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EAST AFRICAN COMMUNITY

EAST AFRICAN LEGISLATIVE ASSEMBLY

REPORT OF THE COMMITTEE ON AGRICULTURE, TOURISM AND NATURAL RESOURCES ON THE OVERSIGHT ACTIVITY ON "WASTE MANAGEMENT IN EAST AFRICAN COMMUNITY PARTNER STATES"

10TH – 14TH APRIL, 2017

CLERK'S CHAMBERS
EAC HEADQUARTERS'BUILDING
EALA WING,3RD FLOOR
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1.0. INTRODUCTION AND BACKGROUNDINFORMATION

Pursuant to Article 113 (1) for the Establishment of the East African Community, Partner States undertake to cooperate and adopt common positions against illegal dumping of toxic chemicals, substances and hazardous wastes within the Community from either Partner State or any third party. Sub-clause (2) of the same article stipulates that Partner States shall harmonize their legal and regulatory framework for the management, movement and utilization and disposal of toxic substances. Under subsection (3), it is clear that the EAC Partner States are also signatories to various International Environment Agreements.

Within this background, the East African Legislative Assembly Committee on Agriculture, Tourism and Natural Resources undertook an oversight activity in the EAC Partner States on Waste and e- waste Management with a view to see how best they can manage their wastes.

1.1. Objectives of the Oversight Activity

The main objective of the oversight activity was for EALA Members and other relevant stakeholders to understand how best EAC Partner States can manage their waste and learn best practices from each other.

1.2. Participants

The meeting brought together Members of EALA Committee on Agriculture, Tourism and Natural Resources Committee and relevant stakeholders in waste Management. In the Republic of Kenya where a workshop was held, the Committee received presentations from experts and interacted with other relevant stakeholders from the Republic of Kenya identified by the Kenyan Ministry of East African Cooperation and Labour.

2.0. METHODOLOGY

The following methodologies were adopted:

i. Visiting some dump sites and waste management plants in Partner States;
ii. Interacting with responsible authorities and institutions in charge of waste management to learn practices in Partner State;
iii. Holding a workshop to receive experts' presentations and views on management of liquid, solid and electronic waste. Kenya as a case study.

3.0. FINDINGS OF THE OVERSIGHT ACTIVITY

3.1. PRESENTATIONS

3.1.1. KENYA CASE STUDY ON WASTE MANAGEMENT

1. Presenter: Dr. Anne Nyatichi-Omambia, Head of waste management, NEMA-Kenya

Waste includes any matter prescribed to be waste whether liquid, solid, gaseous or radioactive. The prescribed matter is discharged, emitted or deposited in the environment in such volume, composition or manner likely to cause an alteration of the environment.

Hazardous waste on the other hand refers to any waste which has been determined by the Authority to be hazardous waste or belong to any other category of waste provided for in section 91 of Environmental Management Coordination Act, cap 387 of Kenya.

There are various waste streams that can be transported upon licensing. These include:

- Municipal waste or garbage
- Industrial waste
- Biomedical wastes
- Hazardous wastes
- Recyclable materials (waste paper, waste plastic, scrap metal ,used oil, asbestos, e-waste); and
- Sewage

Regulated activities under the Waste Management Regulations 2006

The activities and standards for waste transport and waste management facilities are regulated through issuance of licences for the following categories:

- Waste generators
- Waste transport vehicles
- Waste treatment facilities which include:
  - ❖ Transfer stations - for all waste streams
  - ❖ Recycling facilities –for scrap metal, paper, bottles, plastics
  - ❖ Composting facilities
  - ❖ Incinerators -which are mainly used for hazardous waste
- Waste disposal facilities which include:
  - ❖ Open dumpsites;
  - ❖ semi controlled tipping sites;
  - ❖ controlled tipping sites;
  - ❖ landfills (final resting place of the waste); and
  - ❖ effluent treatment facilities.

Waste generators are responsible for disposal of their waste by:

- ensuring waste is placed at designated collection points;
- hand over waste to licenced transporters for disposal;
- minimize waste and segregate waste; and
- adopt cleaner production.

Obligations of waste transportation vehicles include:

- Receive waste from generators and transport to licensed disposal sites;
- Ensure waste is not scattered along the way;
- Ensure vehicles are appropriately labeled;
- Carry dully filled tracking documents; and
- Ensure documents are stamped by waste disposal facility.

Trans-boundary Movement of Hazardous Waste (Basel Convention)

Transboundary movement of hazardous waste is regulated through the **Basel Convention.** The Convention was adopted in 1989 and came into force in 1992.

The main objective of the convention is to protect human health and the environment against the adverse effects of hazardous waste. The Convention covers wastes such as toxic, poisonous, explosive, corrosive, flammable, eco-toxic and infectious wastes.

Kenya is a signatory to this convention and NEMA is the operational focal point and issues permits for trans-boundary movement of hazardous wastes.

Guidelines on the safe management of hazardous waste

NEMA has developed the following guidelines on hazardous waste management

- National guidelines on **E-waste** Management;
- Guidelines on the safe management of **Asbestos** waste; and
- Technical guidelines for the management of **used oil and oil sludge** in Kenya.

In addition to the guidelines, NEMA has completed drafting the following regulations, which are now awaiting approval:

- Draft E-Waste regulations;
- Draft waste oil regulations;
- Draft waste tyre regulations.

Current interventions

Currently, the following interventions on waste management are in place:

i. Legislative Framework- there are various laws and regulations on waste management;
ii. Environmental and Social Planning Tools & Frameworks;
iii. National Solid Waste Management Strategy;
iv. Compliance assistance program-which enhances compliance promotion and education;
v. Incident Management, Inspection and Monitoring;
vi. Enforcement and prosecution; and
vii. Control of waste streams – for example the Plastic carrier bag ban gazetted in March 2017.

3.1.2. LIQUID WASTE MANAGEMENT

1. **Presenter: Mr. Robert Orina, Chief Environmental Enforcement Officer, NEMA-Kenya**

Kenya generates a lot of wastewater from industries, households, etc. Large amounts of untreated effluent water are also released to the environment. Only 5% of waste is collected by the public sewer systems. The rest contributes to liquid waste.

Effluent treatment efficiency of public sewer systems is only 20% national wide. This makes the Water Service Providers (SPs) one of the biggest polluters in the country. The problem is exacerbated by exhauster services provided by the private sector which dump illegally the untreated human waste into the environment. This has greatly compromised the water quality.

Why is water quality important?

90% of the Kenyan population drinks water directly from water sources including rivers, lakes, wells, boreholes, streams etc. Discharge of wastewater into the aquatic environment indiscriminately therefore endangers the lives of the people.

It is therefore inevitable that Kenya needs very pragmatic policy and regulations to encourage use of wastewater. Currently, wastewater use is illegal, restricted and limited due to lack of a policy and recognition by the existing legislations e.g. Water Quality Regulations 2006. However, the Water Act, 2012 has attempted to recognize the importance of waste water recycling and reuse.

Water Quality Management in Kenya

Water quality is regulated by the following legislations:

- The Environmental Management and Coordination (Water Quality) Regulations, 2006;
- Water Act 2012 which established Water Resource Management Authority, Water services Boards and Water and Sewerage Companies;
- Constitution of Kenya 2010 Fourth Schedule which specifies Storm water management systems and water and sanitation services as a function of the county governments.

Current Approaches to Wastewater Management

Little effort has been geared towards embracing other technologies of managing wastewater, thus leaving it to common conventional treatment systems and approaches to wastewater management. Some of the water treatment technologies available include:

i. Sewerage Treatment Plants (stabilization ponds) – these are operated by local authorities and sewerage service providers;
ii. Effluent Treatment Plants (ETP) - these are operated by industries as a pretreatment measure or final discharge;
iii. Septic Tanks plus soakage pits – operates efficiently under soils with high percolation rates and low populations;
iv. Cess Pits (Conservancy tanks) – ideal for soils with low percolation/purification rates and entails frequent exhausting since discharge into the environment is not allowed;
v. Oxidation ditches – may be used to polish final effluent to meet stipulated standards before discharge into the environment;
vi. Constructed wetlands – used as a primary treatment measure or to polish final effluent to meet stipulated standards before discharge into the environment depending on the pollution loading;
vii. Oil interceptor or Oil-water separator – used where wastewater is contaminated with oil and grease.

Other approaches include:

- Lagoons/evaporation ponds;
- Trickling filter – used where land is scarce;
- Activated carbon;
- Sequencing batch reactor;
- Activated sludge;
- Package treatment plants.

Barriers to waste water management

- Poor public acceptance of reclaimed water. This has to do with perception;
- Lack of means for delivering reclaimed or recycled water from water treatment facilities to various users, for irrigation, industrial use, landscaping and domestic purposes or even for possible in-home use;
- Lack of VAT exemption discourages local manufacturers of plants and equipment in the sector;
- Limited number of water engineers and technicians;
- The cost of wastewater treatment is always higher than that of river water or of water from other fresh water resources. The conveyance and distribution systems for reclaimed water represent the principal cost of most proposed water reuse projects;
- Unfavorable building code for recycling.

What are the possible solutions?

- Sensitize local communities to de-construct the underlying myths and perceptions regarding wastewater reuse for agriculture aimed at improving food security in the plight of climate change;
- Enhance awareness and build capacity towards wastewater management for reuse;
- Encourage eco-friendly and cost-effective technologies for managing wastewater for different uses;
- Establishing decentralized water treatment plants;
- Finance –innovative and medium to long term, low cost and accessible means of financing liquid waste management.
- Treating waste is not cheap hence there is need for some cost support and economic incentives;

3.1.3. ELECTRONIC WASTE (E-WASTE) MANAGEMENT

Presenter: Mr. Eric Guantai, CEO, Recykla International

Electronic waste (E-waste) is electronic product that has ceased to be of any value for the current user or any appliance using an electric power supply that has reached its end-of-life (Porter, 2002). It also includes unwanted, obsolete or unusable electronic products categorized either as household appliances, office appliances and machineries. This is attributable to planned obsolesce strategies. These strategies ensure that Original Equipment Manufacturer (OEM) remain in business.

Components of e-waste

Electronic appliances contain different types of elements that are both valuable and hazardous

- **Valuable metals** -gold, silver, platinum, copper Aluminum, iron, steel, Glass, Plastic, rubber, wood, ceramics etc.
- **Hazardous substances** - cadmium, mercury, lead, barium, cadmium, chromium, Brominated flame retardants, polybrominated diphenyl among others

Due to the presence of these substances, E-wastes are considered hazardous and if improperly managed pose significant human health and environmental risks and translate into economical costs. On the other hand, e-waste has ripple benefits if sustainably managed.

Problems of E-Waste

Management and disposal of E-waste has become a serious problem in developing countries for the following reasons:

- It is growing at an unsustainable rate. It is now the fastest growing and most toxic component of municipal garbage stream;
- A lot of end-of-life electronics are neither disposed of nor recycled. Much of it, especially old computers are kept in storages at home, offices and warehouses. Some do not know what to do with the E-waste. This further complicates the issue of management of E-waste because recyclers cannot gain access to the valuable resources these electronics contain.

- Local governments do not capture this toxic stream or handle it in an appropriate manner. The leaching of heavy material (mercury, cadmium) from E-waste may pose potential long term effects on human health and the environment, for example ground water will most certainly be polluted. Of particular concern is Lead in E-waste. It causes lead poisoning which can be harmful especially to young children.
- E-waste takes up valuable landfill space. Research estimates that the growing of E-waste (which includes consumables) is three times the rate of other waste streams.
- Much of the focus of managing E-waste revolves around Cathode Ray Tubes (CRTs). Computer monitors, televisions and other electronic devices contain CRT. A typical CRT contains between 2 and 5 lbs. of lead. The environmental challenge occurs when monitors are permitted to weather in landfills, releasing these toxic chemicals into soil, and subsequently into the water systems;

Other challenges of e-waste include

- Illegal imports of E-waste from the developed countries disguised as second hand electronics or through donation of ICT equipment;
- Uncontrolled burning and disposal causes human health and environmental problems and economical challenges;
- Source of conflict:-mineral and urban conflict (landfills)

Sustainable e-waste management

This entails embracing ethical behaviors (Morals) in:

- E-waste disposal;
- E-waste collection;
- E-waste transportation;
- E-waste recycling

Disposal options

Reuse- Preventing/minimizing waste in the first place is the preferred management option (Sustainable Consumption). This can be achieved through repair, maintenance and upgrading of used electrical equipment e.g. adding memory to a computer,

upgrading software. The shortcoming of this method is that it only applies to certain electronics.

Recycle- Makes use of take back programmes /reverse logistics if any. Reused or dismantled appliances can be recycled (Green ICT).

Refurbishment- Upgrading of electronic equipment (e.g. Computer) either internally or externally to bring it to a usable condition. It delays the disposal of E-waste to a landfill

Dispose- which entails, reverse logistic, take back program, legally approved collection points; legally approved Recycling centers and Eco design.

Challenges of E-Waste in the EAC Partner States

- Lack of infrastructure for appropriate E-waste management;
- Lack of legislation dealing specifically with E-waste;
- Lack of any framework for end-of-life (EoL) product take-back or implementation of extended producer responsibility (EPR); Or payment of Advanced Recycling Fee (ARF);
- Lack of real time data on E-waste;
- Absence of effective and efficient Closing the loop/Circular Economy/Industrial Symbiosis strategies;
- Absence of right technology to scale up Closing the loop/Circular Economy/Industrial Symbiosis process;
- Lack of legislation to control in-flow (imports) of second hand electronic products from developed countries;
- Lack of awareness by public on inherent dangers of E-Waste;
- Lack of adequate recycling facilities;
- Poor sustainable corporate responsibility by industry on E-waste management ;
- Challenges of access to financing for sustainable E-waste management;
- Open tenders for disposal of obsolete E-waste from government institutions as well as from private sectors.

Recommendations

- Regional Legislation (by EALA/EAC) on sustainable E-waste management should be initiated;
- Accompanying sales of new consumer electronics with recycling fees;
- Encouraging genuine and registered recyclers;
- Manufacturers to take item back at end-of-life with incentives;
- Establish data base of imported electronics at point of entry;
- Fast-track on capacity building on management of E-waste for key stakeholders ;
- Incentive schemes for garbage collectors and general public for collecting and handling E-waste;
- Awareness programmes on E-waste for school children and general public;
- Formalize informal E-waste entrepreneurs sector;
- Scale up Industrial Symbiosis of E-waste (and other waste stream) relationships.

3.2. FIELD VISIT TO CHANDARIA INDUSTRIES

On April 13th, 2017, the Committee visited Chandaria Industries in Nairobi to learn and appreciate waste management. Chandaria Industries is the largest Waste Paper recycler in Kenya and in East and Central Africa.

The motivation to use waste paper as a raw material is to among others conserve and maintain a clean environment and provide employment to millions of Kenyans engaged in waste paper collection sector. The company also makes use of its own waste, which is still paper in its production. In the long run therefore, they do not have waste that ends up in the landfills.

The paper used as raw material is collected from schools, government offices and other corporate organizations and the company produces toilet paper, napkins and tissues for multi-purpose usage.

The company appreciated that her products are acceptable across the East African Community and has distributors across the Community.

Observation

The Committee was concerned that with the great migration to digital platforms, the company risks shortage of waste paper which is the main raw material. Members were informed that paper is still highly used in the country. A survey by Kenya Revenue Authority revealed that quantity of used paper (raw material) has increased more than twice over the years.

3.3. SPECIFIC COUNTRY FINDINGS

REPUBLIC OF BURUNDI

The Members visited two institutions in-charge of sanitation. At the Ministry, Members met with the Director General in charge of urbanization, water and Sanitation.

Meeting with SETEMU (Services Techniques Municipaux)

Members interacted with SETEMU organization. The organization was started in 1993 to help Bujumbura Municipality in sanitary services. It also helps in the management of used water and solid waste in Bujumbura.

The organization has 2 aspects:

i. Management of solid waste – collection of waste from Bujumbura and transfer to Buterere which is the main dumping site.
ii. Management of liquid waste- the organization has constructed a purification centre in Bujumbura

The organization explained that they receive some little contribution from the local population and administration. However, they are not satisfied with the services rendered and aspire to do more.

The organization launched a new project "Clean Waste Free Bujumbura". The project will help keep the town of Bujumbura clean and has three phases:

i. Buterere
ii. Musaga
iii. Muzinda

The project is still at its initial stages and the organization is mobilizing for funds to complete the project.

The organization reported that it works closely with the private associations in the management of waste. Currently, there is one private organization in-charge of waste transport and another collection. There is also another institution is charge of collecting e-waste for return to the manufacturer at the end of its useful life.

The organization conferred the main challenge they face which is lack of capacity to separate wastes and are therefore forced to deposit at the dumping site.

Visit to the Ministry of Environment

Members met with the Minister for Environment. They were informed that the Government has adopted a policy on sanitation which is now in operation. The policy aims at streamlining activities around waste water management.

In terms of alignment to EAC rules, the policy is in line with EAC norms on water treatment. During its adoption, the Ministry participated in a number of meetings with the EAC Secretariat. There are different standards used in water treatment in the country by different players. Waste water is treated before release to Lake Tanganyika. There are laboratories that test the treated water before it is released to the lake to ensure it does not introduce toxic substances to the lake.

Members were also informed that soon there will be a law prohibiting the importation, manufacturing, sale and use of plastic bags in Burundi.

REPUBLIC OF KENYA

The members held a meeting with the Nairobi City County Government.

The Kenya Chapter Members of the Committee on Agriculture, Tourism and Natural Resources visited the Nairobi County Offices and the following were some of the highlights of the presentation.

Types of Solid Waste

The types of solid waste are limited to household waste, market waste, commercial waste, street sweeping waste and office waste.

Institutional, Organization, and Human Resources Development

The Department of Environment (DoE) of City County of Nairobi is primarily responsible for providing and regulating the Solid Waste Management services in the efficient provision of Solid Waste Management. The inefficient operation of the Solid Waste Management services is attributed to the following inefficient organizational structure and improper management of the solid waste management services:

- Over-staffing under the complicated vertical structure;
- Overlapping and duplication of responsibilities of staff;
- Poor intra-department and inter-department coordination and communication;
- Unclear individual mandates and job descriptions;
- Unaccountable and slow decision-making of managers;
- Insufficient monitoring of individual work performance and;
- No standardized and planned working procedure.

Improper Zoning for Solid Waste Management Services

The current zoning for the waste collection and transportation services is basically based on constituency boundaries, and there is currently no concept on the internal cross-subsidizing system where revenue from high-income zones is transferred to a fund in order to provide Solid Waste Management services to the low-income zones. At present, private service providers are charging various levels of collecting fees in different zones, reflecting the lack of proper zoning system for cross-subsidization.

Lack of Information on Costing for SWM Services by Private Operators

Although a proper tariff setting for private service providers is also essential for sustainable provision of Solid Waste Management services, financial and cost information such as variable cost, fixed cost, total cost and break-even point for the services provided by the private service providers are not accurately calculated.

FINAL DISPOSAL

(1) Assessment of Current Condition

The Dandora Dumpsite is the only official dumpsite currently operating in Nairobi and where waste collected from the city are dumped. It is an open dumping site located at approximately 7.5 km northeast from center of Nairobi that commenced landfilling operations in 1981. It covers a large area of approximately 46 ha, but only 2ha consisting of former stone quarry filled-in at the start of operations is owned by the City Council of Nairobi (CCN) while the remaining area is privately owned land. The site is adjoined by Residential houses on the east and west and a school to the south adjoin the site. The Nairobi River flows past north side.

The amount of waste carried into the Dandora Dumpsite is weighed by the truck scales installed at the site entrance in 2006. The total amount of waste so far disposed at the site is estimated to be approximately 3,500,000 tons while landfill volume is estimated to be around 1.8 million m3. The amount in 2009 was 220,000 tons. Three (3) privately owned heavy equipment were hired to operate at the Dandora Dumpsite; however, earth covering is not carried out and there is hardly any appropriate landfill management being undertaken. There are also approximately 70 illegal dumpsites scattered throughout the city and waste collected by the private collectors are dumped at these sites. Besides, wastes in slums and low income residential areas are dumped illegally along the roadsides and vacant open spaces.

In addition, there is the Kayole temporary dumpsite located at approximately 13 km from the city center, which used to be a former stone quarry with the capacity of approximately 930,000 m3. This temporary dumpsite commenced landfill operations in 2009, mainly receiving wastes of approximately 400 tons per day from the cleaning activities in the Nairobi River, etc. Although the Kayole temporary dumpsite is managed by the National Environment Management Authority (NEMA) and wastes from Nairobi are not supposed to be dumped at this, is also on open dumping site on which no management activity apart from weighing is curried out.

(2) Identification of Issues

Since the Dandora is an open dumping site and landfill management is not adequately conducted there are, negative impacts on the local environment such as health risks among the local residents are being imparted due to the littering of waste and generation of odour, landfill gas, etc. Accordingly, it is necessary to establish a new landfill site close the Dandora Dumpsite as quickly as quickly as possible.

As for the Kayole temporary dumpsite that started operating only in 2009, so far, no negative impact has been confirmed on the local environment. However, if landfilling is continued in the current open dumping state, there is concern over the generation of the landfill gas, etc. Accordingly, is desirable to take improvement measures such as earth covering and installation of gas exhaust pipes.

ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

The current situation of the environment and social aspects related to solid waste management in Nairobi city were surveyed utilizing available information in the institutions of the sector and through field observation. Major finding and evaluations of the survey are as summarized below.

General condition

Water

It is concluded that the quality of rivers in Nairobi is being deteriorated by pollutants form the domestic sector (sewage and solid waste), agricultural sector (agrochemicals) and industrial sector (wastewater).

Sewage

The main problem affecting public health is the lack of proper sewage disposal because the area of Nairobi is partially served by sewer lines. It was noted that sewage in the slum areas is diverted to open channels, finally reaching the watercourses thereby deteriorating river water quality.

Air Quality

Main sources of air pollution that affect the City of Nairobi are the vehicles, industries, emissions from the use of charcoal or firewood, open-burning of waste, and the unsanitary waste disposal sites.

Environmental Problems due to Solid Waste

Water Pollution

Leachate is generated at many collection points and at the existing disposal sites, polluting the rivers in Nairobi. It was observed that solid wastes are dumped intentionally along the roads or the riverbanks by resident. This fact brings as a consequence the transfer of uncollected wastes to the rivers, drains, streams, and lowland areas every time Nairobi experiences intensive rains.

Air Pollution

The sources of air pollution in Nairobi City are vehicular emission, factory emission and haphazard generalized burning of wastes.

Landscape

In the City of Nairobi could be observed the proliferation of illegal disposal sites along the roads, beside the rivers and in open spaces. This fact brings about the degradation of the city environment, presenting an unhealthy landscape to residents and visitors alike.

Soil Contamination

The designated disposal site in Dandora had received in the past not only domestic but also hazardous water due to the lack of control of public sector. Since there have been no remedial action to restore the place up to the present, it is assumed that the soil is still contaminated with some heavy metals.

Social Problems due to Solid Waste

Situation of Waste Pickers

The Waste Pickers stated that their daily income depends on what they obtain from waste, because they have no other option or opportunity to earn money for subsistence. Generally, waste pickers work at the disposal sites without using any kind of equipment and materials to protect them from the unsanitary condition of those sites.

Public Health

Many of the observed solid waste collection points in the city became open temporary disposal sites because City County of Nairobi could not provide regular collection services. The presence of offensive odor, smoke and disease vectors such as cockroaches, rats, flies and mosquitos that bring negative impact to public health was noted at these collection points and disposal sites, and, according to the officials of City Council of Nairobi, residents living in and around the dumpsite would like to receive relief from air pollution caused by the burning of waste.

REPUBLIC OF RWANDA

Members held a meeting at the Mayor of Kigali's office to be informed on the status of waste management in the City of Kigali. They also visited the Kigali dumpsite and relevant institutions. In their interactive session, they were informed that there is a specific technical agency in charge of water and sanitation referred to as Water and Sanitation Agency. Rwanda Environment Management Authority (REMA) is an oversight and regulatory body and does not get involved in sanitation activities. The Water and Sanitation agency therefore oversees what the municipalities do with regard to waste management. The Members noted that the ban on plastics has significantly reduced amount of plastic wastes in Rwanda. Additionally, there are five companies that recycle plastics for reuse.

Waste collection is done by private companies. At the Sector level, which is the lowest level of administration, contracts are made between the private sector and the government for collection of both solid and liquid waste.

There is no centralized liquid waste treatment plant in the country. Liquid waste is collected in individual septic tanks for households and when they are emptied and are transported to the central disposal site. The site has been divided into two, for liquid and solid waste. Concerning solid waste management, separation of waste is done at the dumpsite by people employed by City Authority to do the separation.

There are other institutions that play a major role in waste management. For example the Ministry of Health collects and disposes all wastes incidental to their work for incineration.

E-waste management is a function under the Ministry of Trade EALA Members were unable to visit. They were however informed that E-waste was not controlled yet but that the Private Sector of Rwanda is building a plant in Bugesera for recycling all e-waste.

There are a number of initiatives taking place to address waste management in the country. These include:

i. **Central water treatment plant**- by 2020, Kigali will have a centralized water treatment plant of international standards. The project is funded by the World Bank. To kick start the process, the site for the construction of the plant has been identified.
ii. **Landfill-** a new landfill will be constructed soon. The site has been identified and the government is expecting funds from the Green Fund that will be used to finance the project. This project and the water treatment plant will run concurrently.
iii. 29 local municipalities are able to raise income from land taxes that will help them in waste management such as construction of a modern landfill.

Challenges

i. Plastic bottles and plastic bags are too many and have been collected at the dumpsites and packed at the dumping site. However, REMA is conducting a

study that seeks to make use of the plastic bottles in cement factories as a source of energy. If the study is positive, then the technology will be shared across the EAC.

ii. The Water and Sanitation Agency did not know about EAC policy and interventions on the environment.

REPUBLIC OF UGANDA

The members held a meeting at National Environment Management Authority (NEMA-Uganda) headquarters where they interacted with the Executive Director and the director and staff in-charge of waste management.

The committee was informed that environment and waste management are decentralized to the municipal and local government levels although liquid wastes are handled by National Water and Sewerage Company.

The role of NEMA is in regulation, monitoring and coordinating licensing of waste management entities and different actors. Enforcement is done at the local government. Through licensing, NEMA is able to oversee that collection, separation, transportation and disposal of solid waste is done in a proper manner. License is issued once an actor has fulfilled certain requirements. However, NEMA noted that decentralization of waste management has presented challenges, especially of coordinating the various agencies involved.

The institution has three instruments that form a framework for its operations: -

i. Environmental Law
ii. Environmental Policy
iii. Environmental strategy

The City of Kampala has a more advanced waste management system compared to local authorities which are constrained by limited capacity in terms of infrastructure and logistics required in collection, separation, transportation and disposal of waste. For example Kampala Capital City Authority has a much more advanced system that ensures composite waste does not infiltrate into water bodies. This technology is expensive and local authorities cannot afford. To address some of the challenges, local

governments in conjunction with the World Bank have built capacities of 12 municipal areas on waste management. Other ten localities are lined up for intervention with the support of the European Union.

To handle e-waste properly, NEMA is in the process of building capacity of actors. Additionally, NEMA intends to put in place a policy on e-waste. This will be embedded in procurement laws, whereby suppliers of computers and other electronics to the government will be required to cater for their disposal at the end of their useful life. The policy will require a mechanism for collection, transportation and disposal of e-waste by specialized agencies to ensure their proper disposal.

The main constraint facing environmental management in Uganda is budget allocation. NEMA and ministry of Environment are not allocated adequate funds to carry out their mandate hence limited results are realized. But even within their small budgets, the agency has been able to apply various strategies to manage wastes e.g. the composite management and industrial symbiosis where different industries collaborate.

Recommendation

Members of EALA implored NEMA to work out a mechanism of rewarding good performance in waste management and sanctioning poor performers.

UNITED REPUBLIC OF TANZANIA

The Members met with the Mayor of the City of Dar es Salaam. The meeting was opened by Mr. Bernard Haule, Acting Director, Investment and Trade Department of the Productive Sector. He welcomed the Dar es Salaam City Moyor Hon. Isaya C. Mwita who thanked the Members for their attendance and this was important for the environmental management. Hon. Mayor emeritus and the Member of East African Legislative Assembly, Adam Kimbisa was applauded for the foundation of Pugu Kinyamwezi dump site.

Hon. Adam Kimbisa informed participants on the aim of the particular oversight which was to have a common strategy that can be of assistance on having a common decision in handling the waste and to be aware of the waste management status and its challenges observed in EAC Partner States cities.

The city administration focusses mainly on solid waste management.

Two institutions deal with liquid waste management.

These are: -

i. Dar es Salaam Water and Sewerage Company (DAWASCO) which deals with the day to day activities of liquid waste management;
ii. Dar es Salaam Water and Sanitation Agency (DAWASA) which deals with water and sewage infrastructure;

Disposal of e-waste on the other hand is done by individuals.

The Members were informed that Dar es Salaam has a population of about five million people and approximately four thousand tonnes of garbage is generated per day. There are similar challenges in waste management in Dar es Salaam as in other EAC Partner States cities.

However, the city authority manages to collect only a quarter of this garbage per day. This implies that they are unable to cover the city comprehensively. The rest of the garbage is disposed unconventionally e.g. behind houses or released into the drainage systems.

The Authority is in the process of sourcing for resources to initiate another landfill to accommodate the waste generated in the city.

DAWASCO provides water services through Water Machine sources of Ruvu Juu, Ruvu Chini and Mtoni. The Director informed of the attained achievements including increasing revenues up to 8 Billion per month, and the expansion of service.

Challenges

- The outdated meter readers;
- Use of old and scrapped infrastructures which causes blockages and leakages;
- Overrunning of infrastructures, for example in Dar es Salaam;
- Misuse of infrastructures for example throwing of hard waste materials in sewage systems;
- Infrastructures theft and sabotage/associated with scrapping and metal recycling business;
- damage of sewage system infrastructures due to construction of road infrastructures;

Preparedness to enhance DAWASCO services

- Plan for production of 846000 Million liters by year 2020;
- plan to build three (3) dams for waste water treatment in Mbezi Beach, Jangwani and Kurasini areas;
- plan to locate waste water collection machines in Kinondoni, Ilala, Msasani, Kurasini and Mbezi Beach areas; and
- Plan to create scattered small systems for waste water treatment in different areas.

Dar es Salaam City Council

The Director of Dar es salaam City Council presented on the management of dump sites, particularly he explained deeply on the Pugu Kinyamwezi dump site. He informed that the dump site is used to store waste materials of different kinds which they segregate in accordance with their origin. For example the waste materials from electrical products are separated and recycled for other uses and the remaining junk waste materials are collected to be burned up.

Challenges faced by the management of waste materials at the dump sites.

- The formation of poisonous liquid made of waste water. This situation left the Pugu Kinyamwezi dwellers use and drink water with a mixture of such poisonous liquid;
- Non readiness of citizens to contribute for costs of waste products collection from their areas;
- Establishment of residence buildings near dump sites which brings about complaints on foul-smelling;
- Lack of appropriate areas serving as dump sites; and
- Absence of manure production industries.

Preparedness to find solution to challenges

- Dar es salaam City Council is carrying on with the plan of sensitization on waste products recycling;
- Dar es salaam City Council has organized the vocational trainings on the coal production through waste materials to women and youth groups;
- Dar es salaam City Council is carrying on talks with investors of waste materials recycling and coal production industries;
- Dar es salaam City Council has allocated budget for the construction of feeder roads to the dump site;

- Dar es salaam City Council has organized radio programs to sensitize citizens and bring about awareness on the opportunities of waste materials including employment break through;
- Continuing to enhance plastic and glass processing industries for their better and effective production.

4.0. GENERAL OBSERVATIONS

From presentations, field visits and interactive sessions with relevant stakeholders, Committee Members observed the following:

1. Wastes cannot be completely eliminated but can be minimized;
2. Environment management institutions are not allocated adequate funds to run their activities and this limits the results they are able to achieve. Most of the budget allocated is tailored towards recurrent expenditures, leaving a limited amount to operations. This may send a message that the environment has not been prioritized by the Partner States.
3. Treating the waste is not cheap; there is therefore need for government to support the cost and give incentives to those involved in waste management;
4. Partner States appreciated the EAC Polythene Materials Control Bill, 2016 and pledged their support for it. They also reiterated that the law is supported by the population and only a few manufacturers are opposed to it. Once the law is in place, some companies engaged in manufacturing plastics will change their production lines to other products.
5. The following practices by NEMA Kenya should be emulated as best practice:
    - NEMA-Kenya developed the solid waste management strategy that aims at improving practices in this area. It launched the Rapid Results Initiative on waste management. One of the objectives of the initiative is to create incentives for county governments on waste management. To achieve this, NEMA has a scorecard for counties that is used to assess their achievement with regard to their responsibility on waste management. It will come into effect July 1st 2017 and run for one year when results will be released.

- To enhance sensitization of the citizens and county governments, NEMA-Kenya has a whole department dedicated to awareness creation. The department works closely with local administration including the offices of the County Commissioners. Further, NEMA is working with Urban Residents Association and educating urban dwellers in waste management, illegal dumping and enforcement of regulations.
- . One of the objectives of the strategy is to encourage separation of wastes by producers. However, the main challenge with separation of wastes lies with the different roles played by persons engaged in the disposal process.

6. Presentations seemed to have accepted wastes and focus was on the business that could be generated from the waste as a form of management yet the Committee seeks to eliminate waste generation in the Partner States. The Committee noted that waste management is costly in the first place, and so any wastes generated should be incidental and not purposeful. Furthermore, they noted that more attention should be given to minimizing the waste, then managing well the unavoidable waste.
7. National Environment Management Authorities (NEMAs) have not been impactful on solid waste management. This is especially in regard to dumping sites. In Uganda for example, NEMA is more known on issues of construction especially on wetlands. There is therefore more work that needs to be done to improve on its other areas of its core mandates.
8. The issue of storm water was not captured in the presentations. Members were however informed that storm water is not classified as liquid waste, as it is anticipated that there are adequate infrastructure on land to direct the water into rivers.
9. Continuous growth in technology implies that the problem of e-waste is bound to remain for long. This is exacerbated by unethical business practices such as counterfeits in the market, translating into increased potential for release of toxic and dangerous emissions to the environment. This therefore means that

management of e-waste is of prime concern. Members noted that competition and undercutting can compromise professionalism in e-waste management. There is therefore need for synergies and capacities to be built in this area. Further, people should be sensitized on the dangers of e-waste and how they can dispose it off correctly e.g. obsolete phones and other household electricals and electronics.

10. There have been discussions on banning the use of plastics in the region. But this has not been received well, diverting to management rather than a total ban. However, there is need to emphasize that waste that cannot be banned completely or controlled e.g. food waste should be managed properly and others like plastic carrier bags banned.
11. Due to high population densities in some urban quarters and limited sewerage networks, people have developed a tendency of releasing sewage into storm water. This has made management of liquid and storm water more complicated. This is worsened by the fact that counties have focused more on clean water supply, without planning for adequate sewerage networks at the same time. This issue should be addressed to achieve a proper system of liquid waste management in urban areas.
12. Enforcement by NEMA has proven to be a challenge when government institutions have to be regulated by their counterpart e.g. in Kenya, water companies run by the government and county governments. It is easier to employ enforcement mechanisms with the private sector. This is therefore an issue that should be addressed.

5.0. RECOMMENDATIONS

From this oversight activity, the Committee recommends the following:

1. Partner States which do not have a legal framework on waste management should endeavor to have it as soon as possible since wastes constitute a threat for lives of citizens and a harm to environment safety.

2. Partner States Governments should have a regulation on take- back programs for obsolete electronics, such as phones and computers to facilitate proper disposal of e-wastes. Further, eco-friendly products should be advocated for as they are not harmful to the environment even after their end-of-life.
3. Partner States should encourage Industrials symbiosis to reduce industrial wastes. In this case, wastes from company "A" for example are used as products in a second company "B".
4. Partner States' National Environment Management Agencies should conduct extensive sensitization of the citizens on waste reduction, separation and management. Further, these Institutions should embrace a multi-stakeholder approach to waste management by engaging, apart from just citizens, all leaders, government agencies and local authorities and the private sector in this exercise.
5. Partner States' environmental Management Agencies should create some degree of visibility and enforcement. This entails sanctions on institutions that do not embrace proper waste disposal mechanisms and incentives for institutions that perform well.
6. To control industrial wastes, investors should provide their plans on waste management before being licensed. This should be firmly based on regulations across all Partner States.
7. The Committee urge the Council of Ministers to follow up on implementation of waste management and report to EALA every two years.
8. The Committee recommends EALA to adopt this report with all its recommendations.

6.0. CONCLUSION

Committee Members appreciate the collaboration of all stakeholders interacted with during the oversight activity. They appreciate the enthusiasm with which experts, Environment Management Agencies representatives and other key stakeholders have given information with.

Members hope that Partner States will take into consideration the recommendations contained in this report to help our citizens live protection against hazardous waste and e-waste which are harmful to their lives. The Committee found this activity very timely if not very late since this was the very first time EALA undertakes an activity in this area of waste Management.

7.0. ACKNOWLEDGEMENT

Committee Members appreciate the Rt. Hon. Speaker of EALA and the office of the Clerk for allowing them to implement this activity they had yearned for, for quite a long time.

The Committee also express its appreciation to all experts on waste (liquid, solid and e-waste) management and all other relevant institutions which received them and availed them needed information and hopes for a better collaboration with new coming Members of the Committee.

REPORT OF THE COMMITTEE ON AGRICULTURE, TOURISM AND NATURAL RESOURCES ON WASTE MANAGEMENT IN THE EAC REGION: 10TH – 14TH APRIL 2017

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2. Hon. Jeremie Ngendakumana .....
3. Hon. Leonce Ndarubagiye .....
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