in resolutions that called for action in order to address critical environmental challenges facing the world today.

In order to come up with tangible resolutions on the said theme, the UN Global Science-Policy-Business Forum on the Environment took



His Excellency, President Uhuru Kenyatta officiating the High level segment opening ceremony



NEMA Director General Prof. Geoffrey Wahungu making his opening remarks

*His Excellency President Uhuru Kenyatta, who officially opened the High Level Segment Opening Ceremony, commended delegates for coming together for such a noble cause. He noted that the world had gathered there because of expensive lessons learnt and unless environmental riches are protected by all.*

place in the lead-up to and during the third session of the UN Environment Assembly, under the banner “**Science for Green Solutions**”. The recommendations from the Forum informed the Assembly. The UN Global Science-Policy-Business Forum on the Environment aimed to identify and promote opportunities for green investment driven by advances in science and technology, empowering policies and innovative financing.

Driven by this goal, the forum strengthened the interface between science, policy, business and society by tearing down traditional sectoral barriers and building consensus around key issues.

The UN Science - Policy - Business Forum was officially opened by welcoming remarks from Ibrahim Thiaw, UN Assistant Secretary - General and Deputy Executive Director of UN Environment who stressed the importance of green solutions and how the three partners can be involved collaboratively to deliver solutions to pollution. He stated that successful businesses are not only about profits but also about vision and contributing to solutions in the long term. What is good for the planet is good for business, it is not ‘either or’ but ‘both and’.

UN Chief Scientist and event host, Jian Liu informed the participants

that each year, 12.6 million people in the world die of pollution. The environment does no longer need to be mainstreamed but rather prioritized in all decision making processes and put on the very top off all other issues.

Among the parallel sessions was 'Saving Oceans from Plastic Pollution' which focused on alternative materials to plastics. NEMA's Director General, Prof. Geoffrey Wahungu was one of the panelists and highlighted Kenya's ban of plastic bags in August 2017 and the progress so far. He remarked, "there had been positive response and goodwill from the public who fully supported the ban. There was also political support which aided in successful implementation."

*Concerning biodegradable bags, the Director General noted that the authority was working to clear the plastic bags first to avoid counterfeiting issues. The biodegradable jobs would probably later on be used once all plastic bags have been phased out. Moreover, he stated that the testing material for biodegradable bags was not available yet.*

Prof. Wahungu added that the ban opened up a platform and created a market for industries and small scale traders producing alternatives to plastic bags which have been widely accepted and used by consumers. However, one of the challenges the authority faced was resistance from the manufactures. Collaboration was underway with County governments to ensure the ban's effective implementation. Critical to note was that behavior change and creation of environments of nurturing to the youth generation.

He further pointed out that there were incentives for low economy people, youth groups, disabilities and women in rural places. The



Prof. Geoffrey Wahungu, NEMA'S Director General giving his view on Kenya's plastic bags ban



**From L-R:** Sahle-Work Zewde, Director General, UNON; Judi Wakhungu, Cabinet Secretary for Environment, Water and Natural Resources, Kenya; Miroslav Lajčák, President of the 72<sup>nd</sup> Session of the UN General Assembly; Erik Solheim, Executive Director, United

authority was also working with Kenya Bureau of Standards and are promoting use of bio-polymers as alternatives but was generally optimistic with the take-up of alternatives.

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His Excellency President Uhuru Kenyatta, who officially opened the High Level Segment Opening Ceremony, commended delegates for coming together for such a noble cause. He noted that the world had gathered there because of expensive lessons learnt and unless environmental riches are protected by all. “There can be

no lasting prosperity for anyone, we need to learn from lessons of pollution adopt appropriate mitigation actions.” He remarked.

Additionally, there were various side events running throughout the event such as **‘Awareness to Action - using art to turn the tide on plastic’** organized by the #CleanSeas Campaign, that focused on how art can be used to educate people and raise awareness about environmental causes including marine litter through harnessing cutting edge technologies such as virtual reality and novel communication channels.

NEMA spearheads rehabilitation and restoration with appropriate indigenous seedlings and construction of a site surveillance office. To these end, NEMA is working on budgetary modalities for the ministries approval and funding.

*{The writers are NEMA’s Corporate Communications Officer and an Intern}*



Art made from plastic, electronic and rubber waste

# NEMA enforcing ban on plastic bags

By Samwel Irungu



NEMA Director General, Prof. Geoffrey Wahungu (C) addressing the media at NEMA Headquarters. He was accompanied by the management team (L-R) Dr. Charles Lange, Deputy director research, Irene Kamunge, Director legal, Zephania Ouma-Deputy Director compliance, Ali Mwanzei-Deputy Director field operations and Betty Nzioka, head of M & E  
[PHOTO: S. IRUNGU/NEMA]

The ban on plastic bags in Kenya took effect on 28<sup>th</sup> August 2017. The Authority has been patient enough in that it has given the public one and a half month creating awareness about the plastic bags ban especially on alternatives and information on other innovations of packaging.

During the press conference held at NEMA Headquarters, the NEMA Director General Prof. Geoffrey Wahungu thanked the public for overwhelming support throughout the first six weeks that the Authority had been focusing on awareness creation and warning offenders. Ignorance is no defense, the DG stated.

“So far, we have created enough awareness and opportunities for innovations to create alternatives to plastic packaging. Hence, going forward, we will enforce fully and we request full cooperation of Kenyans”, Prof. Wahungu stated.

The Authority has confiscated 75 tonnes of plastic bags since August 28<sup>th</sup> which is going into recycling. “Due to this high compliance levels, as the country hosts UNES in December, Kenya will be showcasing the best practices examples to other countries.



NEMA Director General, Prof. Geoffrey Wahungu addressing the media during the event [PHOTO: S. IRUNGU/NEMA]

So far, NEMA has received 1941 applications for clearance on primary industrial packaging out of which 691 have been rejected for various reasons. Several arrests have also been made which began with stockiest, manufacturers and retailers and now the arrests has been cascaded to users.

“In enforcement of the ban, NEMA is committed to highest level of fairness. We are using the principle of proportionality for those being arrested. This is also being applied by the courts,” Prof. Wahungu informed. This means that manufacturers, retailers, distributors, small-scale retailers and users cannot be treated the same. Therefore, the fines meted on them is proportionate to the offence and economic status.

The Authority is still working with major supermarkets such as Nakumatt, Uchumi, Naivas, Tuskys in the country that acts as plastic bags drop off points. The Authority has also negotiated with partners such as RedCross and Kasuku centre to collect the banned plastic bags. “We want to urge citizens to identify areas close them and drop plastic bags in their possession”, Prof. Wahungu stated.

*The Authority is also working with sector-based businesses such as fisheries, traders, bakeries, flower industries among others as well as supplying relevant information to Kadogo economy such as mama Mboga. This has made it possible for people to come up with very innovative alternatives to plastics packaging.*

The Authority has also started a mop-up exercise and the results are evident throughout the country. Counties have played a critical role in facilitating mopping up of plastic bags in the environment. Prof. Wahungu also urged the public to participate actively in cleaning the environment by not using the banned plastic bags.

The Authority is also working with sector-based businesses such as fisheries, traders, bakeries, flower industries among others as well as supplying relevant information to Kadogo economy such as mama Mboga. This has made it possible for people to come up with very innovative alternatives to plastics packaging.

*[The writer is NEMA's Corporate Communication officer]*



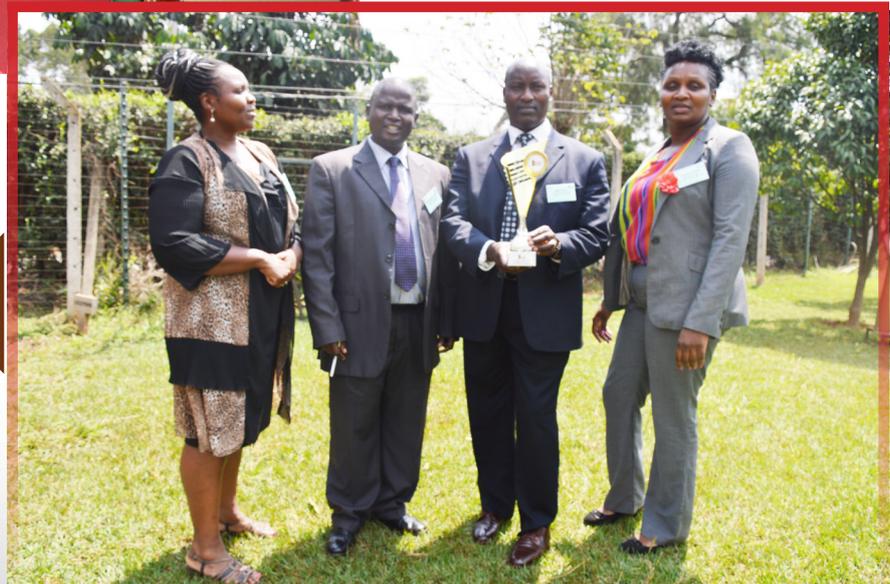
Board Chairman, Mr. John Konchellah charing the Performance Contract meeting at NEMA HQ



Deputy Director EEIPP, Mamo Boru (L) and Chief EEIPP, Dr. Catherine Mbaisi holds a suit made of recycled plastic bags by Brian Sariton (C)



Director General, Prof Geoffrey Wahungu meeting members of Mtaa Safi on alternatives to plastic bags



NEMA Staff during their graduation at Kenya School of Government (L-R) Anne Theuri, Jasper Omwenga, Shieni Koiyet and Wangare Kirumba during the SLDP closing ceremony

NEMA Director General meeting with bakers at NEMA headquarters



NEMA Director General, Prof. Geoffrey Wahungu (R), DDEI, Mamo Boru (L) with Brian Sariton



Jackson Ongubo-Stakeholders Relationship Manager Total Kenya (R) gives a trophy to NEMA's DDHRA, Esther Chege, SAO- Emmanuel Wekesa- TO, Castro Otieno- DFA, Kennedy Ochuka



NEMA and Safaricom meeting to discuss about the signing of a partnership MOU



# Authority seeks partnership on plastic bags ban

By Nancy Chacha

The National Environment Management Authority organized a meeting to seek partnership and collaboration on the plastic ban. The meeting was held at Radisson Blu hotel on 17<sup>th</sup> October 2017.

The meeting chaired by NEMA Director General Prof Geoffrey Wahungu brought together Embassies, partners and stakeholders. Among those present were high profile representatives of key Private companies, conservation organizations, United Nations, and High commissions of US, British, Norway among others.

In the implementation of the ban, NEMA being the entity in charge of implementing the ban has adopted four major strategies: Awareness promotion, Compliance & enforcement, Scientific Data Mobilization and Monitoring and Evaluation.

The Authority has also enhanced awareness creation on the plastic bags ban since the Gazettement of the notice in February 28<sup>th</sup> 2017 and subsequent lapse of the grace period marking the implementation of the ban. This has been done through; World Environmental events such as WED 2017, televisions and Radio, articles, Bulk SMS, stakeholder engagement, print media among others.

According to the Director General, stakeholders engagement is critical as it could suggest best environmental practices borrowed from their countries to be integrated in Kenya especially as the countries to enforce the plastic bags ban.

Prof. Wahungu also urged stakeholders to support any initiative geared towards environmental sustainability such as awareness creation, clean-ups, mop-ups, supporting brand ambassadors for environment among others.

It is estimated that implementing the plastic bags ban will require 100 million yearly across the country for it to be successful, Obadia Mungai, NEMA's Chief Environmental Economist said while making a presentation.

As a result of this heavy financial obligation, the Director general requested the stakeholders and partners present to support the implementation of the ban across the country by undertaking initiatives within their capacity.

*{The writer is an intern at the NIE Section}*



NEMA Director General, Prof Geoffrey Wahungu addressing the partners and stakeholders during the meeting at Radisson Blue

[PHOTO: N. CHACHA/NEMA]

# Gem mining, a threat to environment

By Sofie Mutemi

There have been recent publicity of gemstones, mainly in Tharaka Nithi County, Taita Taveta County and Baringo County, currently at Mbeere South Sub-County. According to research, mining sector has more prospects ahead of tourism, tea and coffee combined. However, dealers are trading the gemstones through an informal market.

It is estimated that about 100,000 people are directly engaged in artisanal mining in Kenya. An artisanal miner or small-scale miner or local miner is someone not officially employed by a mining company, but rather, works independently, mining for minerals using their own resources. These resources include simple digging tools and experience of identifying rocks that show highest probability of available gemstones as shown in picture 4 below.

In Kitharu village, Muminji location, Mbeere South Sub-County, the local miners look and excavate gemstones so as sell to one large-scale prospector of the gemstone who looks for market and pays them according to the grams they give. The wages given to the local miners is not constant hence dependent on the unregulated pricing from the large-scale prospector.

There are major environmental issues related to gem stone mining in the area: Local miners excavate gemstones but do not rehabilitate

the topography leading to encroachment of road reserves and land degradations, further posing risks to children, livestock and cars, as shown in figure 4 and 5. The gem stone belt are usually a long stretch of more than a kilometer passing through seasonal rivers resulting to expansions of river boundary from the excavations.

There is limited enforcement of regulations in the mining of the precious minerals which means that the State and communities do not benefit from the billions' of minerals extracted. In the Mbeere South Sub-County, artisanal and small-scale miners who prospect for the minerals, are at risks of eviction from the mines by powerful and well-connected large-scale prospectors, miners and traders who claim legal ownership of the land as soon as the locals discover mineral deposits. There has been a rising conflict of ownership between local miners who identify the location of the gem stone belt.

NEMA is mandated under Environmental Management and Coordination Act, 1999 to regulate the mining activities. Mining Act, 2016 identifies NEMA as stakeholders in regulation of the mining sector in Kenya. Mining needs to be carried out in an environmentally friendly way.

Embu County is expected to commit to more compliance with our local miners as the mining industry

expands and becomes more profitable. This compliance will mitigate against the negative environmental impacts faced from gemstone mining.

*{The writer is NEMA's CDE Embu County}*



The status of seasonal river near the gemstone belt



Local miner identifying gem stone belt



Gaping holes where mining has been taking place

# Open burning harms man and animals

By Agnes Kamiri & F.N Kihumba

**A**ccording to World Health Organization (WHO) 25%, of diseases are caused by environmental factors. In Kenya 40% of diseases, relate to upper respiratory diseases according to health statistics of 2016.

Therefore, approximately 10% of respiratory diseases are caused by environmental related factors mainly burning of plastic waste, textiles, paper metal pesticides among others. All these facts are laid bare by the recently adopted guidelines for emissions of Unintentionally Produced Organic Pollutants (UPOPs) developed by UNEP and regulated by the Stockholm Convention on persistent organic pollutants.

Burning “unclean” materials can be even more hazardous. When you burn refuse in barrels or open piles, the potential cost to your health, your home, your neighbours and your environment far exceeds the price of adequate collection services. Many countries invest in the science of open burning. They measure all the gaseous emissions. The smoke from a fire may not bother you, but it could be a real problem and a serious health threat for your neighbours.

## What is open burning?

Open burning is burning of unwanted materials such as paper, and other debris where smoke and emissions are released directly into the air. Most people think that burning is the cheapest and easiest, though current research indicates that open burning is a more serious threat to public.

During open burning, air pollutants do not pass through any pollution control system. The air pollution created by open burning can irritate eyes, lungs, obscure visibility, and pose other nuisance or health threats.

Nairobi generates an estimated waste of 3000tonnes every day. Half of this waste is moved to Dandora dumpsite and rest fizzles into the environment. Some of these waste ends in rivers, streets and littering

the environment. In this regard, some dumpsites and household waste handlers opt to burn the waste in their possession which increases rate of air pollution into the environment. This has aggravated the efforts by various government agencies and individuals to make environment clean.

When gaseous pollutants are deposited to soils and water, they eventually go into the food chain. The residue from open burning is carried by runoff to water systems ending up in the food chain.

Open burning is responsible for generation of toxic by-products of combustion including smoke and unpleasant odours, nuisances, particulate matter, carbon monoxide, polycyclic aromatic hydrocarbons, benzene compounds dioxins and furans.

After emissions, residues remain in the air, water and soil. When inhaled, fine particles can accumulate in the respiratory system causing various respiratory problems including persistent cough and wheezing. Chemicals contained in smoke, when mixed with rainwater, can accelerate deterioration of manmade materials such as concrete metal products and paints.

## Is open burning illegal?

Yes. Most countries in Western world have prohibited open burning of waste in municipalities and in landfills. Where it is unavoidable, there are guidelines for carrying it out.



OPEN BURNING [PHOTO/COURTESY]

*It is illegal to burn household or garden waste at home or in your garden. Burning waste can be a nuisance to neighbors and can also pollute the air by releasing harmful chemicals into it. There are many toxic chemicals in waste items. Paper waste may contain synthetic materials, preservatives and even plastics.*

Notably, Kenya is party to the Stockholm Convention which calls for parties to minimize open burning, it is therefore illegal in Kenya. In fact, the air quality regulations of 2014, prohibits open burning of waste.

It is illegal to burn household or garden waste at home or in your garden. Burning waste can be a nuisance to neighbors and can also pollute the air by releasing harmful chemicals into it. There are many toxic chemicals in waste items. Paper waste may contain synthetic materials, preservatives and even plastics.

Therefore, burning garbage harms your health, your family and your neighbours and that is why it is illegal. Protect yourself, your neighbors and your wallet by knowing what you can burn and where.

### Composition of emissions of open burning

Open burning of waste generates a lot of air pollutants resulting from the inadequate combustion of the various waste categories of waste types. These air pollutants includes dioxins and furans which are generated from incomplete combustion of waste containing carbon and chlorine.



### National Current Emissions of dioxins and Furans

Based on the National Implementation Plan (NIP) update, open burning of waste and landfills generates 247g Toxic Equivalent (TEO) which is about 7% of the national releases.

Though it is not the highest source, it should be noted that this form of release is widespread and thus has the potential to affect far more people. The lack of controls in open air burning and indeed its encouragement for purposes of reducing the volume of waste is a key concern.

### Current Situation

Simple measures are being promoted. The Ministry of Environment and Forestry together with the Global Environment Facility (GEF) is encouraging and promoting minimization of dioxins and furans also known as Unintentionally Produced Organic Pollutants (UPOPS) in the counties of Nairobi, Mombasa, Nakuru and Kisumu.

UPOPs have been associated with promoting cancer among other upper and lower respiratory diseases. The World Health Organization (WHO) has ten priority chemicals and UPOPS are one of them.

The GEF/UNDP/GOK project on streamlining chemicals management and reduction of unintentionally produced organic pollutants is leading efforts to ensure that Kenya protects itself and the global community by promoting the efforts of disposing waste through non burning techniques. NEMA is in the process of developing National guidelines on opening burning.

*{The writers are NEMA's Corporate Communications Officer and UPOS Technical Advisor respectively}*

# Partnership to manage plastic bottles

By Samwel Irungu



NEMA Chairman, Mr. John Konchellah making his remarks during the CocaCola courtesy call [PHOTO: S. IRUNGU/NEMA]

**A**s the national entity implementing matters related to environment, NEMA encourages structured partnerships in line with the government's public-private-partnership policy (PPP).

It is in regard that the NEMA board chairman, Mr. John Konchellah hosted a team from CocaCola to discuss areas of engagement related to waste management and plastic bags ban.

The CocaCola team were led by Hamish Banks, the Vice President, Public Affairs, communications & sustainability, Eurasia & Africa, Maserame Mouyeme, the public Affairs, communications & sustainability director for Seabu. Maserame Mouyeme- Public Affairs, Communications & sustainability director for Seabu among other officials from CocaCola Kenya offices.

Some of the areas of interest in the partnership included an industry led PET recycling initiative and the adopt a river initiative that is spearhead by NEMA.

Speaking during the courtesy call, the Chairman stated that the Authority has recently been on the lime light following the ban of plastic bags. "The ban has been successful since most Kenyans have complied." He added that despite poor environmental management practices in the country being challenging, NEMA is encouraging wise use of resources through embracing green technologies and collaborating with other stakeholders to build synergies.

The chairman also noted that the CS for Environment and Natural Resources Prof. Judi Wakhungu recent efforts to prohibit people from carrying plastic bottles to the parks and forests. He remarked that this will ensure that visitors do not litter the environment as people dump them around after finishing their drinks.

He also urged every citizen to safeguard and enhance the quality of environment as well as adopting best practices to help create wealth, employment and reduce pollution to the environment.

*{The writer is NEMA's Communication officer}*

# Cleaning Nandi off plastic bags

By Vincent Mahiva



The cleanup planning committee members lift up a banner sponsored by NEMA during the cleanup

The NEMA Nandi County office in conjunction with the Nandi county government held a colorful cleanup exercise at Kapsabet town. The event was flagged off at Kapsabet High School on 14<sup>th</sup> September by the deputy governor Nandi County H.E Dr. Yulita Cheruiyot.

Teams of garbage collectors penetrated all streets of Kapsabet town pulling out any plastic bags littering the city. The whole town business came to a standstill as Kapsabet Bass Band with all Kapsabet High school students led the cleanup convoy across the main street with banners carrying the message on plastic ban.

The Deputy Governor led a team that sensitized traders at Kapsabet Bus Park and main market. She demonstrated the ban by emptying peas that were packed in flat bags at the market place. Together with her were the County Commissioner representatives, speaker of the Nandi County assembly, CEC Lands, Environment and Natural Resources, MCAs among other dignitaries.

The Deputy Governor emphasized that all towns shall be maintained clean and all people must take responsibility over the waste they

generate. She added that no more use of the banned plastic carrier bags and flat bags in Nandi County. The speaker of the Nandi County assembly promised to have strong land and environment committee and pass laws that protect the environment as prompted by the executive.

The County Director Environment (NEMA) commended Nandi County residents for taking the ban positively. However, he warned of the stiff penalties related to offences for those using the banned plastic carrier bags and flat bags.

*{The writer is NEMA's CDE in Nandi County}*



NEMA Nandi CDE Mahiva addressing the public during the event  
[PHOTO: COURTESY]

# Kenya to host 10th Carbon Forum

By Judith Ochieno



NEMA with support from the Ministry of Environment and Natural Resources will serve as the organizer and host of the event and therefore. Committee meetings to prepare for the forum have commenced with the implementation plan already in place.

**K**enya is set to host the 10th African Carbon Forum scheduled for April 2018. This forum will be in Nairobi Kenya on 10<sup>th</sup> to 13<sup>th</sup> April 2018 and will also serve as the 1<sup>st</sup> Climate Action Week where climate change negotiations will take place with the highlight being the Ministerial High Level Segment on 12<sup>th</sup> April 2018.

This is an annual event held in the African Continent that draws members from government, private sector and non-state actors with the objective of acting as a carbon fare, capacity building forum and an exhibition event. The 1<sup>st</sup> Carbon Forum was held in Nairobi in 2009 and NEMA served as the host organizer since we serve as the Designated National Authority for the Clean Development Mechanism

The ACF is an annual event organized under the umbrella of the Nairobi Framework Partnership, designed to mobilize investment for the implementation of nationally determined contributions (NDCs) and emission reduction projects to spur sustainable development and make the continent more resilient to climate change.

The event also functions as a trade fair and knowledge sharing platform for carbon investments helping countries in Africa capitalize on the development benefits of the Clean Development Mechanism (CDM). The forums regularly attract upwards of 600 experts of climate change mitigation to convene in one place and discuss important trends in the field.

*{The writer is NEMA's Principal Corporate Communications Officer}*

## Safaricom launches a safety handbook on Base transceiver stations (BTS)

Safaricom in conjunction with NEMA, CAK and other partners launched the safety handbook on BTS at Sankara hotel Nairobi. The international Commission on Non-ionizing radiation protection (ICNIRP) has set guidelines for human exposure to Electro-Magnetic frequency. The guidelines include a substantial safety margin to ensure that no adverse health effects are experienced when EMF levels are within the established limits.

Mr. Thibaud Rerolle, Safaricom's Director in charge of Technology said that they are committed to RF safety and that is why they ensure that all the equipment used meet the international standards. He further noted that they have invested

heavily on training its engineers and contractors on Radio Frequency (RF) safety, providing devices that deter radiation and putting signage near the compliance zones boundaries.

"Prior to mounting of the BTS, an Environmental Impact Assessment (EIA) is carried out by experts. The goal of the EIA is to ensure that decisions on proposed project and activities are environmentally sustainable. The EIA process requires that a proponent shall seek views of persons who may be affected by the project. The proponent shall be issued with an EIA license before commencement of the project," said Mr. Osoro Newton, who represented the

NEMA DG at the launch. He applauded Safaricom for the noble idea of coming up with the safety book which clears the misconceptions on radio frequencies and BTS.

Some of the safe working practices at a base station site include getting acquainted with the safety information and maintaining the compliance boundary, use of field monitors at the site, using appropriate precautions such as switching off RF transmissions from several or all antennae, avoid putting one's body near unterminated or damaged waveguides, people with medical implants should not enter areas above the general public limit.

# Staff sensitized on the NEMA service charter

By Agnes Kamiri



Staff undergoing training on Service Charter and resolution of public complaints  
[PHOTO: J. OCHIENO/NEMA]

In support of our pledge to provide our customers with highest level of customer service possible, it is good to keep on reminding staff of our services and commitments as stipulated in the service charter. This was done through sensitization of the service charter to four counties namely: Baringo, Bomet, Eldoret and Nandi.

Baringo County was the first to be sensitized, followed by Eldoret, Nandi and Bomet was the fourth one on 23<sup>rd</sup> January, 24<sup>th</sup>, 25<sup>th</sup> and 26<sup>th</sup> respectively. The aim of the sensitization was to remind staff of the services offered by NEMA so that they able to deliver the most reliable and efficient service possible within normal operating constraints.

The staff were enlightened on the various ways of dealing with complaints especially those forwarded from the office of the Ombudsman. They were optimistic that after the end of the meeting, there would be change on how they report various cases arising within their counties in regard to the environment and in line with the Authority's mandate.

Staff in the three counties led by their County Directors of Environment, were in open arms to welcome the Communications team. The sensitization will go a long way with ensuring that the customer service charter is implemented fully and that staff are aware of its' existence.

Among the staff were interns who got an opportunity to learn on NEMA which will place them at a better position to help out customers in handling cases which may arise.

All the four CDE namely Mr. Monda, Mr. Njiru, Mr. Birichi and Ms. Odero

said that this was a great moment for them as they were empowered to tackle all matters in a more informed way. The CDEs also called on their officers to be vigilant on all those who go against the environmental regulations saying action will be taken to ensure compliance.

The Section is urging all staff to adhere to the customer delivery charter so that we can improve on our productivity to achieve the set targets, and enhance our corporate image.

*{The writer is NEMA's Corporate Communications Officer}*



Staff undergoing training on Service Charter and resolution of public complaints  
[PHOTO: J. OCHIENO/NEMA]

# Kenya to Launch its Domesticated EPI Toolkit

By Joseph Makau

The EPI was first initiated in 2000 as a global Environmental Sustainability Index (ESI), which in 2006, became the Environmental Performance Index (EPI). Maintained by Yale and Columbia University, in 2018 the EPI used 24 indicators of Environmental Health and Vitality to measure how well 180 countries were performing in meeting global SDG standards. Essentially, EPI can also be used by countries to internally assess how well sectors are doing, and highlight where there is room for improvement.

In 2018, Kenya ranked 130 out of 180 countries dipping to the second lowest performance since the index was published. In 2014, Kenya was 140 out of 178. This poor performance is attributed to a number of key indicators that appear to have performed poorly, notably-water and sanitation, air pollution and heavy metals. The best performers during the year were biodiversity and habitat as well as climate and energy.

NEMA with support from the Danish Government, under the Green Growth and Employment Program (GGEP) is domesticating the global Environmental Performance Index (EPI) as a national tool, which can be used to measure county by county environmental performance.

The aim is to check progress vs Vision 2030 goals and Green Economy Strategy and Implementation Plan (GESIP) targets. Generally, county performance can be mapped and compared to illustrate those counties that need to invest more in the sector being measured.

The Kenyan EPI tools are currently being tested in the counties and the first national EPI is anticipated June 2018. This will provide high level sector policy and management with a critical profile snapshot of the situation between counties. It can be used by County Governments as a tool to lobby for greater fund allocation for environmental related activities in poor performing sectors.

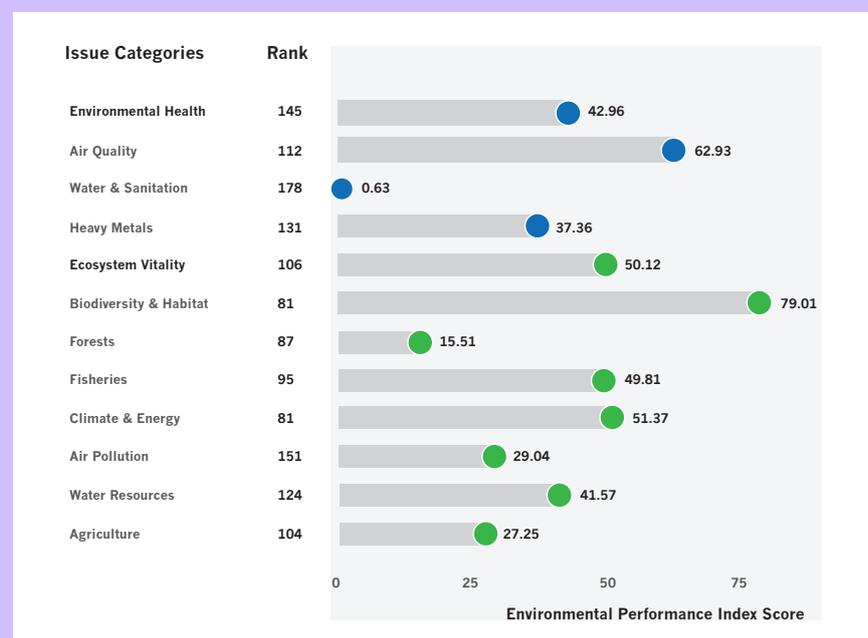
Year on performance can then be measure to see if there is improvement. Coupled with State of the Environment (SOE) data, the EPI can also summarize the drivers, pressures, and state, impact and response (DPSIR) indicators so that County Integrated Development Plans (CIDP) can be used in addressing the root cause of declining trends.

## The 2018 Environmental Performance Index Records Kenya Performance vs 180 Countries

### What is the Environmental Performance Index or EPI?

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In 2018, Kenya ranked 130 out of 180 countries dipping to the second lowest performance since the index was published. In 2014, Kenya was 140 out of 178. This poor performance is attributed to a number of key indicators that appear to have performed poorly, notably-water and sanitation, air pollution and heavy metals. The



best performers during the year were biodiversity and habitat as well as climate and energy.

- Water and sanitation recorded a low 178 out of 180.
- Air pollution was 151 out of 180 and,
- Heavy metals recorded 131 out of 180.

The best performing sectors were:

- Biodiversity and Habitat ranked 81 out of 180,
- Climate and energy achieved the same 81 out of 180.

### Why did Water and Sanitation Management Score so low?

Sanitation is measured as the proportion of a country's population exposed to health risks from their access to poor sanitation. Drinking water is measure as the proportion of a country's population exposed to health risks from their access to poor drinking water. Kenya respectfully scored 178 and 177 out of 180 countries. This emphasizes the need for Kenya to address SDG 6 and invest more in minimizing the health risks posed from unsafe sanitation and drinking water, maintaining clean water systems to minimize contact with dangerous bacteria and viruses.

### Why did Air Pollution Management Score so Low?

Air pollutants negatively affect ecosystem integrity and function and the EPI uses industrial emission indicators of sulfur oxides (SOX) and nitrogen oxides (NOX). These pollutants can cause acidification, degrading soil and water quality, and NOX can also lead to eutrophication (an excessive enrichment of nutrients in water systems). Using emission levels, EPI 218 ranked Kenya 154

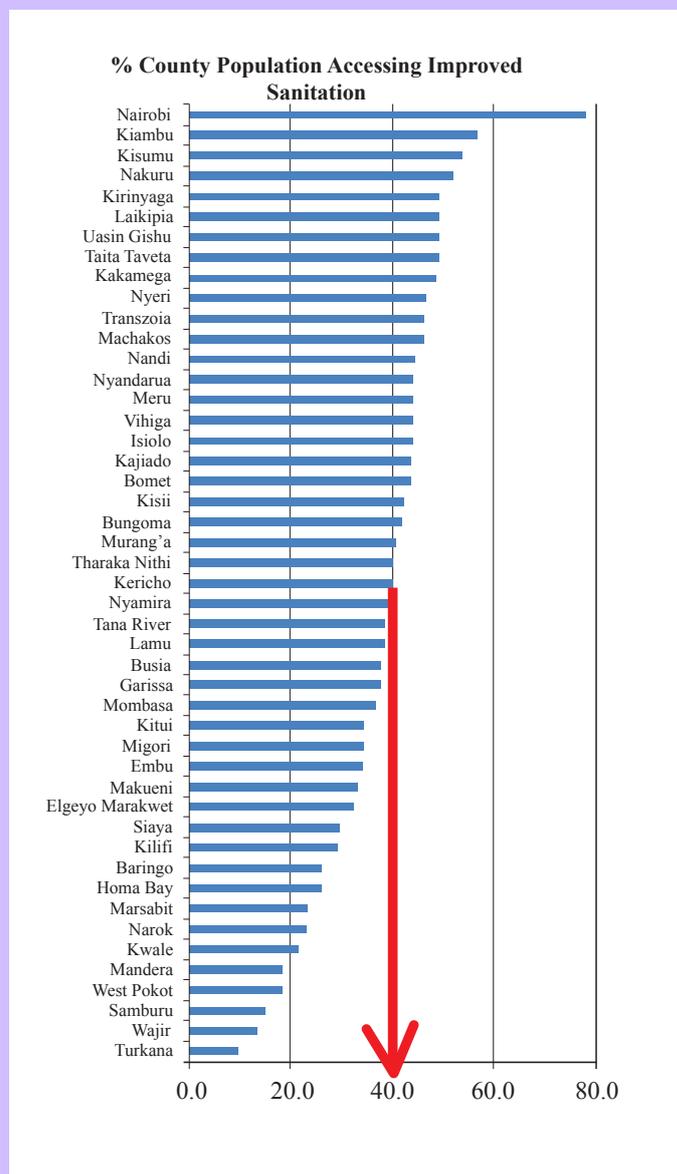
and 137 respectfully out of 180 for SOX and NOX. Acidification and eutrophication driven by atmospheric pollutants can be difficult or impossible to reverse, persisting long after emissions reduction policies are implemented. It is therefore imperative that Kenya act to reduce industrial emissions of these long-range air pollutants to protect the health of her ecosystems.

### Why did Heavy Metals Management Score so Low?

Heavy metal exposure causes countless deaths and disabilities, and lead is considered one of the

most significant environmental health threats to children and pregnant women and no known tolerance level of lead exposure is considered. The 2018 EPI used proportion of population exposed to lead prevalence in air, water, dust and soil, and various manmade products (eg paints, fuel, batteries, consumer goods, etc ). Kenya EPI scored 131 out of 180 countries. Kenya therefore needs to focus attention on strengthening public health laws and enforcement mechanisms to mitigate lead exposure, addressing SDG 3.

*{The writer is NEMA's Environmental Officer}*



The County EPI for Sanitation Showing Under-performing Counties

# One year into Adaptation Fund Programme in Kenya

By Sarah Muthoni



(From left) The NEMA NIE coordinator Ms. Wangare Kirumba and the KRCS Secretary General Mr. Abbas Gullet accompanied by other officials sampling some of the Water melons that were harvested under drip irrigation in Waldaa, Marsabit County.

## About the Programme

The National Environment Management Authority (NEMA) is implementing Adaptation Fund Programme titled “The Integrated Programme to Build Resilience to Climate Change and Adaptive Capacity of Vulnerable communities in Kenya” is a national programme seeking to address climate change impacts and has the following objectives:

- i) Enhancing Climate resilient agricultural, agro-forestry, pastoral and agro-pastoral production systems to improve food security in selected Counties in Kenya
- ii) Improving climate resilient water management systems to enhance food security in selected Counties in Kenya
- iii) Increasing resilience to the effects of rise in sea level and shoreline changes through Integrated Shoreline and Mangrove Ecosystem Management at Vanga and Gazi in the Coastal region of Kenya
- iv) Disaster risk reduction among targeted vulnerable communities for climate related risks in Kenya

- v) Strengthening institutional capacity, knowledge management, awareness raising and promotion of adaptation mechanisms to improve resilience on climate change to selected vulnerable communities in Kenya.

The programme is running for three years, 2016-2018 and is being implemented by eleven executing entities in fourteen Counties.

The implementation of this programme commenced in 2016 and has achieved significant milestones in each of the five objectives that the programme addresses. The programme has initiated diversification of livelihoods through adoption of drought tolerant and high value crops, increased animal production through promotion of drought resistant fodder crops, pasture conservation and emergency fodder banks.

To illustrate this in Marsabit County, communities in Waldaa area have been supported to grow butternuts, water melon, Sudan grass and other vegetables.



Established mangrove tree nurseries at the coastal shore in Kwale County

Efficient irrigation methods have been employed to achieve productivity. The project beneficiaries are now fetching alternative source of income and also have direct source of food in an area that is commonly hit by drought.

One of the beneficiaries explains; “Before the Waldaa project, I just used to sit at home. The farming has really boosted my spirits. My six children never miss food because as you saw, I just sold 4 watermelons at Ksh.400. I also plant spinach and kale alongside an onion nursery,” Eleba Galgalo. Apart from supporting the farmers with land, this project also provides farm inputs such as seeds and seedlings, fertilizers, agrochemicals and training on agronomic practices. More benefits include post-harvest management and value addition of the produce.

“Once the entire farm is put under production, the overall yield will be over 3,000 metric tons of food being grown on this farm, which will be a phenomenon,” Dr. Gullet, the Secretary General of the Executing Entity (KRCS) added. Related food security interventions are proposed milk cooling plant in Emali, fish cooling storage in Masinga and a fruit processing plant in lower eastern region. Other counties with food security interventions are, Kisumu, Kwale, Mombasa, Homa Bay, and Laikipia.

On water management, the programme seeks to improve climate resilient water management systems to enhance food security. To realize this objective, appropriate physical assets and infrastructure for water harvesting, storage and irrigation are being established which include roof catchments and water pans.

For instance in Taita Taveta, Kilifi and Kwale counties, schools have been selected to benefit from rain water harvesting and storage facilities. In Laikipia, a water

intake along Thome River is due for construction which will be transported through a 300mm wide pipe over a distance covering 9.348km to provide water to households in Thome area. In Kajiado County, installation of micro irrigation kits for kitchen gardens has been implemented as other water harvesting structures are underway. Other targeted areas: Laikipia, Kajiado, Kisumu, Wajir, Kiambu, Meru, Kitui, Machakos, Kwale, Kilifi, TaitaTaveta, Mombasa, Lamu, Tana River and Garissa.

The programme focuses on coastal marine management which is set to increase resilience to the effects of sea level rise and shoreline changes in the Kenyan coastal zone. Towards this objective, communities in Kwale have been assisted to establish mangrove tree nurseries that will rehabilitate mangrove ecosystems, protect coral reefs, erosion and accretion control in Vanga and Gazi areas. This project is being implemented through Integrated Shoreline and Mangrove Ecosystem Management (ISMEM) and will also include setting up of an inventory and GIS database for the shoreline and mangrove ecosystems.

The objective also seeks to strengthen capacity on programme implementation. Towards this NEMA in its role as the NIE has trained the executing entities on financial management, procurement processes, and implementation of the Environment and social policy of the Adaptation Fund. Further NEMA has sustained periodic monitoring and financial auditing of the implementation of the programme.

On disaster risk reduction, this programme is designed to increase the level of preparedness of communities in along Nyando, Awach and Ombeyi rivers in Kisumu County. Establishment of flood and drought adaptation measures on selected sites has commenced, and early warning systems will be established and implemented. Case in point, along river Nyando, unblocking of dykes, planting of bamboos and digging of canals has been effectively put to practice.

Knowledge management has been strengthened and EEs have been sharing experiences about their different projects. NEMA is optimistic that, come the end of the three-years project period, the target communities shall not only have been able to embrace and benefit fully from the interventions of this programme, but will also have their inherent community driven and community owned adaptive capacities enhanced.

*{The writer is NEMA's Environmental Officer at NIE Section}*

# Devising ways to deal with diapers

By Anastacia Muiti

In the wake of economic empowerment especially among the urban dwellers there is increasing use of diapers. More and more brands are being introduced into the Kenyan market due to the demand. The diapers have replaced the traditional napkins that were popular with the mothers of the 1990s.

The diapers have brought convenience to today's mothers since they are easily portable, comfortable, easy to use and more hygienic to use and handle unlike the cloth napkins.

However, the disposal of the diapers is posing a serious challenge in waste management in our urban areas. When used diapers are disposed in our dumpsites and in some other areas within our towns, they pose a serious health issue. The diapers are usually collected by dogs torn apart and scattered all over.

As much as they are popular, the disposal of used diapers is likening the trend with the flying toilets phenomena in some slums areas. This has actually

contributed to the spread of faecal material into our environment.

When it rains, this also contributes to the pollution of our waterways. Subsequently, this is contributing to spread to spread of diseases like dysentery, typhoid and intestinal worms infection and the risk of cholera outbreaks.

It would be imperative as the country embarks on the implementation of the ban of the plastic to also consider the management of used diapers. This is important considering that the materials that make the diapers are polythene based and therefore not biodegradable.

As companies spin out diapers they should be required to have a follow up clean up mechanism similar to what "Rentokil Initial" does with used sanitary pads. This would save our environment and save lives.

*[NEMA's Principal Environment Officer]*

## Core Services

The Authority core services include:

- Registration and Licensing of Environmental Impact Assessment (EIA) and Environmental Audit (EA)
- Environmental Impact Assessment Licensing
  - Environmental Auditing
  - Environmental Incident Management
  - Environmental Inspection
- Environmental Information, Education and Communication (IEC)
  - Environmental Reporting
  - Environmental Planning
- Development of Curriculum for Training of Environmental Impact
  - Assessment/Audit experts
- Administration of an Environmental Awards scheme

## *Our Vision*

To be a World-class Environmental Management Authority

## *Our Mission*

To ensure a clean, healthy and sustainable environment in Kenya through supervision and coordination of all matters relating to environment.

## *Our Motto*

Our Environment, Our Life, Our Responsibility

Mazingira Yetu, Uhai Wetu, Wajibu Wetu

### **PLEASE**

**Report Environmental incidents to:**

**0786 101 100**

**Email: [incidence@nema.go.ke](mailto:incidence@nema.go.ke)**

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