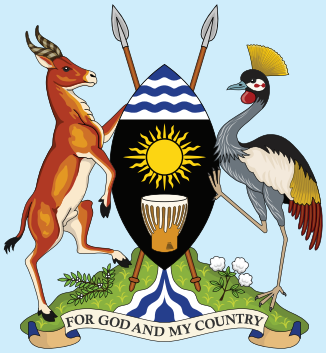


Republic Of Uganda

National Strategy For Management Of Plastic Pollution

(2023-2028)

National Environment Management Authority

REPUBLIC OF UGANDA

National Environment Management Authority (2024).

National Strategy for Promoting Plastics Circularity in Uganda 2023-2028. Kampala

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

Statement from the Minister

The world produces on average 430 million metric tons of plastics annually each year, of which over two-thirds become waste upon consumption. Research shows that under a business-as-usual scenario, plastics could emit 19% of Global Greenhouse Gas (GHG) emissions allowed under a 1.5°C scenario by 2040, essentially making the goal out of reach.

Data shows that potential litigation stemming from plastic pollution is estimated to exceed USD 20 billion in corporate liabilities in one country alone in the period 2022 to 2030. These lawsuits express the tension between different parts of society based on the profits received by the plastic industry and the costs borne by society at large but particularly by the most vulnerable, within the framework of a universally recognized human right to a clean, healthy, and sustainable environment. I want our plastic manufacturers industry in Uganda to know, that if these civil suits start in Uganda, their profits will be decimated, and their businesses gravely affected. It is therefore wise to arrest the situation before it is too late.

Because of the increase in plastic waste pollution in our environment, we see increased unexplained cancers, floods, poor water quality, poor air quality, decreased soil fertility, siltation of water bodies, death of livestock, fish, and wildlife through ingestion and entanglement, and above all, enhanced greenhouse gas emissions.

By acting now, we can save lives, and money, and avoid setbacks in the progress we have achieved to date. The circularity approach that Uganda has adopted promotes three strategies/actions i.e., Reuse, Recycle and Reorient and Diversify, that are aimed at dealing with the plastics pollution legacy and these are:

Strategy 1– Reuse: aims to accelerate the market for reusable products to transform the throwaway economy to a reuse society to create an enabling environment that ensures the reuse market has a stronger business case than the single-use plastics market.

Strategy 2 – Recycle: aims to accelerate the market for plastics recycling by ensuring recycling becomes a more stable and profitable venture. Recycling could reduce the amount of global plastic pollution by an additional 20 percent by 2040.

Strategy 3 – Reorient and Diversify: aimed at shaping the market for plastic alternatives to enable sustainable substitutions, thus avoiding replacing plastic products with alternatives that displace rather than reduce impacts. Sustainable alternatives could reduce pollution by 17 percent by 2040.

It must be noted that, we desire to leave behind a legacy free from plastics pollution and stopping further production of single-use plastics will go a long way in protecting the environment.

Hon. Sam M. Cheptoris
MINISTER FOR WATER AND ENVIRONMENT

Statement from Chairman NEMA Board of Directors

Plastic products have become increasingly important to us since they are both versatile and inexpensive. Because of their properties, plastics have found prominence in packaging, transportation, construction and furnishing industries. They have also become significantly important in the healthcare industry. Plastics however have generated wastes that have serious negative implications on the environment, climate change and health. In the last two decades, plastic production has more than doubled, while the management of plastic wastes have not improved. Therefore, accumulating plastic wastes have polluted land, water and air with serious consequences on the ecosystems, including life in them and humans. Biodiversity within the impacted ecosystems is affected and blocked drainage systems result in flooding and become breeding grounds for disease-causing vectors like mosquitoes.

The government has put in place measures to tackle the problem of plastic waste in Uganda. The National Environment Act, of 2019, and attendant regulations have provisions for managing plastic waste and plastic products, as well as Extended Producer Responsibility (EPR).

However, the environment that have been degraded by plastic waste need to be restored through effective management of plastics. Cabinet recently approved the Ten-Year Action Plan for Restoration of the Environment and Natural Resources (2021 – 2031) which is a blueprint for the holistic restoration of the environment across the nation.

We acknowledge the importance of collaboration with all stakeholders, from Government Agencies and industries to non-profit organizations and the general public, needed to achieve the goals outlined in this Strategy document. Together, we can make a significant difference in the journey towards a circular economy for plastics. I also welcome the collaboration between NEMA and Uganda Manufacturers Association, to establish an Extended Producer Responsibility Scheme for Uganda, first targeting the beverages industry.

I am pleased to present the Plastic Waste Management Strategy Document on behalf of the Environment Management Agency. This comprehensive strategy is a testament to our commitment to address the pressing issue of plastic pollution and enhance environmental sustainability.

Environment protection is a collective responsibility, and I call upon all stakeholders and citizens to join NEMA in this endeavour to create a world where plastic move continuously more efficiently to ensure a healthier environment. We desire a healthy environment for human health and prosperity.

Prof. James Okot-Okumu
CHAIRMAN, BOARD OF DIRECTORS

Foreword

Since the 1950s, both in Uganda and globally, there has been a massive increase in plastic production and consumption nationally and globally, which is set to triple by 2060 if business continues as usual. Plastic production is associated with the use of chemical additives, many of which are harmful to human health and the environment. Plastic pollution causes lethal and sub-lethal effects on a wide range of organisms in marine, freshwater, and terrestrial ecosystems.

In this regard, Uganda commissioned a study with support from UNEP, which established that Uganda produced 12,330 tons of recycled polyethylene (rPET) between 2018 and 2021. Conservative estimates predicted a 91% increase in production from 2022 to 2025, while keeping importation constant throughout the period. The quantities of recycled material were found to have been decreasing, leading to an increase in plastic waste in the environment. It was further noted that 135,804 tons of plastic waste were generated in the Kampala Metropolitan Area alone. The uncollected waste constituted 42% of the total, followed by that collected through the value chain (15%) and that collected by service providers (43%). Of the uncollected, 10% ended up in water systems.

In response to the unsustainable consumption of plastics globally, an International Negotiating Committee (INC) was convened in Uruguay to develop a globally binding instrument on plastics. The meeting was partly informed by the development of national action plans (NAPs) and strategies to generate a national baseline of plastics knowledge. In Uganda, data and information were gathered from households, institutions, manufacturers, recyclers, formal and informal sorting agents, local governments, and local council chairpersons.

Further, the study was conducted through an extensive literature review from international and national sources and expert contributions, complemented by consultations with stakeholder groups across the plastics value chain, such as regulators, producers, and distributors, among others. Relevant documents in relation to laws, policies, regulations, and strategies were obtained and reviewed to assess the extent to which waste management, and in particular, the management of plastic waste on land and in aquatic systems, was addressed. The Study informed development of this National Strategy to address the challenge at hand. The Strategy aims at changing behavior in plastic waste management, reduction of plastic waste, creation of incentives to reduce plastic waste, enhancing the sorting, collection, and recycling of plastic material and improved monitoring of plastic waste.

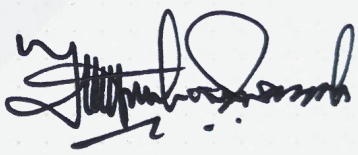
I would like to appreciate all the Ministries, Departments, Agencies, Urban Authorities, Local Governments, Private Sector, Civil Society and Academia for their valuable contribution towards the formulation of this Strategy. Special thanks goes to UNEP, for financially supporting the process and the Secretariat Team at NEMA for steering the process.

Great appreciation goes to the NEMA Board of Directors for the enormous guidance and improvement of the Strategy.

In addition, let me appreciate the efforts and contributions of the staff of NEMA, the Steering Committee, plastic producers, distributors and all those who provided information and data, during the process of developing this national strategy.

Since plastics do not break down easily in the environment (can last for over 400 years), it means that the plastics we use now will outlive us and our children for several generations to come. Therefore, beyond circularity, I call upon all the citizens and stakeholders to discourage single- use and virgin plastics with the overall goal of eliminating these in the next five years. We need to go further ahead in implementing this National Strategy by providing incentives and disincentives for and against some plastics, developing and implementing Extended Producer Responsibility (EPR) schemes, sorting waste, and raising awareness through education and information exchange with the public about dangers and desirable actions to protect the environment and human health.

For God and my country.



Barirega Akankwasah, PhD.
EXECUTIVE DIRECTOR

Acknowledgement

Preparation of this Strategy required a lot of input from several stakeholders and the following are acknowledged for their contribution:

1. United Nations Environment Program (UNEP) for availing resources and resource persons throughout the process

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Ekaterina Poleshchuk	Programme Management Officer / Statistician, SDG and Environment Statistics Unit, Science Division, UNEP

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Prof. Frank Kansiime	Makerere University, Kampala (MaK)
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Special thanks goes to the Board of Directors of NEMA for the enormous review and guidance of Management in coming up with this Strategy

Executive Summary

Plastic pollution is a global environmental challenge with severe implications for economies, ecosystems, and public health. Current strategies have not effectively addressed the increasing quantities of plastics entering the environment, and their impacts. Recognising the urgent need to address this issue, Uganda has committed to developing a circular plastics economy. A National Strategy promoting plastics circularity has therefore been developed. The National Strategy for Plastic Circularity outlines a roadmap to transform the nation's approach to plastics management, making them sustainable with economic, environmental, and public health gains.

Guided by national policies and regulations, the National Strategy for Plastic Circularity approach emphasizes waste management hierarchy, replacing Linear Economy with Circular Economy. The Strategy discusses current practices, plastics value chain, and opportunities for economic, public health and environmental benefits.

The vision for the strategy is: To establish a circular plastics economy that contributes to a clean, healthy, productive and sustainable environment. To achieve this vision, the strategy has a comprehensive framework with measurable goals and strategic objectives.

Goal

To promote environmentally sound management and prudent use of plastics in Uganda.

Strategic Objectives

SO1Mitigation: To mitigate plastic waste leakage into the environment;

SO2 Recycling and reuse: To promote recycling and reuse of existing plastics in the environment;

SO3 Reduction: To reduce plastic generation and use;

SO4 Innovation: To accelerate production and uptake of viable alternatives to plastic;

SO5 Public Awareness: To promote sustainable plastic production and consumer society.

The National Strategy is strengthened by policy and regulatory mechanisms to promote plastic circularity, and with a commitment to collaborative management. Appropriate investments in areas such as infrastructure development, capacity building, innovation and strengthening recycling were prioritised to enable best practices.

The Strategy identified actions and measures to be implemented by stakeholders involved in plastic waste management systems and these include waste minimization, waste generation, storage, collection and transportation, collection systems, recycling, waste pre-treatment and treatment, waste disposal, and institutional strategies. Recycling and recovery will be creating a secondary market for recycled plastics.

The following approaches will be used to implement the strategy (1) Public-Private Partnership; (2) Incentives in the plastic waste management cycle; (3) Extended Producer Responsibility Scheme (EPRS); (4) Public awareness campaigns and education; (5) Efficiency and valorisation in the plastic waste management cycle; (6) Transition from open burning of plastic waste to professional incineration; (7) Establishment of plastic waste operational zones; (8) Upscaling the activities of the informal sector to meet the growing demands by the recycling industries; and (9) Establishment of infrastructure and systems for phasing out of illegal dumping.

Monitoring progress of the strategy will be done with an established system with Key Performance Indicators (KPI) that will ensure transparency and accountability. This strategy will not only safeguard our environment but also create new economic opportunities in the nation.

Acronyms and Abbreviations

CBO		Community Based Organizations
ICT		Ministry of Information and Communications Technology
KACITA		Kampala City traders Association
KCCA		Kampala Capital City Authority
KPI		Key Performance Indicator
LDPE		Low density polyethylene
LGAs		Local Government Authorities
LGs		Local governments
MDAs		Ministries, Departments and Agencies/Authorities
MEMD		Ministry of Energy and Mineral Development
MoFPED		Ministry of Finance Planning and Economic Development
MOH		Ministry of Health
MoTIC		Ministry of Trade, Industry and Cooperatives
MSW		Municipal solid waste
MWE		Ministry of Water and Environment
NDP		National Development Plan
NEMA		National Environment Management Authority
NGO		Non-Governmental Organisations
NITA-U		National Information Technology Authority –Uganda
NPA		National Planning Authority
PET		Polyethylene Terephthalate
PP		Polypropylene
PPP		Public Private Partnerships
PS		Polystyrene
PUR		Polyurethane
PV-C		plastics value-chain
PVC		Polyvinyl chloride
SDG		Sustainable Development Goal
SWOT		Strength Weakness Opportunities Threats
UBOS		Uganda National Bureau of Statistics
UCC		Uganda Communications Commission
UIRI		Uganda Industrial Research Institute
UMA		Uganda Manufacturers Association
UNBS		Uganda National Bureau of Standards
UPMRA		Uganda Plastic Manufacturers and Recycler's Association
URA		Uganda Revenue Authority
USD		United States Dollars

Table of Contents

Statement from the Minister ..... *i*
Statement from Chairman NEMA Board of Directors ..... *ii*
Foreword ..... *iii*
Acknowledgement ..... *v*
Executive Summary ..... *vii*
Acronyms and Abbreviations ..... *ix*

1 Introduction **1**
1.1 Background 1

2 Country Situation Analysis **3**
2.1 The Plastic Waste Problem Analysis in Uganda 3
2.2 Gaps and challenges in plastic waste management 5
2.3 Current initiatives to address plastic waste 5
2.3.1 Approach to plastic waste management and circularity *5*
2.3.2 Collaborations *6*

3 Analysis of Strength, Weaknesses, Opportunities and Threats (SWOT) for Plastic Waste Management in Uganda **7**

4 Vision, Mission, Goal, Objectives and Guiding Principles **9**
4.1 Vision 9
4.2 Goal 9
4.3 Strategic Objectives 9
4.4 Priority Actions 9
4.5 Guiding Principles 10
4.5.1 Waste Management Hierarchy *10*
4.5.2 Circular Economy Approach to Plastic Waste Management *11*

5 Alignment to the Policy, Legal and Regulatory Framework **13**
5.1 National Policies 13
5.1.1 Vision 2040 ..... *13*
5.1.2 National Development Plan III *13*
5.1.3 The Uganda Green Growth Development Strategy 2017/18-2030/31 ..... *13*

5.1.4 The Constitution of the Republic of Uganda, 1995 14
5.1.5 The National Climate Change Policy 2015 14
5.1.6 The National Environmental Management Policy, 1994 14
5.1.7 The National Environment Act, No.5 of 2019 14
5.1.8 The Local Government Act, Cap 243 15
5.1.9 The Public Health Act, Cap 281 15
5.1.10 The Physical Planning Act, 2010 15
5.1.11 The National Environment (Solid Waste Management) Regulations, 2020 15
5.2 International Obligations 16
5.3 Alignment with International Treaties and Conventions 16
5.4 Institution 17
6 Action Plan for Implementation of the Strategy 18
6.1 General Actions and Measures 18
6.1.1 Plastic Waste Minimisation 18
6.1.2 Plastic Waste Generation 18
6.1.3 Storage of Plastic Waste 18
6.1.4 Collection and Transportation of Plastic Waste 19
6.1.5 Recycling/Reuse/Reduce 19
6.1.6 Waste Pre-treatment and Treatment 19
6.1.7 Land filling for Waste Disposal 19
6.1.8 Solid Waste Dump Sites 19
6.2 Detailed action plan for the strategy 20
7 Stakeholders' Roles and Responsibilities 23
8 Implementation Framework 25
8.1 Key approaches for implementing the strategy 25
8.2 Implementation Matrix 25
9 Monitoring and Evaluation 32
9.1 Monitoring 32
9.2 Evaluation 32
Bibliography 40

List of Tables

Table 2.1: Challenges and suggested solutions for management of plastic waste generated by different sectors/institutions. 5

Table 3.1: SWOT analysis in the Management of Plastic Pollution in Uganda 8

Table 6.1: Detailed actions and interventions for each of the strategic objectives 22

Table 7.1: Stakeholders and their responsibilities in the strategy implementation 26

Table 8.1: Implementation Framework for the Uganda National Plastic Management Strategy 30

Table 9.1: Monitoring and evaluation framework for the strategy 38

Table 9.2: Some key Monitoring and Evaluation Events of the Strategy and their estimated cost 44

List of Figures

Figure 2.1: Analysis of the factors that lead to plastic waste pollution and the effects of plastic waste to human health and the environment in Uganda 4

Figure 4.1: Proposed waste management system (adopted from GGGI Strategy 2022). 12

Figure 4.2: The concept of a circular economy 13

Figure 5.1: Plastics Circularity Strategy Implementation Institutional Structure 18

1 Introduction

1.1 Background

Plastics are industrially manufactured synthetic molecules or polymers[1], of various kinds and characteristics depending on the desired use. Plastics are an integral part of modernity, offering various uses and versatility in numerous applications, *inter alia* packaging, containers, utensils and healthcare. However, the extensive use of plastics has given rise to pressing concerns of plastic wastes and the severe implications on the economy, environment and public health, on a global scale. Plastics are already present in different ecosystems like soil, lakes, rivers and oceans in sufficient levels to cause long-term impacts on earth. People are exposed, with severe health implications to plastics through feeding on aquatic foods like fish, snails, mussels, crabs, prawns etc., that are already infiltrated by microplastics. Plastics have known adverse health effects on humans, such as cardiovascular diseases[2]. Plastics can also be in the air we breathe and have human health impacts[3]. The linear approach to plastic, production-use-disposal, is no longer feasible and has led to unmanageable volumes of waste, pollution of land and water, carbon emissions, and harms to humans and wildlife.

Indiscriminate disposal of waste is largely due to limited awareness, inadequate infrastructure, and lack of enforcement of laws and regulations. There is also lack of mechanisms to force manufacturers of plastics to take responsibility of their products at the point of consumption/ use. Investments in the waste sector in the form of human resources capacity development, infrastructure and financing of operations is very limited.

In response to the challenge posed by plastics, the concept of plastics circularity is being adopted on a global scale. The main focus of plastic circularity is on creating a closed-loop system that maximises use, recycling and reuse of plastics while at the same time minimising environmental impacts. The strategy for plastic circularity is a holistic approach that use methods such as

1 FAO. (2017). Microplastics in fisheries and aquaculture. Status of knowledge on their occurrence and implications for aquatic organisms and food safety, ISBN 978-92-5-109882-0.

2 Jaimes, R., Swiercz, A., Sherman, M., Muselimyan, N., Marvar, P. J., & Posnack, N. G. (2017). Plastics and cardiovascular health: phthalates may disrupt heart rate variability and cardiovascular reactivity. Am J Physiol Heart Circ Physiol, 313, 1044–1053.

3 Wright, S. L., & Kelly, F. J. (2017). Threat to human health from environmental plastics Time to pull our heads from the sand. Thebmj, 4334(September 2017), 1–2. https://doi.org/10.1136/bmj.j4334.

mitigation, avoidance, recycling, reuse, reduction, innovation and public awareness, as sustainable solutions.

This document outlines the key principles and objectives of the National Plastic Circularity Strategy. This Strategy aims to reduce plastic wastes, promote responsible production, promote responsible consumption, and root the transition towards a circular economy for plastics. It also sets standards for Uganda, which all stakeholders are required to implement with a view to conserving the environment and safeguarding health. The strategy provides environmentally sound plastic waste management best practices. It also puts in place a strategy through which different actor in the plastic industry can come together to ensure minimum wastes in production. It is essential for policymakers, businesses and the community to collaborate in adopting the Plastic Circularity Strategy for realigning the lifecycle of plastics to achieve a more sustainable development. The following sections will provide a deeper understanding of plastics management in Uganda, our strategic objectives, actionable initiatives, and the anticipated impacts of the Plastic Circularity Strategy.

2 Country Situation Analysis

2.1 The Plastic Waste Problem Analysis in Uganda

The annual global production of plastic has doubled in the last 20 years and as a result the amount of plastic waste has also doubled[4]. Uganda plastics constitutes 4% of total wastes, 42% of which are improperly disposed. About 10% enter water and 20% on land or burned. Kampala metropolitan, cities and municipalities in Uganda are the major sources of plastics and plastic wastes. About 1% of the uncollected plastic wastes get into the urban stormwater drainage systems causing blockage and floods during heavy rainfall. Sorting of plastics from wastes which is still low, is done by both informal, feeding the recycling industries in the value chain. Retail shops, homesteads and markets are the major sources of plastic waste, but there is limited and rudimentary management for the wastes produced. There is need for measures to address the problems of plastic waste generation and release into the environment.

Most people in the country are not aware of the challenges associated with improper use and dispersal of plastics; thus, they are not concerned about proper plastic waste disposal or aquatic littering. However, some members of the population are aware of the dangers of plastics to public health and the environment. Due to lack of appropriate infrastructure, plastic wastes are predominantly improperly disposed with the other municipal wastes, with serious implications for the environment and public health.

Despite some level of awareness, the problem of irresponsible use and disposal of plastic waste persists, leading to negligent careless waste generation, and indiscriminate disposal. Unplanned settlements along the shores of water bodies, in wetlands, and in deforested areas have enhanced the effects of damages caused by plastic wastes to the aquatic ecosystems. Underlying drivers of plastic waste pollution include the following;

i. lack of awareness: a number of the population members are not aware of the dangers of inappropriate disposal of plastic wastes;

ii. limited Regulations: Weak Regulations and lack of enforcement, related to production, consumption/usage and disposal;

4 Draft National Strategy to prevent plastic pollution EPA. 2023

iii. single-use Plastics: Widespread use of single-use plastics, such as carry/carrier -bags, bottles, and packaging;

iv. inadequate recycling: insufficient recycling facilities lead to the accumulation of plastics in solid waste dump sites and the environment;

v. poor waste management: under-resourced waste management and infrastructure leading to inadequate collection and poor disposal;

vi. Increasing population: Rapidly increasing population means increasing demand and consumption and increasing waste generation putting pressure on management infrastructure and waste management system in general.

Figure 2.1 presents a situation analysis of the plastic pollution problem in Uganda; the drivers that lead to plastic pollution and the impacts to human health and the environment.

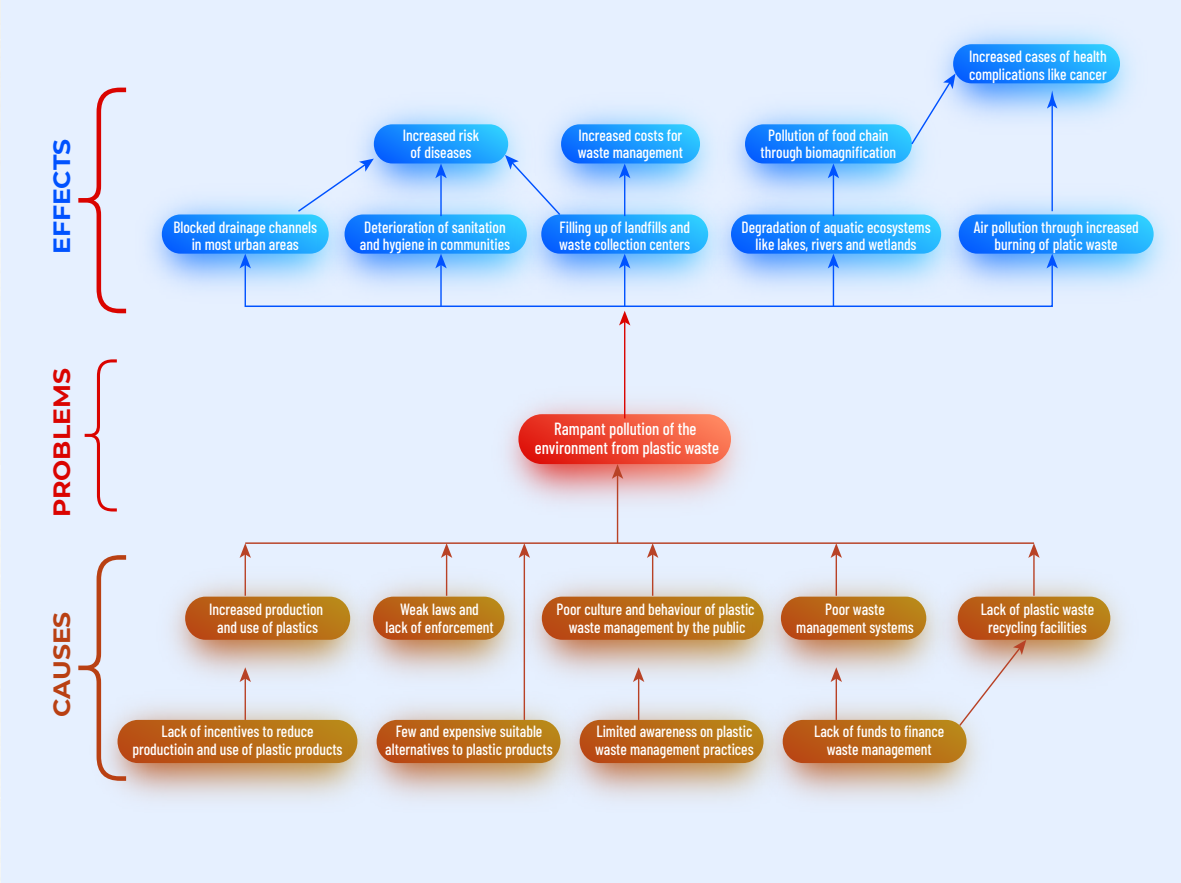

Figure 2.1: Analysis of the factors that lead to plastic waste pollution and the effects of plastic waste to human health and the environment in Uganda

2.2 Gaps and challenges in plastic waste management

Plastics are used across different sectors in Uganda hence generating a range of plastic waste types. The sectors therefore have different challenges while managing their plastic waste. A summary of the challenges faced by the different sectors, i.e., medical, education, businesses, institutions etc., are given in Table 2-1.

Table 2.1: Challenges and suggested solutions for management of plastic waste generated by different sectors/institutions.

Institutions	Challenges in management of plastic wastes
Medical	• Air pollution during burning of nonmedical plastic waste • Delayed collection of medical plastic waste • Inadequate tools and vehicles used in plastic waste management
Schools	• Limited knowledge on plastic waste handling • Proper plastic waste management procedures are inadequate • Air pollution during burning • No garbage skips / bins for plastic waste disposal
Urban/ municipality	• No designated plastic waste dumping areas • Limited funding for timely collection of waste / plastic waste • Limited awareness on dangers of plastic wastes • Laxity in law enforcement on plastic waste management(Limited enforcement on banning or control of plastic wastes) • Noncompliance with management plans for solid wastes and plastic waste by municipal, urban and rural councils • Lack of tools and vehicles used in plastic waste management
Markets and trade areas	• No designated plastic wastes dumping sites • Limited awareness on dangers of plastic wastes • No management plan for plastics dumping at urban councils • Plastics are not collected regularly • Unwillingness to adhere to proper plastic waste disposal practices • No designated tools and vehicles for plastic waste management
Households	• Lack of designated waste collection sites • No awareness on management of plastic wastes • No suitable alternatives to packaging, serving food, collecting water • Open burning of wastes that is harmful to humans and the environment
Agriculture	• Farmers are not aware of dangers of plastics on soil fertility and environment • Farmers have no management measures available on handling of plastic wastes • Farmers receive most of the agrochemicals and drugs in plastic packaging and have no clear management procedures for the plastic wastes generated

2.3 Current initiatives to address plastic waste

2.3.1 Approach to plastic waste management and circularity

Uganda plays a role in reducing global waste pollution, and plastic pollution is a major global problem. Having ratified the relevant international agreements and taken on the obligations,

Uganda guided by Vision 2040, NDPIII and key Policies, Laws and Regulations, has implemented some actions to reduce waste and its impacts. Some of the waste management actions have been collaborative efforts by stakeholders across the value chain of plastic products. These efforts were guided by the Principle of Environment Management (NEA;5-2P and Part VIII Waste Management)[5]. The government in collaboration with Local Governments, Cities, NGOs, CBOs/CSOs, industry, academia, and the public will build a circular plastics economy and reduce plastic pollution. The National Strategy is designed to prevent plastic pollution in the life cycle-production, consumption, and end of life stages of plastic products, following the pathway towards a more sustainable resource management, that is the concept of circular economy that offers an alternative to the current linear "take, make, use, dispose" economy model, and aims to keep resources in use for as long as possible, to extract maximum value from them whilst in use, and to recover and regenerate products and materials at the end of their service life.

2.3.2 Collaborations

It is a partnership between other stakeholders in the waste sector, the National Environment Management Authority (NEMA) launched a campaign aimed at reducing plastic waste through the 3Rs – Recycle, Reduce, and Reuse. This is also being done through Television programs that promote the campaign in collaboration with media houses. Public dialogues involving various stakeholders is another important avenue for informing key stakeholders from Government ministries and agencies, development partners, civil society, the private sector such as Uganda Breweries, Stanbic Bank and Vivo Energy, and the media.

5 National Environment Act No.5 of 2019

3 Analysis of Strength, Weaknesses, Opportunities and Threats (SWOT) for Plastic Waste Management in Uganda

This section analyses the situation of plastic waste management in Uganda, by identifying the strengths, weaknesses, opportunities and threats (SWOT) in order to inform the strategy as shown in Table 3-1. This SWOT analysis provides a snapshot of the internal and external factors that can influence the success of a plastic circularity strategy.

Table 3.1: SWOT analysis in the Management of Plastic Pollution in Uganda.

	Positive	Negative
Internal	**Strength**	**Weakness**
	1. **Public support:** There is widespread awareness and support for reducing plastic waste, aiding in policy implementation. 2. **Government regulations:** Favourable regulations to promote sustainable practices. 3. **City Ordinances and Municipal by-laws:** building on the existing Ordinances and Municipal By-laws to promote sustainable practices. 4. **Recycling Industry:** The strategy to increase recycling level, supporting Extended Producer Responsibility, increasing plastic recovery rates. 5. **Plastic waste collection centres:** Existing informal and formal collection centres for plastic wastes to build on. 6. **Collaboration with Local Governments and Cities:** Partnership to build capacity and improve infrastructure for waste management	1. **Consumer behaviour:** Some people resist behavioural changes and may continue to use non-recyclable plastics, resist sorting and dispose irresponsibly. 2. **Resource-intensive recycling:** Certain plastic types are difficult and expensive to recycle. 3. **High costs:** Implementing the strategy may be costly; recycling infrastructure, collection facilities, monitoring of waste facilities. 4. **Lack of infrastructure:** Limited facilities in all cities make plastic waste management less effective. 5. **Awareness Building:** Inadequate public sensitization on the effects of plastic waste to environment, human and animal health

	Opportunity	Threat
External	1. **Increasing public awareness:** Opportunity to educate the public on the significance of plastic waste reduction and recycling. 2. **Market demand for sustainable products:** There is a growing demand in the country for eco-friendly products, that creates opportunities for recycled plastics and also alternatives to plastics. 3. **Technological advancements:** Opportunities for use of more cost-effective recycling methods and innovative solutions. 4. **Circular economy initiatives:** Support for circular economy models can bolster plastic recycling. 5. **Institutional adoption of sustainable waste management:** Institutions like Hospitals being able to manage their own waste professionally.	1. **Global increase in plastic production:** Increase in plastic production could exacerbate the plastic waste problems. 2. **Competition from new cheap plastics:** Low-cost plastics may deter people from the use of recycled materials. 3. **Limited government support:** limited funding, weak policy or facilitations could hinder the strategy's progress. 4. **Environmental concerns:** Recycling processes may raise environmental and health concerns. 5. **Lack of management plans by urban councils:** Urban councils lack management strategies for solid waste. 6. **Uncontrolled imports of plastics:** Lack of monitoring cross border entry of plastics into the country may hamper the effectiveness of the circularity strategy

This strategy will build on the strength of the current waste management system in the country and on what has already been done to improve on the management of plastic waste in Uganda. Such strengths exist for example in the National Environment Act No.5 of 2019 which provides measures to manage wastes (Sec.5, 2p; Part III, 96-102) and regulate manufacture of plastic (Sec. 76).

4 Vision, Mission, Goal, Objectives and Guiding Principles

4.1 Vision

To contribute to a clean, healthy, productive and sustainable environment.

4.2 Goal

To promote environmentally sound management and prudent use of plastics in Uganda.

4.3 Strategic Objectives

The overall objective of the National Plastic Circularity Strategy is to provide guidance for sustainable plastic waste management in Uganda with a view to ensure a healthy, safe and secure environment. This strategy is to be implemented through five strategic objectives as follows:

SO1 Mitigation: To mitigate plastic waste leakage into the environment;

SO2 Recycling and Reuse: To promote recycling and reuse of existing plastics in the environment;

SO3 Reduction: To reduce plastic generation and use;

SO4 Innovation: To accelerate production and uptake of viable alternatives to plastic;

SO5 Public Awareness: To promote sustainable plastic production and consumer society.

4.4 Priority Actions

Several actions that should be taken so as to achieve the given strategic objectives during the five-year period of the strategy have been proposed. These actions in form of interventions offer integrated solutions for management of plastic waste in Uganda. The priority actions for the strategy will be;

a. Carry out awareness campaigns;

b. Infrastructure development including provision of skips in all schools, churches, MDAs, Parliament, and community/public areas, e.g., streets, open markets, sports/recreation fields, and permanent trade areas, such as supermarkets and arcades.

c. Introduce, implement, and enforce Extended Producer Responsibility.

d. Review, updated and enforce the laws, regulations and policies on plastic production and use (policy formulation) for example, enforcing the no-litter policy with an agreed penalty for offenders as stipulated in the National Environment Act no. 5 of 2019 and an incentive for the informers/whistle-blowers.

e. Ban single-use (SUP) and carry bags (where alternatives exist).

f. Provide incentives to users and producers of eco-friendly plastics alternatives

g. Research and development of plastics alternatives and recycling technology

h. Promote use of plastic alternatives

4.5 Guiding Principles

4.5.1 Waste Management Hierarchy

The waste management hierarchy has been used for a long time to guide decision-making on the prioritization of waste prevention and management initiatives, as illustrated in Figure 4.1. The hierarchy provides a generalized priority order for managing waste once it has been collected. It places importance on the need for interventions applying circular economy that promote waste prevention, reduction, reuse, and recycling. The hierarchy emphasizes prevention as the most preferred and uncontrolled dumping as the least preferred option in waste management.

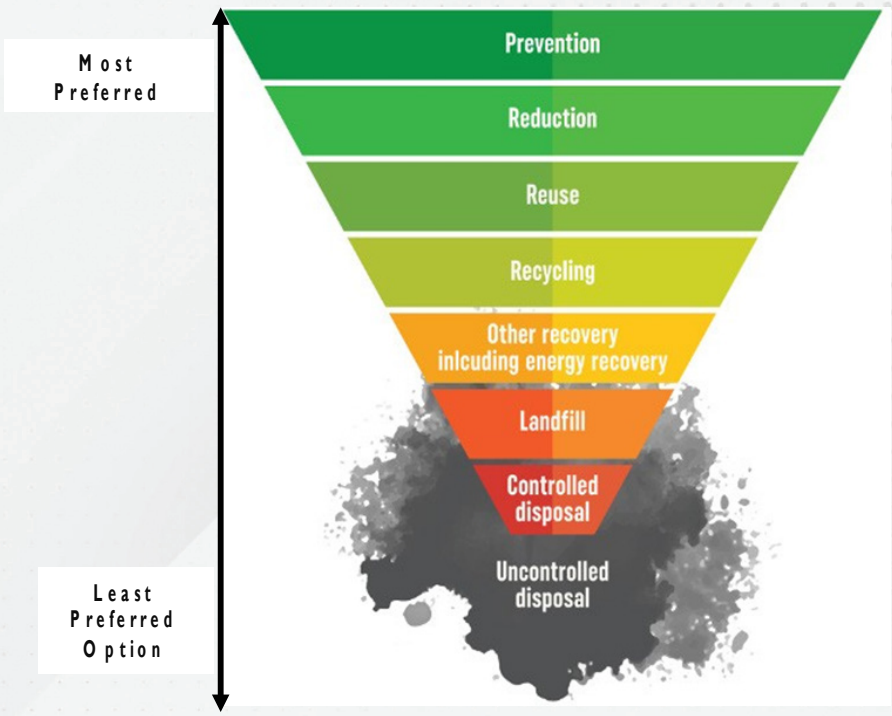

Figure 4.1: Proposed waste management system (adopted from GGGI Strategy 2022).

4.5.2 Circular Economy Approach to Plastic Waste Management

This strategy aims to transition towards a circular economy approach to plastic waste management. It is hinged on three principles, i.e., reduce plastic waste and pollution through product design; retain resources and products in use, and regenerate and preserve natural systems. A model of a "circular economy" seeks to make efficient use of natural resources by promoting plastic waste prevention, reusing, and recycling, which reduces the amount of plastic waste that needs to be disposed (Figure 42) The result will be a cleaner and healthier environment, less pollution associated with waste, the minimization of Green House Gas (GHG) emissions, social and gender inclusion, a reduced likelihood of floods during the rainy season and a stronger economy.

The current recovery of recyclables is mainly conducted informally by waste pickers. Waste picking provides important livelihood opportunities for poor and marginalized people while supplying raw materials to industry, hence encouraging participation. Current plastic waste picking activities have technical limitations and pose high health and safety risks to workers, including waste pickers. The circular economy provides for the 3 Rs (i.e., reduce, reuse and recycle) where materials continue to be used in circularity, that is, a waste becomes a raw material for the next cycle of production. Hence, future waste management operations, while improving occupational health and safety, represent an important strategic goal.

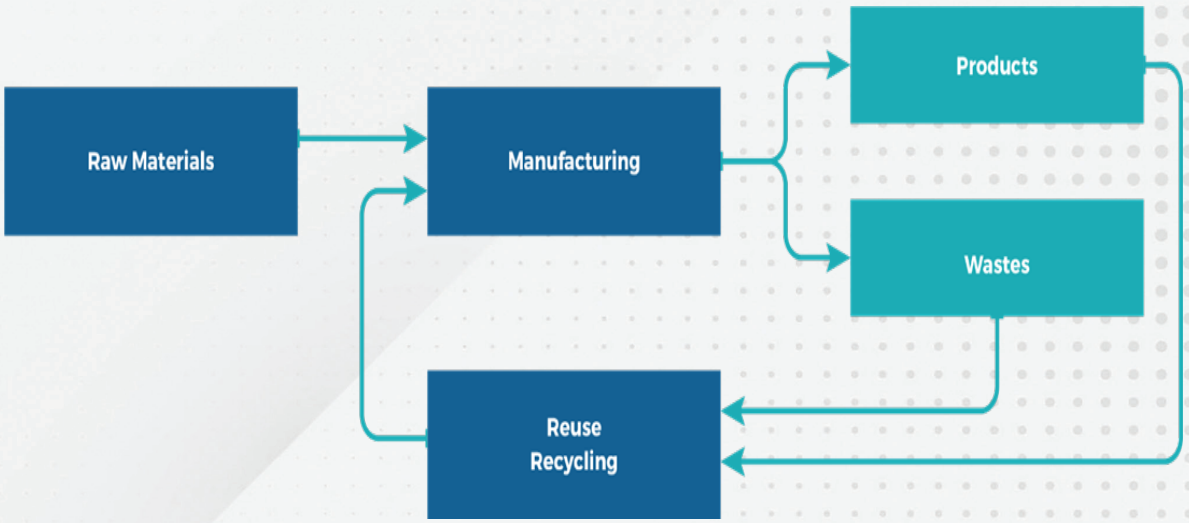

Figure 4.2: The concept of a circular economy

5 Alignment to the Policy, Legal and Regulatory Framework

5.1 National Policies

5.1.1 Vision 2040

Vision 2040 sets goals to achieve by the year 2040 by Uganda ranging from political, economic, social, energy, water, and environment. The document provides the goals and targets to be achieved in order to realize the desired socioeconomic transformation. Environment and Natural Resources are considered in Chapter 5; Section 5.8 (293, 302). Pollution from poor waste disposal is emphasized as one of the reasons leading to environmental degradation. Waste infrastructure is therefore central in socioeconomic development. This strategy is an intervention in line with the Vision 2040 strategic objectives and targets on waste management.

5.1.2 National Development Plan III

The Third National Development Plan (NDPIII) 2020/21 – 2024/25 published in January 2020 has a Vision: *"A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years"*. NDPIII identified eighteen (18) programs and notable among them is **Sustainable Urbanization and Housing.** Under section 347 (vi) is to improve the efficiency of solid waste collection from 30 to 50%. This Strategy on Plastic Circularity is to transform waste management towards circular economy, for increased efficiency in waste management.

5.1.3 The Uganda Green Growth Development Strategy 2017/18-2030/31

The main objective of the strategy is to provide guidance and describe the governance framework on priorities and strategic interventions for implementation of the green economy. It points towards pollution reduction as a contribution to improve the welfare and ensuring economic growth. Under the strategy, the planned green cities emphasise comprehensive physical planning and efficient waste management. This plastic waste management strategy will help contribute towards the setting up and development of the sustainable cities in Uganda.

5.1.4 The Constitution of the Republic of Uganda, 1995

The Constitution of the Republic of Uganda is the supreme law of the country providing the legal and regulatory framework on all aspects including the environment. The Ugandan Constitution in Articles 39 and 41 which provide that everyone has a duty to maintain a sound environment, and that every person in Uganda has a right to a healthy and clean environment and article 245 for the protection and preservation of the environment. This Strategy therefore is a good response to the guidance provided by the national Constitution.

5.1.5 The National Climate Change Policy 2015

The National Climate Change Policy provides for effective waste management as one of the priorities to curb climate change, through actions such as waste-to-energy projects. This is aimed at reducing the large quantities of wastes. The Policy also promotes waste sorting to enable management of waste streams more sustainably. The current strategy builds on the strategies that are suggested under the National Climate Change Policy to ensure proper management of plastic waste in Uganda.

5.1.6 The National Environmental Management Policy, 1994

The overall goal is to *'achieve sustainable social and economic development which maintains or enhances environmental quality and resource productivity on a long-term basis that meets the needs of the present generation without compromising the ability of future generations to meet their own.'* In here, cross-sector policy objectives, guiding principles, strategies and key initial actions needed for the management of *inter alia*, land use, pollution and waste management are stated.

5.1.7 The National Environment Act, No.5 of 2019

The National Environment Act (NEA) provides for sustainable management of the environment. The Act provides in Section 3 for the right to a decent environment including the obligation of every person to maintain and enhance the environment. Section 5(p) provides for Circular Economy. Section 26 provides that Urban and District Councils shall be responsible for the management of the environment under their jurisdiction subject to the provisions of the Act and any other applicable law. Section 76 provides specifically for the management of plastics. Part II-Waste Management, in Sections 96-102 provide for the management of waste including Extended Producer Responsibility (Sec. 98) and Part X provides for Environment and Social Assessment. The Act under Section 96 (1) provides that a person who generates or handles waste shall be responsible for its proper management in accordance with this Act. The waste generator shall take all necessary steps to prevent pollution arising from waste management. The Act includes the authority to make byelaws and ordinances in consultation with NEMA. Management of waste is vested in the Local Governments. This Strategy is therefore adequately supported in the supreme environmental law of the nation.

5.1.8 The Local Government Act, Cap 243

The Local Government Act devolves responsibility for service delivery of a number of functions to Local Government (Districts/Cities/Towns/Municipalities) and to Lower Local Government Councils (sub-counties/divisions). Included in these functions are the management of waste and sanitation. Section 39 empowers an Urban Council to make Byelaws consistent with the Constitution or any Act of Parliament, or an Ordinance of the District council or a Byelaw by a higher council. NEMA collaboration with the Local Governments and Urban Councils in the implementation of this Strategy is elaborated well in the Strategy document itself.

5.1.9 The Public Health Act, Cap 281

The Act states that it is the duty of Local Authorities to maintain cleanliness and prevent nuisances; and they are required to take all lawful and reasonably practicable measures to maintain an area in a clean and sanitary condition as provided in section 55 of the Act. The Health Sector therefore, forms a major sector to collaborate with in the implementation of this Strategy.

5.1.10 The Physical Planning Act, 2010

The Act as amended by the *Physical Planning (Amendment) Act, No.20 of 2020* provides for a National Physical Planning Board whose duties include ensuring the coordination of the preparation of physical development plans made by local governments; and to approve urban or district physical development plans. The urban physical planning committee is required to determine applications **relating *inter alia* to waste dumping sites** which may have an injurious impact on the environment. In accordance with section 33 of the Act, no development shall be carried out in a planning area without obtaining permission from a physical planning committee. This Act will be determining the suitable sites for establishing centres for receiving collected plastic waste for recycling.

5.1.11 The National Environment (Solid Waste Management) Regulations, 2020

The regulations expound further on the National Environment Act, 2019, provisions on solid waste management and deal comprehensively with solid waste management in Uganda. The regulations apply, amongst other things, to the generation, collection, transportation, storage, treatment, and disposal of waste and to all waste management facilities. Regulations 26-33 provide for the management of domestic and municipal waste. A local government is required under regulation 27 to put in place measures for the management of domestic and municipal waste generated within its jurisdiction. Regulation 38 provides that every person has a duty to minimize the generation of plastic waste and shall find and make use of alternative packaging materials that do not persist in the environment, as well as prevent littering of the environment by plastics (sub-regulations (a and b). The Regulations will contribute to guidance and enforcement of laws that will support the Strategy.

5.2 International Obligations

As a member state, Uganda is mandated to work towards achieving the 17 Sustainable Development Goals (SDGs) and 169 targets. As such, the current strategy on plastic waste management has been developed and is fully aligned with the priorities set out under the SDGs and will contribute toward the achievement of the following Sustainable Development Goals (SDGs);

SDG 1 (No poverty). **SDG 3:** (Good health and wellbeing). The Plastic waste management strategy will contribute to target 3.9 on ensuring healthy lives and promote well-being for all at all ages by 2030. **SDG 5** (Gender equality). **SDG 6** (Clean water and sanitation). The strategy will contribute to the achievement of target 6.3 on improving water quality by reducing pollution. **SDG: 9** (Industry, innovation, and infrastructure). Through target 9.3 strives to increase the access of small-scale industrial and other enterprises, to financial services. The Strategy on plastic circularity will strive to create ways in which small scale manufacturers and recycling industries of plastics in cities and towns access financial services that are affordable. Target 9.4; by 2030, to upgrade infrastructure for resource-use efficiency and adoption of clean and environmentally sound technologies and industrial processes. **SDG 11** (Sustainable cities and communities), Target 11.6 strives to reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management. This strategy is a step in the right direction as it will tackle problems related to plastic waste in Uganda. **SDG 12** (Responsible consumption and production). Target 12.5, waste reduction prevention and the 3Rs. The plastic circularity strategy is hinged on the principles of a circular economy that look at prevention, reduction, recycling and reuse of plastic waste. **SDG 13** (Climate action), target 13.2 on integrating climate change measures into national policies, strategies and planning that is in line with the concept of circularity. **SDG 14** (Life below water) and **SDG 15** (Life on land), that safeguard these ecosystems from damage by waste pollution.

5.3 Alignment with International Treaties and Conventions

This Strategy adequately responds to the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal. Recent amendments adopted by the 188 parties to the Basel Convention, as of January 1, 2021, require that mixtures of plastic waste, consisting of polyethylene (PE), polypropylene (PP), and/or polyethylene terephthalate (PET) be banned from export, except when they are destined for separate recycling of each material in an environmentally sound manner and are almost free from contamination and other types of waste. In 2019, the plastic waste partnership was set up in order to mobilise resources so as to realise the goal of improving and promoting environmentally sound management of plastic waste at the global, regional and national level and prevent and minimize its generation so as to significantly reduce and in the long-term eliminate the discharge of plastic waste and microplastics into the environment.

5.4 Institution

The national institution structure for implementing the plastic circularity is shown in Figure 5-1. Clarifying the structure of institutional arrangements can help to formalise the functional roles of organisations that will participate in the implementation of the Strategy. An illustrative structure provides an overview of the roles and responsibilities.

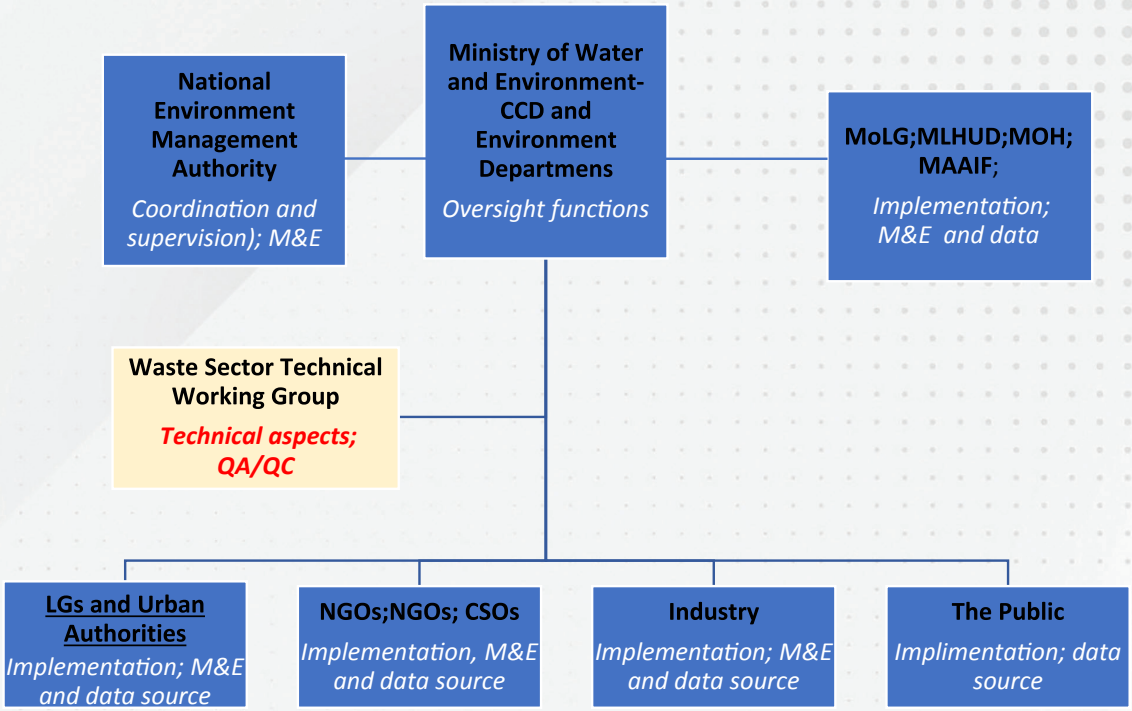

Figure 5.1: Plastics Circularity Strategy Implementation Institutional Structure

6 Action Plan for Implementation of the Strategy

This strategy is intended to address issues that were identified in the national source inventory[6] and stakeholder engagements. This national plastic waste management strategy incorporates the following: minimization or reduction, reusing and recycling, pre-treatment or treatment, and disposal.

6.1 General Actions and Measures

In order to have a sound environment, there are actions and measures that need to be implemented by stakeholders along the plastics value chain. These actions and measures include waste minimization, storage, collection, and transportation; recycling; pre-treatment and treatment; disposal. For detailed actions and measures, refer to Table 6-1 and also the waste management hierarchy.

6.1.1 Plastic Waste Minimisation

Minimizing plastic waste generation is an important component of achieving a sound plastic waste management system. Minimization is attained through the use of Cleaner Production techniques to reduce waste generation at the source. This includes the use of cost-effective processes and product design that minimize waste generation, management of materials, and production procedures.

6.1.2 Plastic Waste Generation

The generation of plastic waste is primarily linked to economic growth and urbanization. The types of waste produced change according to lifestyles. Some plastic wastes are hazardous and, therefore, need special treatment.

6.1.3 Storage of Plastic Waste

Storage of plastic waste is a method of keeping materials after use and before they are discarded, prior to collection and final disposal. Proper storage of waste allows for better planning of the frequency of collection and an opportunity to sort the waste and recover any useful materials for recycling. The storage vessels of plastic wastes before disposal are categorised into:

6 NEMA (2023). The National Plastic Waste Inventory

(i) Small containers: household containers and trash bins;

(ii) Large containers: communal bins, oil drums; Shallow pits; and Communal depots—walled or fenced-in areas.

6.1.4 Collection and Transportation of Plastic Waste

Waste collection and transport is the action of picking wastes from storage areas and taking the wastes to treatment sites or centres. The waste is taken away either together with the storage containers (usually waste bags) or transferred into appropriate receptacles for haulage to their final destinations for treatment. The final destinations are locations such as the Solid Waste Disposal Sites, Incinerators, Recycling Industry, and open dumps. Solid wastes are collected and transported in containment to avoid environment effects.

6.1.5 Recycling/Reuse/Reduce

Recycling is the process of converting waste materials into new products of the same grade or lower. Recycling retains materials much longer and reduces raw materials and energy demands in the manufacturing and protects the environment of new products. In addition to the aforementioned, generally waste recycling offers the following benefits: environmental protection; economic benefits; resource conservation, reduction in pollution and community engagement.

6.1.6 Waste Pre-treatment and Treatment

Waste is treated chemically, physically, or biologically so that once it is disposed of, it will have no negative effects on the environment. Treatment, in particular, requires expertise in the specific application of the technologies. Currently, hazardous waste such as medical (and plastic) waste is collected and disposed off by contracted companies. Many health facilities, however, incinerate some of their hazardous waste within some major hospitals.

6.1.7 Land filling for Waste Disposal

Landfilling is one of the methods that can be applied in places where land is less populated. It is mostly applied to the remains of recycling and some directly generated wastes that are degradable. Land filling requires the application of recommended procedures.

6.1.8 Solid Waste Dump Sites

These are sites for largescale solid waste disposal. The dump sites receive wastes untreated or pre-treated. Such sites can be managed or unmanaged and all are meant to allow natural breakdown or decomposition of waste mainly under anaerobic conditions. Solid Waste Dump Sites (SWDS) release Greenhouse Gases (GHG) mainly methane into the atmosphere. Carbon dioxide is released to some extent as well.

6.2 Detailed action plan for the strategy

For each strategic objective, the strategy identifies priority actions and corresponding interventions to address plastic waste management problems and the responsible institutions for implementation. The detailed priority actions and interventions are outlined in Table 61.

Table 6.1: Detailed actions and interventions for each of the strategic objectives

SN	Strategic Objective	Priority Action (s)	Interventions	Responsible Actors
SO1	Mitigation: To mitigate plastic waste leakage into the environment;	Policy and legislative framework review	Review and harmonise legislation and policies on plastic production, use, storage and disposal	MWE, NEMA
		Research and development	Identify and promote source reduction measures through product innovation and design	NEMA, Research Institutions, Manufacturers
		Infrastructure development	Provide equipment for plastic waste collection and segregation especially at busy markets and institutions	Municipalities and other Local Authorities, NEMA, Market authorities, NGO's
		Policy formulation		NEMA, Environmental Police
		Carry out awareness campaigns	Intensify waste segregation campaigns at producer, market and user level.	NEMA, Municipalities and other Local Authorities, Manufacturers, NGOs.
			Carry out intensive awareness campaigns on proper waste disposal.	NEMA, NGO's, Municipalities and other Local Authorities, Manufacturers
		Policy formulation	Support municipalities and local authorities in drafting Ordinance and Bylaws that guide plastic waste management.	NEMA, Ministry of Justice and Constitutional Affairs, Municipalities and other Local Authorities.
			Enforce the littering policy and plastic management measures within the National Environment Act of 2019.	NEMA, Environmental Police

SN	Strategic Objective	Priority Action (s)	Interventions	Responsible Actors
SO2	Recycling and Reuse: To promote recycling and reuse of existing plastics in the environment	Introduce, implement, and enforce Extended Producer Responsibility.	Establish an Extended Producer Responsibility Scheme (EPRS)	NEMA, Manufacturers, UBOS
		Provide incentives to users and producers of eco-friendly plastics alternatives	Incentivise public-private partnerships on recycling of plastic waste	NEMA, MoFPED
			Reduce taxes on efficient technologies in plastic waste recycling	Parliament of Uganda, URA, NEMA, MWE
		Carry out awareness campaigns	Create awareness on the dangers of plastic waste	NEMA, Municipalities and other Local Authorities, NGO's
		Research and development	Establish criteria for documentation, recycling and reuse of plastics	NEMA, MWE
		Carry out awareness campaigns	Enhance mobilisation campaigns for use of recovered/ recycled plastic products	NEMA, Municipalities and other Local Authorities,
		Policy formulation	Increase the scale of private and public investment in recycling of plastic waste	NEMA, Ministry of Finance
		Research and development	Promote entrepreneurial skills in recycling and reuse of existing plastics in the environment e.g., use in concrete	NEMA, Research Institutions, Manufacturers, NGO's
			Promote energy recovery from plastic waste through sustainable incineration processes for industrial use.	NEMA, Research Institutions, Manufacturers, NGO's, Financing agencies
SO3	SO3 Reduction: To reduce plastic generation and use	Ban single-use (SUP) and carry/carrier bags	Ban importation of single use plastics	MWE, NEMA
			Phase out manufacturing of single-use plastics	MWE, NEMA, MoTIC
		Provide incentives to users and producers of eco-friendly plastics alternatives	Create incentives for manufacturing and importation of alternatives to single use plastics	URA, NEMA, MoFPED, Parliament of Uganda
		Carry out awareness campaigns	Create awareness on the dangers of plastics	NEMA, NGO's
			Promote use of eco-friendly alternatives especially in packaging of food items	NEMA, MWE, Manufacturers, NGO's, Financing agencies
		Use of plastic alternatives	Encourage use of recyclable plastic materials	NEMA, Manufacturers

SN	Strategic Objective	Priority Action (s)	Interventions	Responsible Actors
SO4	Innovation: To accelerate production and uptake of viable alternatives to plastic	Provide incentives to users and producers of eco-friendly plastics alternatives	Reduce taxes on alternatives to plastics while increasing taxes on plastic products	Parliament of Uganda, URA, MoFPED, NEMA, MWE
		Provide incentives to users and producers of eco-friendly plastics alternatives	Give tax holidays to manufacturers of alternatives to plastic	Parliament of Uganda, URA, MoFPED
		Carry out awareness campaigns	Promote use of eco-friendly alternatives to plastics	NEMA, NGO's
		Infrastructure development	Establish drinking water refill stations in busy public places like markets and institutions	NEMA, NWSC, NGO's, Food item manufacturers, Local authorities
		Research and development	Encourage research and innovation in plastic alternatives through collaboration with research institutions	NEMA, Research institutions, Manufacturers
SO5	Public Awareness: To promote sustainable plastic production and consumer society	Policy formulation	Establish guidelines for manufacturers to carry out life cycle assessments for their plastic products	NEMA, Financing agencies, NGO's
		Introduce, implement, and enforce Extended Producer Responsibility.	Draft guidelines for EPR scheme for producers and users of plastic items especially for packaging food items	NEMA, Manufacturers
		Carry out awareness campaigns	Promote the use and production of biodegradable plastic items for packaging	NEMA, Research institutions, UBOS, NGO's, Manufacturers
		Carry out awareness campaigns	Carry out awareness campaigns with plastic manufacturers on the opportunities in producing eco-friendly plastic products	NEMA, NGO's

7 Stakeholders' Roles and Responsibilities

The strategy provides an efficient plastic waste management system to implement circularity targeting plastic value chain in the country. Using a collaborative approach, it accommodates all stakeholders in the plastic industry, including government, industry and business, private sector, non-governmental organisations, learning and research institutions, and the community. The stakeholder matrix is below in Table 7-1.

Table 7.1: Stakeholders and their responsibilities in the strategy implementation

S. No	Level of administration/ governance	Responsibility by level of governance
1	Central Government	i. Prioritize plastic waste management. ii. Create specific budget allocations for plastic waste disposal at administrative units, including provisions for hardware and software (reduced taxes on imports, skips, specialized vehicles, incinerators, and adequate salaries and wages) to local government authorities and the private sector for the management of plastic waste. iii. Set up, review, and enforce legislation periodically that promotes plastic waste management. iv. Build new and improve existing plastic waste management infrastructure to service unplanned and underserved areas. v. Provide for awards for the best plastic waste managers.
2	Ministry of Finance, Planning and Economic Development	i. Prioritize plastic waste management in the budgeting process. ii. Address the key barriers to the use of the circular economy approach in the management of plastic waste iii. Provide fiscal incentives to promote reuse and recycling of plastic waste
3	Ministry of Water and Environment	i. Prioritize funding for the respective agencies and institutions to develop plastic waste management schemes and facilities. ii. Formulate and supervise the implementation of policies for the conservation of the environment. iii. Provide policy direction on plastic waste management initiatives countrywide, including public-private partnerships (PPP). iv. Enhance funding to NEMA for benchmarking, capacity building, and technology transfer in plastic and other waste management. v. Provide awards for the best plastic waste managers.

S. No	Level of administration/ governance	Responsibility by level of governance
4	Ministry of Trade, Industry and Cooperatives	i. Formulate and implement policies that promote the development of domestic and international polluter pays principle and a plastic circular economy. ii. Provide awards for the best plastic waste managers.
5	Local Government Authorities	i. Draw up action plans for the implementation of applicable plastic waste management systems within municipalities; ii. Develop funding proposals for development partners; consideration as a financing mechanism; iii. Put in place measures for enhanced public-private partnerships (PPP); iv. Benchmark on best practices for appropriate technologies in plastic waste management by cities, municipalities, and town councils; v. Undertake periodic clean-up activities within their municipalities; vi. Provide equipment for waste segregation and transport systems; vii. Zone the waste operational areas; viii. Facilitate plastic waste management to ensure all waste is transported to the designated waste disposal sites in a timely manner;
	National Environment Management Authority (NEMA)	i. Set up, review, and enforce legislation periodically that promotes plastic waste management. ii. Undertake benchmarking, capacity building, and technology transfer in plastic and other waste management. iii. Undertake research and development in plastic management.
	Ministry of Lands, Housing and Urban Development (MLHUD)	I. Develop policies that ensure sustainable land management, especially in regard to plastic pollution of land surface.
	Industry	I. Design and produce environmentally benign plastic products. II. Actively engage in promoting circularity of plastic products. III. Align the production, distribution and consumption of plastic products to the principle of Reduce, Reuse and Recycle (3R) IV. Engage in research and development regarding plastics and their products while ensuring environmental sustainability.
	Civil Society (e.g., NGOs, trade and industry associations)	I. Advocate for policy changes, II. raise awareness of plastic pollution and promote sustainable consumer behaviours. III. Coordinate with other stakeholders to develop solutions to plastic pollution.
	Private Sector (e.g., waste management companies)	I. Carry out the business of management of plastic waste (Collect, sort, recycle). II. Educate the public on proper waste management practices.
	The Public	I. Influence positively the demand for sustainable plastic products. II. Reduce plastic consumption. III. Recycle plastic waste.

8 Implementation Framework

8.1 Key approaches for implementing the strategy.

The strategy will be implemented using the following approaches:

1. Strategic alignment and recognition of partners through a public private partnership;
2. Introduction of incentives in the plastic waste management cycle (generation, storage, collection, transportation, treatment and disposal);
3. Introduction of Extended Producer Responsibility Scheme (EPRS), public awareness campaigns and education;
4. Establishment of efficiency and value addition in the plastic waste management cycle;
5. Compliment the input from NGO's, CBO's and other private public activities;
6. Phase out open burning of plastic waste;
7. Establishment of plastic waste operational zones;
8. Upscale the activities of the informal sector to link up with the existing formal recycling industries; and
9. Establishment of infrastructure and systems for residual waste management through a stepwise phasing out of illegal and crude dumpsites to establish sanitary landfills.

8.2 Implementation Matrix

The implementation matrix for achieving the strategic objectives with activities, key performance targets and key performance indicators (KPI), the timeframe, outcomes and main actors is presented in Table 8-1.

Table 8.1: Implementation Framework for the Uganda National Plastic Management Strategy

Area of focus	Action	Key performance Targets	Key Performance Indicators	
Strategic objective one: To do away with plastic waste leakage into the environment				
Policy formulation	Review and harmonise legislation and policies on plastic production, use, storage and disposal	Have all environmental management related policies and laws reviewed and harmonized to tackle plastic waste management by 2027	Number of Environmental Management policies and laws reviewed	
	Enforce the littering policy and plastic management measures within the National Environment Act of 2019	Streets and environment free of plastic waste litter	Streets free of plastic and waste litter	
	Support municipalities and local authorities in drafting policies that guide plastic waste management	To ensure that every Town and municipality has policies and laws that guide plastic waste management	Number of local authorities supported	
Research and development	Identify and promote source reduction measures through product innovation and design	Promote innovations, research and product design for plastics	-Number of innovations developed -Number of manufacturers involved in research and innovation development	
Infrastructure development	Intensify waste segregation campaigns at producer, market and user level.	Improve waste collection and segregation in markets and institutions	-Number of sensitization campaigns carried out in markets and institutions -Number of waste collection items distributed and used correctly	
	Provide equipment for plastic waste collection and segregation especially at busy markets and institutions	Have enough well labelled plastic waste collection and segregation equipment	Number of well labelled plastic waste collection and segregation equipment	
Carry out awareness campaigns	Carry out intensive awareness campaigns on proper waste disposal	To improve the general knowledge and perception of population regarding waste disposal	Number of people sensitized -Number of successful sensitization campaigns carried out	
SUB TOTAL				
Strategic objective two: To promote recycling and use of existing plastics in the environment				
Introduce, implement, and enforce Extended Producer Responsibility.	Establish an Extended Producer Responsibility Scheme (EPRS)	To have a system in places that guides manufacturers with management of their product up to the consumer	-Number of manufacturers embracing the EPRS -Guidelines for the EPRS	

	Time frame (years)					Outcomes	Actors	Cost in Million UGX
	1st	2nd	3rd	4th	5th			
						Environmental Management policies and laws reviewed	Parliament of Uganda, NEMA, MWE, NGO's	1,200
						The cleanliness of streets improved	NEMA, Environmental Police, Local Authorities	450
						Policies that guide plastic waste management	NEMA, Ministry of Justice and Constitutional Affairs, NGO's Local Government Authorities	1,500
						-Improved design and resource use reduction -Reduced plastic waste in factories	Manufacturers, NEMA, MWE, Research institutions	2,500
						Improved waste collections and segregation in markets and institutions	Markets, Institutions like schools and hospitals, NEMA, NGO's, Local Government Authorities	850
						Improved waste collections and segregation in markets and institutions	Markets, Institutions like schools and hospitals, NEMA, NGO's, Local Government Authorities	1,800
						A population that is sensitized as regards waste disposal and management	NEMA, Media, Local Authorities	2,000
								10,300
						EPRS guidelines developed	NEMA, Manufacturers	900

Area of focus	Action	Key performance Targets	Key Performance Indicators	
Provide incentives to users and producers of eco-friendly plastics alternatives	Incentivise public-private partnerships on recycling of plastic waste	To improve participation in recycling of plastics through improved financing mechanisms	Number of recycling plants in place through PPP	
	Reduce taxes on efficient technologies in plastic waste recycling	To have access to cheap technology and equipment for recycling of plastic waste	Number of recyclers with equipment	
Carry out awareness campaigns	Create awareness on the dangers of plastic waste	To create awareness on the dangers of plastic waste	Number of successful awareness campaigns carried out	
	Enhance mobilisation campaigns for use of recovered/recycled plastic products	To have a market for recycled plastics products	Number of mobilization campaigns carried out	
Policy formulation	Increase the scale of private and public investment in recycling of plastic waste	To improve participation in recycling of plastics through improved financing mechanisms	Number of recycling plants in place through PPP	
Research and development	Promote innovate use of plastics waste e.g., use in concrete	To increase on the uptake of plastic waste through reuse	Number of innovations using plastic waste	
	Promote energy recovery from plastic waste through sustainable incineration processes for industrial use	To increase on the uptake of plastic waste through reuse	Number of plastic incineration plants	
	Establish criteria for documentation, recycling and reuse of plastics	To increase and improve on the information and data collection regarding plastic recycling	Copy of criteria with guidelines	
SUB TOTAL				
Strategic objective three: To reduce plastic generation and use				
Ban single-use plastic (SUP) and career bags	Ban importation of single use plastics	To reduce on the use of single-use plastics in Uganda	Ban on importation of single-use plastics imposed	
	Phase out manufacturing of single-use plastics	To reduce on the use of single-use plastics in Uganda	Ban on manufacture of single-use plastics imposed	
Provide incentives to users and producers of eco-friendly plastics alternatives	Create incentives for manufacturing and importation of alternatives to single use plastics	To have many alternatives for single use plastics on the market	Number of alternatives in place	
Carry out awareness campaigns	Create awareness on the dangers of plastics	To create awareness on the dangers of plastic waste	Number of successful awareness campaigns carried out	
	Promote use of eco-friendly alternatives especially in packaging of food items	To increase on use of eco-friendly plastic alternatives	Number of campaigns promoting use of eco-friendly alternatives	

	Time frame (years)					Outcomes	Actors	Cost in Million UGX
						Increased recycling of plastics in Uganda	NEMA, Manufacturers, MoFPED	700
						Taxes of recycling equipment reduced	NEMA, URA, Parliament of Uganda	100
						Awareness on the dangers of plastic waste improved	NEMA, NGO's Local Authorities, Media	500
						Market for recycled plastic products created	Manufacturers, NEMA, Media	200
						Increased recycling of plastics in Uganda	NEMA, Manufacturers, MoFPED	300
						Reduced plastic waste in the environment	NEMA, Local Authorities, Communities	600
						Reduced plastic waste in the environment	NEMA, Industries	1,500
						More information and data on plastic waste recycling collected	NEMA, MWE, Manufacturers	100
								4,900
						Reduced plastic waste from single-use plastics	NEMA, MWE, Environmental Police	0
						Reduced plastic waste from single-use plastics	NEMA, MWE, Environmental Police	0
						Reduced plastic waste from single-use plastics	NEMA, MoTIC, Manufacturers	300
						Awareness on the dangers of plastic waste improved	NEMA, NGO's Local Authorities, Media	500
						Increased use of eco-friendly alternatives to plastics	NEMA, NGO's Local Authorities, Media	250

Area of focus	Action	Key performance Targets	Key Performance Indicators	
use of plastic alternatives	Encourage use of recyclable plastic materials	To increase on use of recyclable plastic materials	Number of campaigns promoting use of recyclable plastic materials	
SUB TOTAL				
Strategic objective four: To increase the production and uptake of viable plastic alternatives				
Provide incentives to users and producers of eco-friendly plastics alternatives	Reduce taxes on alternatives to plastics while increasing taxes on plastic products	To increase on use of eco-friendly plastic alternatives	Number of tax reductions done	
	Give tax holidays to manufacturers of alternatives to plastic	To reduce manufacture of plastics	Number of manufacturers with tax holidays	
Carry out awareness campaigns	Promote use of eco-friendly alternatives to plastics	To increase on use of eco-friendly plastic alternatives	Number of campaigns promoting use of eco-friendly alternatives	
Infrastructure development	Establish drinking water refill stations in busy public places like markets and institutions	To reduce plastic bottle waste in the environment	Number of drinking water refill stations installed	
Research and development	Encourage research and innovation in plastic alternatives through collaboration with research institutions	To enhance research and development in plastic production and waste management	Publications on research done Number of innovations developed	
SUB TOTAL				
Strategic objective five: To establish sustainable plastic production and consumer society				
Policy formulation	Establish guidelines for manufacturers to carry out life cycle assessment for their plastic products	To encourage the use of life cycle assessment in the manufacture of plastics	Copy guidelines developed	
Introduce, implement, and enforce Extended Producer Responsibility.	Draft guidelines for EPR scheme for producers and users of plastics items especially for packaging food items	To streamline sustainable manufacture and management of plastics products	Copies of guidelines	
Carry out awareness campaigns	Promote the use and production of biodegradable plastic items for packaging	To increase on the production of biodegradable plastic products	Number of biodegradable plastic manufacturers in place	
	Carry out awareness campaigns with plastic manufacturers on the opportunities in producing eco-friendly plastic products	To carry out a total of five campaigns each year to raise awareness on the production of eco-friendly plastic products	Number of campaigns done	
SUB TOTAL				
GRAND TOTAL				

	Time frame (years)	Outcomes	Actors	Cost in Million UGX
		Increased use of recyclable plastic materials	NEMA, NGO's Local Authorities, Media	250
				1,300
		Reduced use of plastics	NEMA, URA, Parliament of Uganda	50
		Number of alternatives produced increased	NEMA, URA, Manufacturers, MoTIC	0
		Increased use of eco-friendly alternatives to plastics	NEMA, NGO's Local Authorities, Media	250
		Reduced plastic bottles waste in the environment	NEMA, NWSC, Water bottling companies	2,500
		Reduced use of plastics	NEMA, Research institutions, MWE	1,000
				3,800
		Guidelines on life cycles assessment developed	NEMA, Uganda Cleaner Production Center, MWE	300
		EPRS guidelines developed	NEMA, Uganda Cleaner Production Center, MWE, Manufacturers	350
		Increased manufacture of biodegradable plastic products	NEMA, Media, MoTIC,	Embedded in other campaigns above
		Production of eco-friendly plastics increased	NEMA, Manufacturers, MoTIC	200
				850
				21,150

9 Monitoring and Evaluation

9.1 Monitoring

The main monitoring and evaluation parameters are summarised in Table 9-1.

This will be accomplished as follows:

1. Environmental monitoring will be a key component of this strategy because poor plastic waste management has direct and indirect effects on public health and the environment and must be monitored.
2. Monitoring essential parameters for environmental quality to provide basic information on the levels of deviation from the set environmental standards.
3. Plastic manufacturing industries will monitor their own activities through internal audits.
4. The government, through NEMA and Local Government Authorities, will monitor the activities of the plastics industry/sector through environmental monitoring systems (EMS).
5. Based on the monitoring results, an analysis of the progress of the strategy's implementation will be done in line with targets and time frames.
6. A review of the progress with relevant stakeholders will be conducted, and the results will be submitted to an independent Evaluation Committee for identification of areas of success and failure (impact evaluations).
7. The contributory factors to success and failures will then be identified and addressed accordingly.
8. In all cases the necessary actions will be taken to address identified monitoring issues.

9.2 Evaluation

This will be realized as follows:

1. Assessing progress of implementing the required improvements or actions, and how far the strategic objectives are being achieved through government and the public sector, as well as the community.

2. Regular data collection exercises on plastic waste generation and disposal rates in cities, divisions, municipalities, or local governments.
3. Analysis of data to link the information to population trends, economic growth, and other social monitoring parameters or drivers.
4. Assembling information in a format that will enable understanding and provide the basis for planning future plastic waste management needs, such as recycling, materials recovery and landfill facilities.
5. Analysis of information to inform on the effectiveness of strategies already put in place, such as public awareness and education programs.
6. Assessing the needs for improvements will be in the areas of producer responsibility, investments, service provision, and public awareness, among others as outlined in this strategy.
7. A review of the Strategy will be done every five years.

Table 9.1: Monitoring and evaluation framework for the strategy

Area of focus	Action	Key Performance Indicators	Outcomes	Data type	Monitoring frequency	Evaluation frequency	Data source
Strategic objective one: To do away with plastic waste leakage into the environment							
Policy formulation	Review and harmonise legislation and policies on plastic production, use, storage and disposal	Number of Environmental Management policies and laws reviewed	Environmental Management policies and laws reviewed	Primary data	Annually	2.5-5 years	Government reports
	Enforce the littering policy and plastic management measures within the National Environment Act of 2019	Streets free of plastic and waste litter	The cleanliness of streets improved	Primary data	Quarterly	2.5-5 years	Short surveys
	Support municipalities and local authorities in drafting policies that guide plastic waste management	Number of local authorities supported	Policies that guide plastic waste management	Secondary data	Quarterly	2.5 -5 years	Reports

Area of focus	Action	Key Performance Indicators	Outcomes	Data type	Monitoring frequency	Evaluation frequency	Data source
Research and development	Identify and promote source reduction measures through product innovation and design	-Number of innovations developed	-Improved design and resource use reduction	Secondary and primary data	Annually	2.5-5 years	Reports, Key informant interviews
		-Number of manufacturers involved in research and innovation development	-Reduced plastic waste in factories	Primary data	Annually	2.5-5 years	Short surveys on factories, Reports on plastic manufacturing
Infrastructure development	Intensify waste segregation campaigns at producer, market and user level	-Number of sensitization campaigns carried out in markets and institutions	Improved waste collections and segregation in markets and institutions	Secondary data	Annually	2.5-5 years	Reports
		-Number of waste collection items distributed and used correctly		Secondary data	Annually	2.5-5years	Reports from monitoring
	Provide equipment for plastic waste collection and segregation especially at busy markets and institutions	Number of well labelled plastic waste collection and segregation equipment	Improved waste collections and segregation in markets and institutions	Secondary	Annually	2.5- 5years	Reports
Carry out awareness campaigns	Carry out intensive awareness campaigns on proper waste disposal	Number of people sensitized	A population that is sensitized as regards waste disposal and management	Primary data	Quarterly	2.5-5 years	Surveys
		-Number of successful sensitization campaigns carried out		Secondary	Quarterly	2.5-5 years	Reports
Strategic objective two: To promote recycling and use of existing plastics in the environment							
Introduce, implement, and enforce Extended Producer Responsibility	Establish an Extended Producer Responsibility Scheme (EPRS)	-Number of manufacturers embracing the EPRS	EPRS guidelines developed	Secondary data	Quarterly	2.5-5 years	Reports
		-Guidelines for the EPRS		Secondary data	In the first year	2.5-5 years	Guidelines copies and reports

Area of focus	Action	Key Performance Indicators	Outcomes	Data type	Monitoring frequency	Evaluation frequency	Data source
Provide incentives to users and producers of eco-friendly plastics alternatives	Incentivise public-private partnerships on recycling of plastic waste	Number of recycling plants in place through PPP	Increased recycling of plastics in Uganda	Primary and secondary data	Annually	2.5-5 years	Short surveys and reports
	Reduce taxes on efficient technologies in plastic waste recycling	Number recyclers with equipment	Taxes of recycling equipment reduced	Secondary data	Annually	After 2.5 years	Reports
Carry out awareness campaigns	Create awareness on the dangers of plastic waste	Number of successful awareness campaigns carried out	Awareness on the dangers of plastic waste improved	Secondary data	Annually	2.5- 5 years	Reports
	Enhance mobilisation campaigns for use of recovered/ recycled plastic products	Number of mobilization campaigns carried out	Market for recycled plastic products created	Secondary data	Annually	2.5-5 years	Reports
Policy formulation	Increase the scale of private and public investment in recycling of plastic waste	Number of recycling plants in place through PPP	Increased recycling of plastics in Uganda	Secondary data	Annually	2.5-5 years	Reports
Research and development	Promote innovate use of plastics waste e.g., use in concrete	Number of innovations using plastic waste	Reduced plastic waste in the environment	Secondary data	Annually	2.5 -5 yeas	Reports
	Promote energy recovery from plastic waste through sustainable incineration processes for industrial use	Number of plastic incineration plants	Reduced plastic waste in the environment	Secondary data	Annually	2.5-5 years	Reports
	Establish criteria for documentation, recycling and reuse of plastics	Copy of criteria with guidelines	More information and data on plastic waste recycling collected	Secondary data	Annually	2.5- 5 years	Reports

Area of focus	Action	Key Performance Indicators	Outcomes	Data type	Monitoring frequency	Evaluation frequency	Data source
Strategic objective three: To reduce plastic generation and use							
Ban single-use plastic (SUP) and career bags	Ban importation of single use plastics	Ban on importation of single-use plastics imposed	Reduced plastic waste from single-use plastics	Secondary data	Annually	2.5 years	Reports
	Phase out manufacturing of single-use plastics	Ban on manufacture of single-use plastics imposed	Reduced plastic waste from single-use plastics	Secondary data	in the first year	2.5 years	Reports
Provide incentives to users and producers of eco-friendly plastics alternatives	Create incentives for manufacturing and importation of alternatives to single use plastics	Number of alternatives in place	Reduced plastic waste from single-use plastics	Secondary data	Annually	2.5-5 years	Reports
Carry out awareness campaigns	Create awareness on the dangers of plastics	Number of successful awareness campaigns carried out	Awareness on the dangers of plastic waste improved	Secondary data	Annually	2.5 -5 years	Reports
	Promote use of eco-friendly alternatives especially in packaging of food items	Number of campaigns promoting use of eco-friendly alternatives	Increased use of eco-friendly alternatives to plastics	Secondary data	Annually	2.5 -5 years	Reports
use of plastic alternatives	Encourage use of recyclable plastic materials	Number of campaigns promoting use of recyclable plastic materials	Increased use of recyclable plastic materials	Secondary data	Annually	2.5- 5 years	Reports
Strategic objective four: To increase production and uptake of viable plastic alternatives							
Provide incentives to users and producers of eco-friendly plastics alternatives	Reduce taxes on alternatives to plastics while increasing taxes on plastic products	Number of tax reductions done	Reduced use of plastics	Primary and secondary data	Annually	2.5-5 years	Surveys and Reports
	Give tax holidays to manufacturers of alternatives to plastic	Number of manufacturers with tax holidays	Number of alternatives produced increased	Primary and secondary data	Annually	2.5-5 years	Surveys and Reports

Area of focus	Action	Key Performance Indicators	Outcomes	Data type	Monitoring frequency	Evaluation frequency	Data source
Carry out awareness campaigns	Promote use of eco-friendly alternatives to plastics	Number of campaigns promoting use of eco-friendly alternatives	Increased use of eco-friendly alternatives to plastics	Secondary data	Annually	2.5-5 year	Reports
Infrastructure development	Establish drinking water refill stations in busy public places like markets and institutions	Number of drinking water refill stations installed	Reduced plastic bottles waste in the environment	Primary and secondary data	Annually	2.5-5 years	Reports
Research and development	Encourage research and innovation in plastic alternatives through collaboration with research institutions	Publications on research done	Reduced use of plastics	Secondary	Annually	2.5-5 years	Reports
		Number of innovations developed		Secondary data	Annually	2.5-5 years	Reports
Strategic objective five: To establish sustainable plastic production and consumer society							
Policy formulation	Establish guidelines for manufacturers to carry out life cycle assessment for their plastic products	Copy guidelines developed	Guidelines on life cycles assessment developed	Secondary	First year	2.5 years	Reports
Introduce, implement, and enforce Extended Producer Responsibility	Draft guidelines for EPR scheme for producers and users of plastics items especially for packaging food items	Copies of guidelines	EPRS guidelines developed	Secondary	First year	2.5 years	Reports

Area of focus	Action	Key Performance Indicators	Outcomes	Data type	Monitoring frequency	Evaluation frequency	Data source
	Promote the use and production of biodegradable plastic items for packaging	Number of biodegradable plastic manufacturers in place	Increased manufacture of biodegradable plastic products	Secondary data	Annually	2.5-5 years	Reports
Carry out awareness campaigns	Carry out awareness campaigns with plastic manufacturers on the opportunities in producing eco-friendly plastic products	Number of campaigns done	Production of eco-friendly plastics increased	Secondary data	Annually	2.5- years	Reports

Key actions of this strategy and their estimated costs are presented in Table 9-2.

Table 9.2: Some key Monitoring and Evaluation Events of the Strategy and their estimated cost

Main M & E parameter	Description	Output	Lead Agency	Other Key Actors	Time frame	Cost in Million UGX for 5 yrs
Management of plastic waste and other waste	Coordinating all activities related to management of plastic waste and other waste	A report on activities related to management of plastic waste and other waste	MWE, NEMA	MoFPED, MoTIC	Bi-annual	500
Statistics on plastic waste management, including other waste	Collecting and analysing statistics on plastic waste management, including other waste for proper monitoring of national waste management policies	Statistical abstracts on plastic including other waste management	MWE, NEMA	UBOS, UNBS, NPA, URA and CBOs	Bi-annual	750
Qualified firms	Engaging qualified firms to collect data and statistics on plastic waste and other waste management	Statistical abstract on qualified firms to collect data and statistics on plastic waste and other waste management	MWE, NEMA	UBOS, UNBS, NPA, URA and CBOs	Annual	500
Data management system on plastic waste and other waste	Develop a data management system on plastic waste and other waste to include plastic recyclers, manufacturers and associations	A data management system on plastic waste and other waste to include plastic recyclers, manufacturers and associations	MWE, NEMA	URA, UNBS, UBOS	Annual	600

Main M & E parameter	Description	Output	Lead Agency	Other Key Actors	Time frame	Cost in Million UGX for 5 yrs
Capacity of plastic waste and other wastes handling companies in data management	Increasing capacity of plastic waste and other wastes handling companies in data management on plastic waste and other waste	A report on Capacity built on plastic waste and other wastes handling companies in data management	MWE, NEMA	UBOS, UNBS, NPA, URA and CBOs	Bi-Annual	450
Surveillance systems on indiscriminate plastic waste and other wastes disposal	Creating surveillance systems on indiscriminate plastic waste and other wastes disposal	Surveillance systems on indiscriminate plastic waste and other wastes disposal	MWE, NEMA	UNBS, URA, UBOS, city and urban authorities, LGAs	Bi-annual	250
Annual NEMA Steering Committee/ Forum	Overall review for results	High level status report on implementation of strategy. Recommendation report	MWE, NEMA	UNBS, URA, UBOS, LGAs	Annual	500
Environmental monitoring	Environmental monitoring (e.g. of quantities and types of plastic wastes)	Environmental monitoring Report	MWE, NEMA	UBOS, City and urban authorities, LGAs	Annual	500
Deviation from the set standards	Monitor levels of deviation on the set standards of environmental quality	Report on levels of compliance of set standards of environmental quality	MWE, NEMA	UNBS, LGAs, plastic manufacturing industries/ associations	Annual	500
Environmental audits	Conduct internal and external audits	Environmental monitoring systems	MWE, NEMA	UNBS, LGAs, plastic manufacturing industries/ associations	Annual	300
Successes and failures with relevant stakeholders and independent review committee	Review of the progress with relevant stakeholders and independent evaluation committee for identification of areas of success and failure	Report and actions on areas of success and failure	MWE, NEMA	UNBS, UBOS, LGAs, plastic manufacturing industries/ associations	Annual	600
Review strategy at end of its 5th year	Review the strategy	Report and revise strategy	MWE, NEMA	Steering Committee	End of 5th year	60
TOTAL						**5510**

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