OVERVIEW OF PLASTIC POLLUTION AND ANIMAL WELFARE ZIMBABWE

LINDA MASUDZE
CENTER FOR ANIMAL LAW STUDIES, GLOBAL AMBASSADOR PROGRAM

Introduction

- Solid waste management is among the most pressing environmental challenges throughout Zimbabwe.
- There is a mismatch between waste generation and management.
- Waste streams of concern include electronic waste, sanitary waste such as diapers, medical waste, used tyres, beverage cans, and plastic waste
- Improper solid waste management poses a major threat to public health and the environment.
- Plastic pollution has emerged as a significant environmental challenge in Zimbabwe, impacting ecosystems, wildlife, and human health.

What is Plastic Pollution

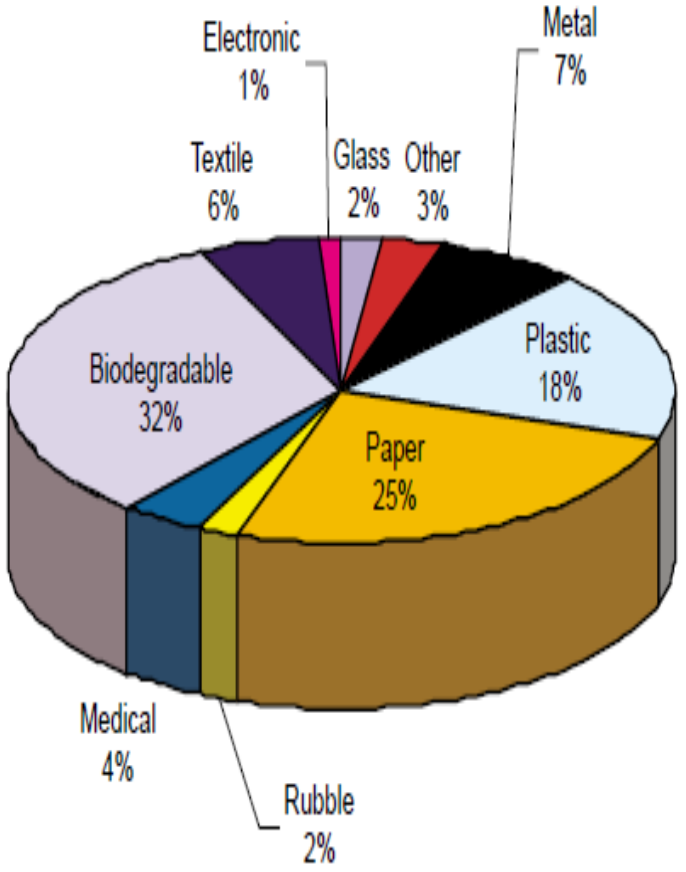
- It is the accumulation of plastic materials in the environment, which adversely affects ecosystems, wildlife, and human health.
- It occurs when plastic waste—particularly non-biodegradable plastics like single-use items—enters natural habitats such as rivers, oceans, forests, and urban areas, leading to long-lasting environmental degradation.

Types of Plastic Waste

- **Single-Use Plastics**: Items like plastic bags, straws, bottles, and packaging materials, which are used once and then discarded, are a major contributor to plastic pollution.
- **Microplastics**: Tiny plastic particles (less than 5mm) that result from the breakdown of larger plastic items or are intentionally added to products (e.g., microbeads in cosmetics). Microplastics are pervasive in the environment and difficult to remove.
- **Large Plastic Debris**: Larger plastic items, such as fishing nets, containers, and household goods, also contribute to pollution, particularly in marine environments.

Plastic waste generation

- Zimbabwe is generates approximately 1,9million tonnes of refuse annually;
- Plastic waste alone amounts to approximately 342,000 tonnes per annum (18% of the total MSW generation)
- Zimbabwe's current solid waste generation rate is high compared to the computed mean for Africa which is estimated to be 0.65 kg per capita per day (World Bank,2014).



Plastic waste generation

- Zimbabwe imports over 10,000 tonnes of plastics annually and generates a wide range of plastic wastes including
  - Low density polyethylene (LDPE)
  - High density polyethylene (HDPE)
  - Polyethylene Terephthalate
  - Poly vinyl chloride (PVC)
  - Polystyrene
  - Polypropylene

Waste collection and disposal

- Local authorities in Zimbabwe battle a below-average refuse collection rate leading to the proliferation of refuse dumps on undesignated places
- Zimbabwe still lacks engineered sanitary facilities for the disposal of wastes

Impact of plastic waste situation

- In Zimbabwe, plastics were responsible for the deaths of 5,000 animals annually – including elephants, donkeys, cattle, sheep and goats;
- Plastic waste has also contributed to blockage of storm water drains and increasing the risk of flash floods in urban and peri-urban areas)

Impact of plastic waste situation

- Plastics have been a source of air pollution in Zimbabwe.
- Non collection of waste results in rampant burning of dumpsites a phenomenon which has contributed to the release of dangerous gases such as dioxins and furans and other greenhouse gases into the atmosphere.
- Plastic waste has contributed to widespread littering in towns, cities and along highways.
- Municipal waste disposal sites in Zimbabwe are heavily choked with various sorts of plastic waste a clear manifestation that the plastic waste takes time to be degraded by natural processes thereby lasting long in the environment.

Impact of plastic waste situation

- Clogging of sewer reticulation systems and storm drains has become common in most towns and cities resulting in constant sewer burst and flooding.
- Plastic waste which escape the garbage collection process has ended up in streams thus causing water pollution in rivers and dams.

Microplastics

- Microplastics contamination in Zimbabwe's waterways is an emerging environmental concern.
- Although research on the extent of microplastic pollution in Zimbabwe is still limited, evidence from other regions indicates that microplastics can have severe ecological and human health consequences.

Key Sources of Microplastics in Zimbabwean Waterways

- **Improper Disposal of Plastics**
  - A significant portion of Zimbabwe's plastic waste, including single-use plastics like bags, bottles, and packaging, ends up in water bodies due to improper disposal. As these plastics break down over time, they fragment into smaller pieces, leading to microplastic contamination.
- **Wastewater Treatment Plants**
  - Most of Zimbabwe's wastewater treatment infrastructure is outdated and inefficient. Microplastics from household and industrial wastewater, including fibers from synthetic clothing and microbeads from personal care products, are not adequately filtered, allowing them to enter rivers and lakes.
- **Stormwater Runoff**
  - During the rainy season, plastic debris from urban areas is washed into nearby rivers and lakes. Over time, these plastic particles degrade into microplastics, exacerbating contamination in water sources.

Key Sources of Microplastics in Zimbabwean Waterways continued

- **Agricultural Practices**
  - Microplastic contamination can also occur through agricultural runoff. In some cases, plastics used in agricultural practices, such as mulching films and plastic containers, degrade into microplastics and enter nearby rivers and streams.
  - Fertilizers and pesticides, sometimes packaged in plastic, may also contribute to microplastic pollution when improperly disposed of after use.

Plastic Leakage Hotspots

Mukuvisi River

This river flows through Harare and is heavily polluted with plastics. It carries plastic waste downstream into Lake Chivero, the city. The plastic leakage into this river is exacerbated by inadequate waste collection and improper disposal practices in both formal and informal settlements.

Manyame River:

Flowing through parts of Harare, the Manyame River is another key plastic leakage hotspot.

Mazowe River:

It is affected by plastic pollution from farming activities, informal settlements, and nearby urban areas.

Pungwe River:

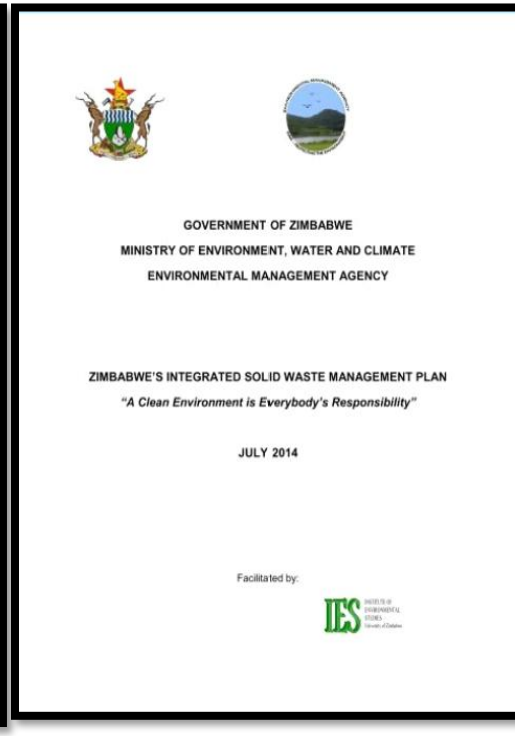
has seen increasing plastic pollution due to agricultural runoff and plastic waste from human settlements.

Legal and Institutional framework

- The Environmental Management Act [CAP 20:27]
  - Gives EMA the mandate to regulate transportation and disposal of any type of solid wastes, plastic waste included
  - Section 70 prohibits the discharge of any wastes in a manner so as to cause pollution to the environment or ill-health to any person
- SI 6 of 2007 (Environmental Management, (Effluent and Solid Waste Disposal) Regulations, 2007
  - Provides for the licensing for solid waste disposal and waste management enterprises, including recyclers of plastic wastes and setting of waste management targets
- SI 98 of 2010 (Environmental Management (Plastic Packaging and Plastic Bottles) Regulations, 2010
  - Ban on commercial distribution of thin plastics less than 30 micrometres
  - Ban on importation, commercial distribution and use of polystyrene/styrofoam for food packaging
- The Urban Councils Act [CAP 29:15] & Rural District Councils Act [Chapter 29:13]
  - Gives local authorities governing urban and rural areas the responsibility to provide refuse collection and disposal services within their areas of jurisdiction

Policy Framework

- Vision 2030
  - master plan has been developed to guide realisation of water, sanitation, and waste management deliverables under this Vision
- National Development Strategy
  - Environmental protection, climate resilience and natural resources management as a key priorities
- Ministry of Environment, Climate, Tourism and Hospitality Strategic Plan (2021-2015)
  - Environment and Natural Resources Management
- Environmental Management Agency Strategic Plan (2021-2025)
  - Environmental Law Enforcement and Compliance.
  - Environmental Education, Community Projects including recycling initivatives
- Integrated Solid Waste Management Plan (2014-2020)
  - Vision “safe, secure and sustainable solid waste management system that transforms into a clean and healthy and environmentally friendly country by 2020”
- Environment Policy 2009



Key Interventions by government

- Promulgated Statutory Instrument 98 of 2010 (Environmental Management (Plastic packaging and Plastic Bottles) Regulations, 2010
- Ban on commercial distribution of thin plastics less than 30 micrometres (2010)
- Ban on importation, commercial distribution and use of polystyrene/styrofoam for food packaging (2010)
- Through education and training, the government is promoting alternatives to single use plastics
- The ban saw the reduction in use of thin plastic and polystyrene for food packaging by over 95%

Key Interventions by government

- A declaration by His Excellency the President of Zimbabwe of a clean-up on the 1st of every month has seen the clearance of illegal waste heaps including large quantities of plastics every month

Key Interventions by the private sector

- Setting up of recycling consortiums including PETRECOZIM in order to intensify post consumer PET recovery and recycling
- The companies behind PETRECOZIM include Delta Beverages (Pvt) Ltd, MegaPak Zimbabwe (Pvt) Ltd, Dairibord Zimbabwe (Pvt) Ltd, Schweppes Zimbabwe Ltd, Mutare Bottling Company (Pvt) Ltd, Tanganda Tea Company Ltd, Coca-Cola Central Africa (Pvt) Ltd and Martindale Trading (pvt) Ltd t/a Lyons Maid.
- Varun Beverages (PEPSI) has also joined PETRECOZIM
- Annually, PETRECOZIM recovers and recycles an average of 1,600 tonnes of PET annually

Key Interventions in the sector

- Many Community Based Organizations (CBOs) are involved in waste collection, sorting, recycling; as well as awareness and clean up campaigns.
- Some of them collect plastic paper, metal, etc., for sale to industry. The community based organizations also produce several products from waste that include: floor and shoe polish, paraffin, petroleum jelly, artifacts and liquid soap, among others

Plastic recycling in Zimbabwe

- Of the approximately 340,000 tonnes of plastic waste generated, only about 11% is recovered and recycled;
- The remainder is either burnt or buried at source, or is too soiled for sustainable and economic recycling hence it is discarded in both informal and formal dumpsites

Clear and brown PET recycling efforts in Harare City and PETRECOZIM's main product from PET recycling

Plastic recycling in Zimbabwe (contd)

- Flysterv Renewables in Tilcor industrial area, Chitungwiza recovers and recycles an average of 2,400 tonnes of PET annually

Current Gaps

- Low rate of recycling of plastic waste;
  - Highly informal collection systems
- Limited waste segregation at points of generation, transportation and disposal
  - Contamination of recoverable material
  - Increased cost of segregation
- Limited market for recycled materials
  - Depressed prices

Future Interventions

- Value addition and beneficiation of waste
- Consultations underway for a complete ban of ‘single use’ plastics as has been done in other countries such as Rwanda;
- Introduction of deposit refund systems;
- Extending producer responsibility to cover the management of waste streams; and
- Promoting product redesign for minimal environmental impact.

Conclusion

- Plastic waste generation and leakage hotspots in Zimbabwe are concentrated around urban centers, rivers, lakes, and public spaces.
- The major challenges include poor waste management, inconsistent collection services, and limited recycling capacity.
- Addressing plastic waste and leakage will require a multi-faceted approach involving policy enforcement, public education, increased recycling efforts, and greater investment in waste management infrastructure.


THANK YOU!