

# NAPE LOBBY



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**Recycling Electronic Equipment Increase  
Risk of Lead Poisoning**

**Uganda's Experience**

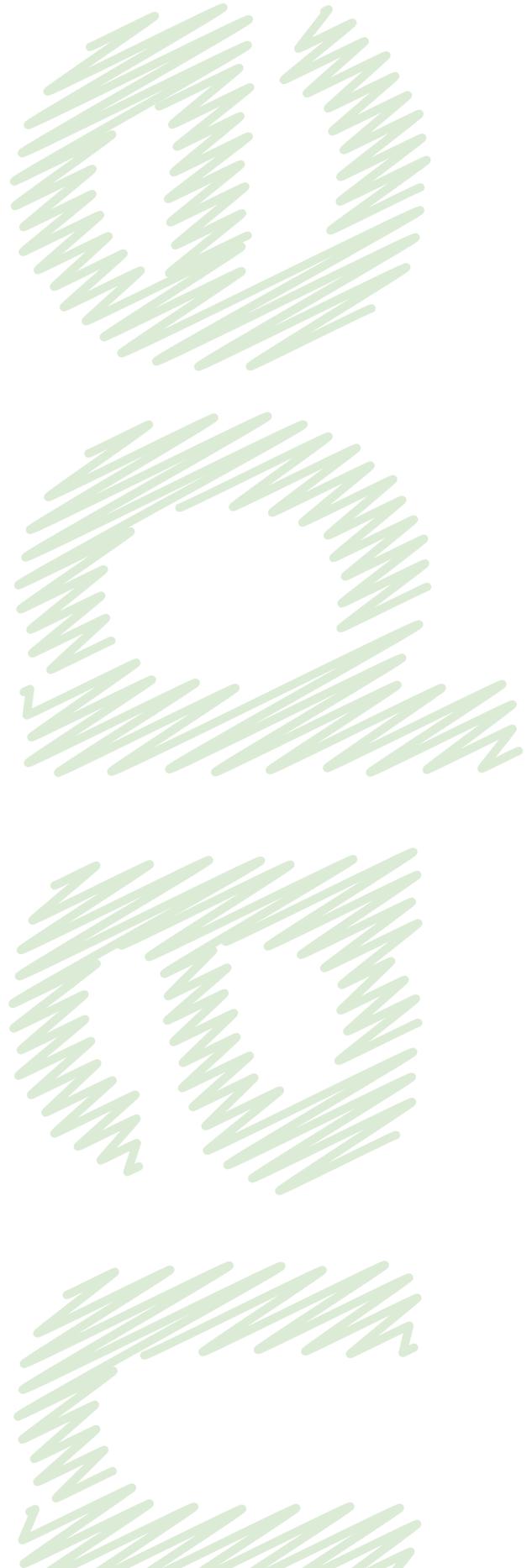


Funded by the Swedish Society for Nature Conservation

## Electronic Waste

*Electronic waste must be disposed of in both a legal and environmentally friendly way.*

*Do not put your old electronic products in the trash (even if it is legal in your country). Electronic products have hazardous elements inside them. The toxics inside these products do not belong in the landfill!!*



# EDITORIAL

The electronics industry is the world's fastest growing manufacturing sector. Modern lifestyle has meant that people upgrade their electronic equipments such as mobile phones, computers, televisions etc. more frequently than ever before.

Rising wealth and technological advancement has led to fast electronic and electric product obsolescence in developed countries. This has led to a massive increase of electronic waste, most of which are dumped in developing countries, mostly in Africa.

But when people clamor for the latest electronic gadget to hit the market, what happens to discarded and obsolete items?

E-waste is mostly made up of metal and plastic components, but also contains small amounts of heavy metals and substances of concern such as in printed circuit boards. The wide variety of e-waste makes it hard to generalize the material content.

Improper disposal of e-waste leads to environmental pollution and this may in turn harm human health. The best way to treat e-waste is to recycle it properly. E-waste comprises many different components and requires specialized equipment to dismantle, shred, process and extract the constituent materials that can then be turned into new products.

Government of Uganda in 2014 developed a National legal framework to manage E-waste. It is yet to be seen if this strategy will effectively work to avoid mismanagement of E-waste and promote improved human health and environmental sustainability.



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# We are all responsible for increasing E-waste in our homes and communities

Today people are obsessed with new models of electronic gadgets - smart phones, iPads, flat television screens.....name it. It is hard to imagine that an average home in Uganda has nearly over 20 electronic gadgets!

But do people ever think of what happens to these electronic gadgets when they are done with them and no longer use them? Of course these products become electronic waste. The big question is where do we dispose of our electronic waste?

*Where are these old electronic gadgets discarded? Probably they are trashed?*

*But this is wrong because E-waste does not belong to a landfill. E-waste must be disposed of carefully.*



## Responsible management of E-Waste



E-Waste should never be trashed. Even small stuff like cell phones or dry batteries should not be in the trash. These products contain some harmful chemicals like lead, mercury etc that can leak in the environment and become a health hazard to human, animals and the entire ecosystem.

Old electronic gadgets should be treated with care. E-waste should be collected in a specific location and taken back to the manufacture for recycling.

If recycling is to be done in countries where the products are used, there should be laws to regulate the process to avoid the risk of poisoning from the hazardous chemicals in the e-waste.

# Recycling Electronic Waste

Recycling can be a good way to reuse the raw materials in a product. Recycling electronic waste however, has to be regulated all E-waste have plastics and chemical components that can cause potential harm to workers in the recycling yards, as well as their neighboring communities and environment.

Unregulated recycling centers strip the waste of valuable metals by burning or dissolving the plastic components, thereby releasing highly toxic and often carcinogenic chemicals contaminating the air, soil, and groundwater while posing threats to wildlife and human health.

E-waste contains a myriad of toxic substances such as: Lead, Cadmium, Mercury, Hexavalent Chromium, Barium, Beryllium and some platinum group metals.

## You need a law to regulate recycling E-waste



*A man dismantling an old computer in Ghana*

## Do not burn E-Waste!



*Burning of electronic waste in Ghana*

*Regulating the end-of-life handling of some electronic discards helps to protect chemical pollution from E-waste and recovery of materials that can be reused in making new*

*Burning or dissolving metallic and or plastic components in e-waste release highly toxic and often carcinogenic chemicals that contaminate the air, soil, and groundwater and pose posing threats to wildlife and human health.*

# Hazardous chemicals in E-Waste and its impact on humans

## Lead

Lead has the potential to damage the central and peripheral nervous systems, blood systems, kidney and reproductive system in humans.

*Lead is mainly used in glass panels of monitors and in solder in circuit boards of computers.*



*Today many educational institutions, even primary levels schools are using computer. This is increasingly exposing young children to the risk of lead poisoning*

## Cadmium

Cadmium is toxic with possible irreversible effects on human health particularly the kidneys and bones. It is able to bio-accumulate in the environment.



*Cadmium is used in rechargeable batteries, semiconductor chips, chip resistors and infra-red detectors.*

## Mercury

Mercury is capable of causing damage to various human bodyorgans including the brain and kidneys, and the central nervous system particularly during early development.



*Mercury is used in thermostats, sensors, relays, switches and flat panel displays.*

*Some of the electric gadgets that contain mercury*

## Platinum group metals

Platinum group of metals are found in smart phones, iPads and other modern hand-held devices, but very little is known about their potential health and environmental impact, despite the fact they are evident in the environment.



*Today many people posses more than one phone and often time all are smart phones*

# Uganda develops National E-Waste Law

Uganda developed in 2014 a National E-waste Management Strategy to deal with what has become one of the fastest growing waste streams in the world.

The National E-waste Management Strategy includes an implementation and monitoring framework, with targets and progress indicators identified, implementing agencies, timelines for deliverables, a provision for surveillance by a coordinator based at the Ministry of Information and Communications Technology, as well as a budget over the five year period of implementation.

When recycling infrastructure is in place, e-waste is not an environmental problem. The problem arises when it is not treated correctly and this is a problem in developing countries.

Despite having highly effective informal networks for recycling, there is often no effective treatment for waste. The most predominant way of dealing with e-waste is to burn it to extract its valuable materials. This causes environmental and health problems.

## Chemicals of public health concern and their management

Chemicals of public health concern such as heavy metals: including arsenic, cobalt, copper, cadmium, lead, silver, zinc, lead and mercury – persistent organic pollutants and highly hazardous pesticides that are either controlled or have been withdrawn from use in developed countries continue to be employed in Africa with major environmental and human health impacts.

Chemicals have both beneficial and negative effects on human health. They are a part of everyday life, being essential to the growth and sustainability of our communities.

Communities, whether users or non-users of chemicals, may be exposed to their contamination as a result of ignorance of their associated risks, failure to employ protective measures in their use and ineffective implementation and enforcement of safety regulations for their storage, transportation and disposal.

Extraction of mineral resources is another source of chemicals of public concern as heavy metals occur naturally in many ores, and are often released in the mineral extraction process.



Inherent to mining and mineral processing operations is the generation of wastes. These are mostly in the form of waste rocks, including surface waste rocks, rocks between ore bodies or layers and other unwanted material.

Normally, waste rocks are stockpiled or dumped adjacent to or near the excavation area, to be used later as backfill during reclamation.

Mineral processing produces wastes in grain

sizes of fine sand, silt and clay fractions referred to as mine tailings, this type of waste contains significant concentrations of minerals that are not amenable to recovery at the time of initial mining.

Tailings are usually disposed of in specially lined tailings dams, which are normally capped and revegetated to prevent the release of environmentally harmful materials. Other wastes from mining may be in the form of water and air pollution. The majority of air emissions associated with the mining industry includes dust, oxides of nitrogen, sulphur dioxide and carbon monoxide. Some of these come from mining vehicles and on-site plant machinery.

Water quality may be affected by Acid mine drainage when large quantities of excavated rock containing sulphide minerals interact with water and oxygen to create sulphuric acid.

Heavy metal contamination and leaching - heavy metals occur naturally in many ores, and are often released in the mineral extraction process. Metals (i.e. arsenic, cobalt, copper, cadmium, lead, silver and zinc) contained in an excavated or exposed rock may be leached out and carried downstream by flowing water.



*A pile of Copper Tailings at former Kilember Copper Mines in Kasese District, Western Uganda*



*Leached Copper tailing have contaminated the areas downstream of the Kilembe Copper mines in Kasese*



*Water contaminated by Copper tailing flowing from the delapidated mine facility at Kilembe*

# Impacts of Heavy Metal on communities of North Mara in Tanzania by Barrick Gold Mining Corporation

The discharge of acidic mine drainage, with elevated levels of heavy metals, can contaminate the downstream water, agricultural soils, food crops and biota and pose a health risk to communities near the mining areas. There exist multiple exposure pathways for residents living close to mining or mineral-processing sites, including direct ingestion of soil and water, dermal contact by contaminated soil and water, inhalation of dusts, and consumption of food crops and animals.



Poisonous water leaches from Gokona Pit at ABG gold mine.

*Heavy metal leaching from ABG's Gokona Gold Pit has contaminated large swaths of community land contaminating vegetation and community water sources*



*A cross section of an environment near Gokona pit at ABG in North Mara being affected after the spillage of poisonous chemicals to local natural water sources.*



*Mwikwabe Mwita Waigama, a resident of Nyangoto village near ABG, battles with skin problem caused by contaminated water*



*A 13 Year old Paul Baita, a resident of Nkerege, one of the villages in Northern Mara highly affected by water contamination caused by heavy metals from ABG Gold mine*



*A young boy from Ngangoto villa affected by contaminated water*

*Polluted water puts the health of water user at risk of being poisoned with heavy metals. Livestock and the entire ecosystem is not*

*Acidic mine drainage pose a health risk to community water sources. Heavy metals carcinogenic and are responsible for many kinds of cancers*



# The Aggravation of Polythene bags (Kaveera) in Uganda

## Polythene bags (Kaveera)

Polythene or Plastic bags are from the same source as all plastic: crude oil. Like everything else manufactured from this non-renewable resource, it has two major drawbacks: manufacturing it emits considerable amounts of pollution, and the product is not biodegradable. In other words, it is difficult to produce, and nearly impossible to get rid of once produced. When you consider once the bags exist, they are here to stay.



*Polythene bags, commonly known as “Kaveer” in Uganda*



*One of ten consumers take home more than one polythene bags very day*

Polythene bags are popular with consumers and retailers as they are a functional, lightweight, strong, cheap, and hygienic way to transport food and other products, and are undoubtedly useful for carrying wet products such as fish and meat, unlike paper bags.

Although plastic bags are one of the modern conveniences that man seem to be unable to do without, they are responsible for causing pollution, killing wildlife, and using up the precious resources of the earth.

## Effects of Polythene bags (Kaveera) on the environment

Plastic bags if not disposed properly may find their way into the landfill and drainage system resulting into choking of drains, creating unhygienic environment and causing water borne diseases.

The indefinite period of time that it takes for the average plastic bag to breakdown can be literally hundreds of years. Every bag that ends up in the landscape threatens the natural progression of life. Because the break down rate is so slow the chances that the bag will harmlessly go away are extremely slim. Throughout the world plastic bags are responsible for suffocation leading to deaths of woodland animals as well as inhibiting soil nutrients.



*Our planet is becoming increasingly contaminated by “Plastic Pollution” and by our unnecessary use of plastic carry bags*

# Civil Society Campaign Against the use of Polythene bags (Kaveera) in Uganda

NAPE and other civil society organizations in Uganda have since 2007 campaigned against the unsustainable use of plastic bags.

The activists note that these single-use plastic bags pose a huge threat to the environment. This threat is not only related to the sheer volume of them ending up in landfill, but also to the resources needed to produce, transport and (occasionally) recycle them, and the emissions resulting from these processes. Single-use plastic bags are also well known for their interference in ecosystems and the part they play in flood events, where they clog pipes and drains.

Government of Uganda has attempted twice to put a ban on the use of polythene bags, but before the ban takes effect the same government turns around and lifts the ban. It is not clear on whose interest this is!

Most probably, government is protecting the interests of manufacturers of polythene papers and ignores the most important thing *“the environment”* and the *people* who directly depend on it for their survival.

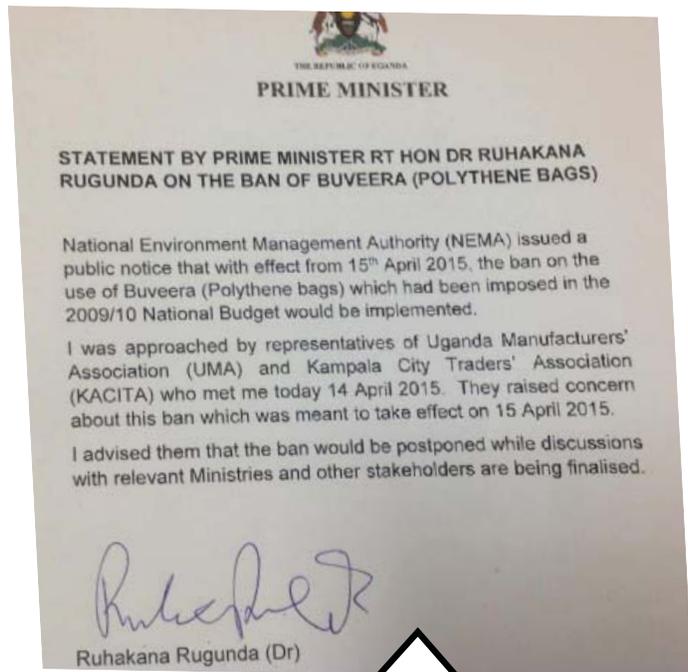
## Public Displeasure with National Environment Management Authority (NEMA)



NEMA is an autonomous government body charged with power to co-ordinate, monitor compliance with all environmental laws and supervise all activities in the field of environment in Uganda.

Unfortunately, NEMA has not lived to the expectation of many people in regard to the protecting of Uganda's environment from different fronts. The recent is in regard to the ban on the use of Polythene bags. NEMA has failed to enforce a total ban on the importation, local manufacture, sale or use of polythene carrier bags. The ban was to exclude packaging materials used for food stuffs such as bread and milk products, exports, for medical and industrial use.

At the beginning of the implementation of the ban, NEMA started with vigor and it was applauded by many, but shortly they lost the energy. Now all retail shops and super markets around Kampala and across the country have gone back to using polythene carrier bags.



*A ban on the use of plastic bags was slated to start with effect from April 15, 2015. But to public dismay, a day before the ban could take effect; Ugandan's Prime Minister Dr. Ruhakana Rugunda published a public notice to stay the ban!!!*

Now if NEMA that is supposed to monitor compliance is failing to do its mandatory obligation, who else will do that? **GOD SAVE OUR COUNTRY!!!**





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P. O. Box 29909 Kampala, Uganda

Phone: +256 - 414 - 534453

Fax: + 256 - 414 - 530181

E-mail: [nape@nape.or.ug](mailto:nape@nape.or.ug)

<http://www.nape.or.ug>