

MINISTRY OF ENVIRONMENT AND FORESTRY

National Sustainable Waste Management Policy

February, 2021

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2021

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LIST OF ACRONYMS

COK	Constitution of Kenya 2010
COG	Council of Governors
EAC	East Africa Community
EII	Energy Intensive Industries
EMCA	Environmental Management and Coordination Act
GHG	Green House Gases
MRF	Materials Recovery Facility
MEF	Ministry of Environment and Forestry
NEMA	National Environment Management Authority
NDC	Nationally Determined Contribution
NAMA	Nationally Appropriate Mitigation Action
NIMES	National Integrated Monitoring and Evaluation System
EPR	Extended Producer Responsibility
POPs	Persistent Organic Pollutants
UNEA	United Nations General Assembly
VAT	Value Added Tax

Preface

Article 42 of the Constitution of Kenya 2010 states that every person in Kenya is entitled to a clean and healthy environment and has a duty to safeguard and enhance the Environment. According to Vision 2030, Kenya aims to be a nation living in a clean, secure and sustainable environment hence lessen by half all environment related diseases.

It is in this context that the Vision 2030 recognized that efficient and sustainable waste management systems are required as the country develops into a newly industrialized state by 2030. This has triggered the need to have a robust waste management system by developing Policy, Bill and strategies towards achieving sustainable waste management and a clean healthy environment for all.

Waste Management is the responsibility of everyone (including but not limited to Individuals, Communities, Businesses, Industries, and Government). The planning and delivery of waste management is the direct responsibility of counties and communities, while the National government provides the framework for waste management by setting policies, regulations and standards. The Government recognizes the importance of providing a new framework through the development of a National Sustainable Waste Management Policy.

Extensive public participation was done across the country during the development and drafting of this policy. Several consultative meetings were held in various regions during which it was observed that the waste challenges were similar in counties.

The policy development process adopted a circular economy approach whereby waste is regarded as a resource and hence the need to extract maximum value from it before disposal. It is with this spirit that the Government prioritized development of a policy that will assist the public and institutions to advance towards a 7R oriented society, by Reducing; Rethinking; Refusing; Recycling; Reusing; Repairing and Refilling their waste.

The policy aims at addressing Waste management through regulations, guidelines, standards and strategies in the country. These waste management tools will be developed at both national and county level.

In conclusion, I wish to sincerely thank all the experts involved in coming up with this document, those who worked tirelessly to gather and assemble information that made it possible to produce this National Sustainable Waste Management Policy.



Mr. Keriako Tobiko, C.B.S., S,C,
Cabinet Secretary,
Ministry of Environment and Forestry.

Acknowledgements

The formulation of the Sustainable Waste Management Policy, undertook an intensive, inclusive, consultative and participatory approach since it needed holistic situational assessment and reliable information and data as well as consensus building. The waste sector, by its nature, attracts professionals and interest groups from multiple disciplines thus a balance of views, needs and interests would only be achieved through a policy formulation process with unimpeachable stakeholder involvement and public participation. This was heightened by the fact that Environment sector is one of the main pillars of social and economic growth of the country, as well as the constitutional provisions on the extent of consultations and involvement.

To this extent, a wide range of institutions and professionals drawn from Government Departments and Agencies, private sector, academia and civil society participated in the process. We, therefore, wish to appreciate and recognize their worthwhile contributions through spirited efforts and sacrifices that made it possible for this policy to attain the standards it has. It may not be possible to thank each institution and individual for their singular sacrifices, but allow me to take singular honour to extend gratitude to some of them.

Before I do that, I wish to collectively recognize the collaboration and support extended to the Ministry of Environment and Forestry by Council of Governors, Development Partners, Private Sector Institutions, Civil Society Organizations, Academia and Experts groups.

Our most special thanks and recognition goes to the Green Growth Project, financed by Danida, for Financial support to this process. The Ministry acknowledges the role played by Technical officers and experts review teams and legal officers drawn from the various institutions for reviewing earlier drafts of this policy. Special thanks also go to the staff of Ministry of Environment and Forestry. We are deeply indebted to you. We are equally indebted to the leadership and staff of various Environmental Sector Institutions, for their participation and demonstrated commitment.

We wish to register gratitude for the professional input and personal commitment of the members of the National Steering Committee (NSC). The committee members included; Dr. Ayub Macharia, Anastasia Muiti, Rodney Omari, Isaiah Maina, Cynthia Sakami, Godfrey Wafula, Daniel Mututho, Anthony Wainaina, Faith Ngige, Georgina Wachuka, Patroba Joshua, Caren Sande, Anne Syombua, Ruby Okoth, Augustine Kenduiwo, Olivia Simiyu, and Florence Mwikali.

It is our hope that this policy will provide the guidelines required for legislation work, regulatory mechanism and service delivery, not forgetting the national framework for planning and implementation of waste sector undertakings. I am convinced that the policy has taken a holistic approach, encompassing all solid waste sector needs and interests.

A handwritten signature in black ink, appearing to read 'Chris Kiptoo', with a large circular flourish at the beginning.

Dr. Chris Kiptoo, C.B.S.,

Principal Secretary,
Ministry of Environment and Forestry.

Executive Summary

Waste is a resource that can be managed to achieve economic, social and environmental benefits. Addressing the waste management challenge effectively in Kenya is critical to delivering on Kenya's constitutional right to a clean and healthy environment for all, advancing the circular economy to create green jobs and wealth from the waste sector, and realisation of the nation's sustainable development goals. Sustainable waste management is also fundamental to delivery of each of the government's "Big Four" national priorities –the transformational agenda on housing, manufacturing, food and nutritional security and health care –and to Kenya's leadership in the blue economy, with its focus on creating economic growth, ensuring healthy waters and building safe communities.

This Policy will advance Kenya towards a more sustainable and circular, green economy. It will move the country towards realization of the Zero Waste principle, whereby waste generation is minimized or prevented. It will help ensure that waste is collected, separated at the source, reused and recycled, and that the remaining waste stream is destined to a secure, sanitary landfill. If proper regulatory frameworks and incentives are in place, such a system will build long-term resilience, while generating new business and economic opportunities and providing broad environmental and social benefits to all Kenyans. Effective sustainable waste management will create value from the waste stream through re-use and recycling, formalizing the waste-picker sector to improve livelihoods, improving landfill operations and management including capturing and utilizing landfill gas such as methane. Other benefits will include reducing health and environmental harms by capping landfills and closing open dumpsites, reducing plastic pollution in the marine environment, and creating new jobs in the sector, especially for youth and women, in waste collection and recycling.

As Kenya's economy and cities grow at accelerated rate, the country's waste management challenges have reached major proportions. The current poor state of waste management is a public health and environmental threat, a loss of valuable resources for job and wealth creation, and an eyesore that negatively affects tourism and the well-being of all Kenyans.

Historically, waste has been viewed solely as a problem, not as a resource and economic opportunity. The National Waste Management Policy aims to increase the value extraction from waste and thus consider waste as a resource to the Kenyan economy. If properly managed as a resource, waste recovery and recycling can create new jobs and attract new investment in a diversified waste sector. Kenya aims to transition the waste sector in every county away from low collection rates, illegal dumping and uncontrolled dumpsites to affordable waste collection, recycling and composting, and minimise waste fractions that are disposed in well-engineered and regulated landfills. Pursuant to this National Waste Management Policy the Government will establish legal frameworks and take actions that will enable Kenya

to harness and incentivize large scale investment in the waste recovery and recycling industry in Kenya.

This Policy aims to create an enabling regulatory environment for Kenya to effectively tackle the waste challenge by implementing sustainable, waste management that prioritizes waste minimization and contributes to a circular economy. Practically, this can be achieved through the adoption of a waste hierarchy that includes reducing or preventing waste generation at the source and reuse of materials; effective and affordable waste collection in all neighbourhoods, where waste is to be separated at source ensuring that recyclable materials are not contaminated by or mixed with waste. To achieve this this all waste collected should first go to a materials recovery facility (MRFs) for sorting. At the MRF, materials extracted from waste will be managed in order of priority, with the first priority being recycling of all recyclable materials and composting of organic waste. Residual waste should then be treated to reduce toxicity and impact on public health and the environment. Treated residual waste should be destined for final disposal engineered landfill or waste-to-energy facility that is properly regulated and controlled to ensure the health of workers and neighbouring communities.

This policy also supports the creation of the planning, finance, technical and governance capacities that county governments need to effectively deliver on their mandate under the Constitution of Kenya 2010 to be the lead actors in delivering sustainable waste management services to their constituents.

Sustainable waste management is a devolved function under the Constitution of Kenya. The 47 county governments have the lead role in delivering sustainable waste management services. However, the national government must provide an enabling policy and regulatory environment to facilitate the counties to effectively deliver waste management services including, facilitating inter-county cooperation under the metropolis approach, financial incentives, research, technical advice and facilitation of public awareness and education.

The suite of measures in this policy will support counties to fulfil their devolved responsibility of delivering sustainable waste management services to the public to reduce pollution, improve public health, and promote green entrepreneurship to create green jobs and wealth locally from waste collection, reuse and recycling, and compost production. The policy also guides the strengthening of institutional and governance arrangements to facilitate the practical achievement of sustainable waste management goals in every county.

The National Government will undertake various core interventions, including the enactment of national waste management legislation, implementing regulations and financial incentives to provide the mandate and framework for coordinated action. The Policy also provides a framework for sustainable waste management nationally, through implementation of zero waste and circular economy principles, and through practical planning and implementation of waste management at the county level. The

National Government should also establish and fully implement coordinated policies and regulatory frameworks to address hazardous waste, electronic waste, industrial waste, agricultural chemicals and medical waste, which have been a major source of pollution, water contamination and serious health and environmental threats.

Effective waste management will also reduce emissions of greenhouse gases, especially methane, from the waste sector, contributing to the achievement of Kenya's Paris Agreement commitments, and reducing industrial waste and non-point run off to Kenya's water bodies. It is also important that the policy and law build on public involvement in sustainable waste management and incentivize job creation and to improved livelihoods from the sector, particularly for women and youth who play a critical role in socio-economic development. The challenge of waste management affects every person and all institutions in the society. The measures set out in this policy cannot be undertaken without a collective approach to waste management challenges, through involvement of a broad range of stakeholders to effectively implement the policy for the good of the nation. This Policy therefore seeks to establish a common platform for action between all stakeholders to systematically implement sustainable waste management in Kenya.

CHAPTER ONE

SITUATION ANALYSIS

1.1. National Situation

As population increases and rates of production and consumption increase, the estimated volumes of waste generated from households, industries, agricultural services, construction, health care facilities will triple between 2009 and 2030. Kenya generates an estimated 22,000 tons of waste per day calculated by assuming an average of per capita waste generation of 0.5 kilogrammes for a current population of 45 million translating to 8million tonnes annually. It is estimated that 40% of the waste is generated in urban areas. Given that urbanization is increasing by 10%, by 2030, the Kenya urban population will be generating an estimate of about 5.5million tonnes of waste every year, which is three times more the amount of waste generated in 2009. Past inventories estimate that 60% to70% of waste generated is organic, 20% plastic, 10% paper, 1 % medical waste and 2% metal. Inefficient production processes, low durability of goods, unsustainable consumption and production patterns lead to excessive generation of waste.

The data herein references above are estimates, as currently there is no systematically collected data on waste streams in Kenya. The main sources of waste are households, manufacturing, commerce, health care, agriculture, waste treatment, construction industry and mining waste. Generally in Kenya, waste from households, industries and health care facilities are referred to as municipal waste and is often unsorted and contaminated. Despite efforts to encourage reuse, recycling and recovery, the amount of solid waste generated remains high and appears to be on the increase.

Kenya has made significant commitments to environmental protection. Article 42 in the Constitution of Kenya (CoK 2010) guarantees every person the right to a clean and healthy environment. Kenya's Vision 2030 sought to relocate Dandora dumpsite as well as develop flagship sustainable waste management systems in Nairobi, Kisumu, Eldoret, Nakuru, Thika, and Mombasa by the year 2030. A National Waste Management Strategy was promulgated in 2015. The ban of the polythene carrier bags in 2017 contributed a major positive impact towards minimising solid waste generation in Kenya.

However, there is need to reconceptualise the waste management approach with the aim of maximizing the extraction of value from waste through reuse and recycling, maximizing job creation from the sector, and minimizing the fraction of the waste stream that is destined for disposal. The Constitution of Kenya 2010 devolved waste management to the 47 county governments. Although many counties are working to improve waste management in their territories, they are hampered by inadequate waste

management infrastructure, county laws and regulations, and capacity and technologies to effectively carry out this devolved function

1.2. Waste Management in the Counties

The most recent United Nations estimates indicate that Kenya's urban population will expand to 50 million by the year 2030, accounting for 62.7 percent of the national population further straining the capacity of Kenyan cities to provide critical waste management services to urban residents.

It is estimated that 34.8% (i.e. 10 million) of the total population of Kenya reside in the urban centres, with the largest five cities (Nairobi, Mombasa, Kisumu, Nakuru and Eldoret) accounting for a third of the urban population. It is estimated that they produce 2400, 2000, 1000, and 500 tonnes of solid waste daily respectively, and as the scale of future urbanisation increases, waste management will pose growing socio-economic, environmental and institutional challenges if adequate measures are not put in place.

Waste Management is a devolved responsibility under the Constitution of Kenya 2010. However, most counties lack adequate infrastructure, governance mechanisms and dedicated funding for effective sustainable waste management. Many have not set aside land for building waste management factories.

It is estimated that only about 40% of the population in many parts of major cities receive waste management services; in many cities, low income and informal settlements do not have waste collection systems at all. All counties in Kenya currently have uncontrolled waste dumpsites where leachate pollute waterways and underground aquifers, and where burning waste emit toxic air and noxious fumes that contaminate the air. There is no systematic waste segregation at the source and the recovery of recyclable items like plastics, papers, glass and metals is done by informal waste picker groups who recover only a fraction of the total recyclable materials, mostly directly from the dumpsite. Informal waste pickers at these dumpsites are exposed to toxic chemicals (from batteries and other waste and burning plastics) air pollution and pests that spread disease.

County governments have not to date taken advantage of economies of scale by partnering with neighbouring counties in the metropolis clusters to pool their resources for more cost-effective and efficient waste management. Additionally, most counties to date do not have waste laws or plans to guide efficient, sustainable waste management, nor a dedicated county waste fund to support investment in waste management programs.

Impressive local and small-scale action is being taken in counties across the country. Waste pickers are organizing into co-operatives. Programs to create jobs in waste collection, sorting and recycling for youth and women are being created. In some

areas, Kenyan entrepreneurs have launched small scale production of organic compost from organic waste. Small-scale, artisanal recycling of glass, plastic and metal is converting some waste into crafts for the domestic and international market.

1.2.2 Waste Management Services by Private Firms

County governments have contracted private waste management firms to collect garbage, transport and dispose waste and other related services. Many counties also supply bins, liners and collection bags. In most upmarket residential areas, garbage is collected twice a week, while in middle income areas, waste is collected once a week, and in low income and margin areas there is no waste collection. Franchising systems for waste collection have been tried by a number of counties whereby a county is zoned, and private sector firms assigned to deliver waste management services to the designated zones and are in charge of both fee and waste collection. This approach has not been efficient as the firms compete for contracts in the wealthier areas but decline to service poorer areas and are vulnerable to corruption.

The system is heavily reliant on the under-resourced public sector for enforcement. Mountains of garbage are still a common feature in most residential areas, market places and road sides. In addition, the private sector waste management companies involved in collection of waste are accused of illegal disposal of waste in rivers, by road sides, in quarries as well as of illegally disposal at dumpsite. There is no framework to guide fee charged by private waste management companies, thus most charge a high fee that the majority of the Kenyan population, especially marginalized urban areas cannot afford.

Waste recycling companies have indicated that extracting recyclable materials is often impossible in practice as most household waste is not sorted and is comprised of 60 per cent organic waste, and cleaning recyclables that have been comingled with waste is expensive. Recycling companies are also faced with challenges including opaque regulatory requirements, a multiplicity of licences and charges, lack of distinction in licensing of waste collection and recycling companies, and lack of sufficient controls at recycling sites leading to their use as dump sites rather than materials recovery centres.

Private sector investment is slowly expanding in waste collection, transportation, waste sorting at material recovery facilities, recycling and production of marketable products from recovered materials.

The high level of privatisation of waste management services by counties without proper regulation and enforcement has also led to unco-ordinated delivery of waste services to citizens. Strict regulation and enforcement of waste services provision by the private sector in Kenya is crucial.

1.2.3 Waste Picker Co-operatives and Community Waste Management Initiatives

Community waste management initiatives established by community based organizations, youth and women's groups are engaged in collection, sorting, enhancing reuse and recycling of waste. These initiatives create jobs for community members, women and youth but face significant challenges including lack of infrastructure (collection points, transfer stations, material recovery facilities) for collection, sorting and recycling, lack of access to markets for recyclable materials, lack of training, and limited access to finance.

Many communities across the country do not receive basic waste collection and disposal services, driving them to burn their waste - with damaging health and air quality impacts.

Informal waste pickers, typically from impoverished and marginalized groups work in hazardous and sometimes deadly conditions to eke out a living from reclaiming a tiny fraction of the recyclable waste. Waste pickers working at the nation's uncontrolled dumpsites are exposed to toxic chemicals (from batteries and other waste and burning plastics) air pollution and pests that spread disease. Waste pickers co-operatives have been formed in some counties under the national Sacco societies, or cooperatives law, to improve labour conditions and livelihoods.

1.2.4 Role of the Citizens in Waste Management

Citizens are key players in the management of waste. They are consumer of goods and services, generators of waste, main players of waste minimisation and sorting at source. Their participation, or lack of participation thereof, determines the success or failure of the adoption and implementation of waste management initiatives.

The shift from mixed disposal at household level to "sorting of waste at source" of recyclable materials, organic and other waste recoverable streams will be key in the realisation of sustainable waste management. Citizens are also key stakeholders to monitor compliance and reporting illegal waste dumping.

1.3. National Legislative and Regulatory Framework for Waste Management

Legislative and institutional mechanisms are necessary to establish good waste sector governance and waste management approaches at the national and county level.

Kenya has addressed waste management as part of the nation's development agenda (Kenya Vision 2030), National Climate Change Action Plan, and laws and regulations including the Environmental Management and Coordination Act (EMCA, 2015), Environment Policy (2013), National Solid Waste Management Strategy (2015), and the Waste Management regulations of (2006). However, the legal and policy regime must be significantly strengthened for the county to achieve its waste management goals.

The Constitution of Kenya (2010) Article 42 provides that “Every person has the right to a clean and healthy environment,” that the State will “Eliminate processes and activities that are likely to endanger the environment.” Additionally, the Constitution devolved responsibilities over waste management to the 47 counties.

Kenya’s Nationally Determined Contribution (NDC) to the Paris Agreement set an emission reduction target of 30 per cent by 2030 compared with the “business as usual” (BAU) scenario and includes the waste sector as an important mitigation opportunity. A Nationally Appropriate Mitigation Action (NAMA 2016) proposal for a Circular Economy Solid Waste Management Approach for Urban Areas in Kenya was developed by the Ministry of Environment and Natural Resources in 2016. The NAMA concept includes waste sorting, creation of recycling points, recycling of 600 tons of waste per day and composting facilities for organic waste treatment.

The National Climate Change Action Plan 2018–2022 proposes to reduce GHG emissions’ through adoption of circular approaches to waste management and engineered landfills.

Kenya’s development blueprint, Vision 2030, includes a Solid Waste Management initiative which calls for relocation of Nairobi’s Dandora dumpsite and the development of solid waste management systems in five (5) leading municipalities. The National Solid Waste Management Strategy aims to create a 7R society prioritizing Reducing, Rethinking, Refusing, Recycling, Reusing, Repairing and Refilling to minimize waste generation, and maximize value creation from waste.

The Environmental Policy(2013) section 6.3 on Waste Management, states that “Inefficient production processes, low durability of goods and unsustainable consumption and production patterns lead to excessive waste generation” and states that the nation will: “Promote the use of economic incentives to manage waste, and Promote establishment of facilities and incentives for cleaner production, waste recovery, recycling and re-use.”

The Environment Management and Management Act (2015) includes provisions for economic incentives that could be developed to encourage good solid waste management practices and incentivize investment in recycling and green manufacturing.

Kenya has implemented a ban on the manufacture, sale, export and importation of plastic carrier bags (Gazette Notice number 2356, February 2017) which took effect in August 2017 and has made a major contribution to minimizing waste generation.

Finally, Kenya’s National Climate Change Action Plan 2018-2022 commits the government to develop a “National waste management policy to substantially reduce waste generation through prevention, reduction, recycling and reuse” and to develop

“Five County-based waste management plans and regulations that are consistent with National Waste Management Strategy and other relevant policies.”

The following documents are currently under development or approval: E-waste management regulations; Asbestos handling and disposal guidelines; Regulations on used oil, waste tires and plastic wastes, and end of life tires regulation.

Legislative and regulatory review will be an ongoing iterative process to ensure that barriers to action are removed and enabling frameworks for implementation are in place based on evolving circumstances.

1.4. Kenya’s Regional and Global Commitments to Waste Related Agreements

Sustainable management of the world’s rapidly growing waste stream is a global challenge. Poor waste management affects many aspects of life for millions of people around the world and is a significant source of the climate pollutants including methane and black carbon. Landfills are the third largest anthropogenic source of methane, accounting for approximately 11% of estimated global methane emissions, equivalent to nearly 800 megatons of CO₂e per year. In addition, uncontrolled leachate contaminates ground water resources. Global and regional waste management related conventions, including the Stockholm, Basel, Bamako and Rotterdam Conventions to which Kenya is a party, provide a global regulatory framework for management of waste, particularly hazardous waste.

African Nations have long recognized the need to address waste issues, adopting the Bamako Convention in 1991 to ban the import of all hazardous and radioactive waste. It also prohibits the dumping or incineration of hazardous wastes in oceans and inland waters and promotes the minimization and control of trans-boundary movements of hazardous wastes within the African continent. The Convention also aims to improve and ensure ecologically rational management and handling of hazardous waste within Africa, as well as the cooperation between African nations.

The East Africa Community (EAC) has similarly recognized the urgency of addressing waste as key component of sustainable development. The EAC Polythene Materials Control Bill (2016) establishes a regional approach to the control and regulation of use, sale and manufacture and importation of polythene materials and products. The EAC bill provided the regional framework for the Kenyan plastic carrier bag ban in 2017.¹

Currently, the EAC member states -- Kenya, Uganda, Tanzania, Rwanda, Burundi and South Sudan – are working to develop harmonized regulations and policies to reduce electronic waste, or “e-waste.” A harmonized regional approach in the EAC will

¹<http://www.eala.org/documents/view/the-east-african-community-polythene-materials-control-bill2016>

enhance efforts to reduce and recycle e-waste, help ensure that e-waste is not exported from one EAC partner state to another and facilitate joint e-waste recycling centres.

Kenya is an active participant in multiple international and regional conventions that address different aspects of the sustainable waste management challenge. These include agreements on sustainable development and reducing waste, the control of hazardous chemicals, electronic waste, and climate change:

- (a) The Basel Convention, ratified in 2000, which addresses the need to control the trans-boundary movement of hazardous wastes and their disposal, setting out the categorization of hazardous waste and the policies between member countries.
- (b) The Bamako Convention, a treaty amongst African nations that prohibits the import of any hazardous (including radioactive) waste into Africa. The convention is a response to Article 11 of the Basel convention which encourages parties to enter into bilateral, multilateral and regional agreements on Hazardous Waste to help achieve the objectives of the convention.
- (c) The Stockholm convention on persistent organic pollutants (POPs) (ratified in 2004) which seeks to protect human health and the environment from these chemicals that remain intact in the environment for long periods and have harmful impacts on human health and the environment.
- (d) The Rotterdam Convention (ratified in 2005) which sets out the procedure for Prior Informed Consent in the International Trade of hazardous chemicals and Pesticides.
- (e) The Montreal Protocol which provides for the phase out of the production and consumption of ozone depleting substances to reduce their abundance in the atmosphere, and thereby protect the earth's fragile ozone Layer.
- (f) The forth United Nations General Assembly (UNEA4 of 2019) resolution UNEP/EA/4/L.8 on environmentally sound management of waste called upon member states to promote integrated approaches to solid waste management through sustainable consumption and production not limited to circular economy, but also economic models, innovation, reduction of waste at source of origin, minimisation of packaging materials, discouragement of planned obsolescence of products, removal of hazardous substance from waste before recycling as well as give special attention to recycling, re-use and reduction of landfilling as well as give application of waste hierarchy for all waste. Kenya is a member of the United Nations and houses United Nations Environment and thus resolved to adopt the resolution.

CHAPTER TWO

GOAL, OBJECTIVES AND GUIDING PRINCIPLES

2.1. Goal

The goal of this framework policy is:

To protect public health and the environment, as well as drive job and wealth creation, by creating an enabling environment for sustainable, integrated waste management and the minimization of waste generation, to contribute to a circular economy.

2.2. Objectives

The objectives of this Policy are to:

- (i) Establish and maintain an effective legal and institutional framework to mainstream sustainable waste management measures and actions across relevant sectors and into integrated planning, budgeting, decision-making and implementation, at both the national and county levels.
- (ii) Promote sustainable waste management through implementation of the waste hierarchy and circular economy concepts.
- (iii) Enhance waste segregation, collection, transportation and audit of waste across the nation.
- (iv) Adopt inclusive management with clear financial and accounting mechanisms at national and county levels to encourage investment initiatives in implementation of sustainable waste management activities.
- (v) Engage, strengthen and build partnerships with all stakeholders, including the private and informal sector, as well as the general public through education and provision of waste management services to promote responsible waste management behaviour.
- (vi) Incentivize private sector investment in building and operating sustainable waste management infrastructure.
- (vii) Facilitate widespread public awareness, participation, action and oversight of Kenya's sustainable waste management policy, law, mechanisms, actions and investments at the national and county level.
- (viii) Formalize the waste picker sector and ensure safe working conditions through training, financing and facilitating participation in decision-making.

2.3. Guiding Principles

The implementation of this Policy will be guided by the following principles:

- (i) Right to a clean and healthy environment: under the 2010 Constitution every person in Kenya has a right to a clean and healthy environment and a duty to safeguard and enhance the environment.
- (ii) Right to sustainable development: the right to development will be respected taking into account economic, social and environmental needs. Kenya seeks to achieve people-centred development that builds human capabilities, improves people's wellbeing and enhances quality of life.
- (iii) Partnership: building partnerships, collaboration and synergies among various stakeholders from the public, government, non-governmental organisations, civil society and private sector, as well as vulnerable communities and populations including women and youth, will be prioritized to achieve effective implementation of this Policy. The private sector will be encouraged to develop capacities for investment, construction and service deliver in recycling and waste management.
- (iv) Devolution and Cooperative government: embracing a system of consultation, negotiation and consensus building in implementation of sustainable waste management between and within the national and county governments.
- (v) Equity and social inclusion: ensuring a fair and equitable allocation of effort and cost and addressing the disproportionate vulnerabilities, responsibilities, capabilities, disparities among different social groups, and promoting gender and inter- and intra-generational equity.
- (vi) Integrity and transparency: the mobilisation and utilisation of financial resources shall be undertaken with integrity and transparency in order to eliminate corruption and achieve optimal results and ensuring that communities are given all relevant information in a timely fashion.
- (vii) Precautionary Principle: the principle that precautionary measures should be taken even if some cause and effect relationship are not fully established scientifically when an activity or product raises threats of harm to human health or the environment.
- (viii) Polluter pays principle: the principle that those who produce pollution or waste should bear the costs of managing it to prevent damage to human health or the environment. Makes the party responsible for producing pollution responsible for paying damage done.

- (ix) Zero Waste principle: the principle that society should aim for zero waste, designing and managing products and processes that reduce and eventually eliminate the volume and toxicity of waste, to conserve and recover waste resources rather than to burn or bury them. It is related to the waste hierarchy, which establishes an order of preferred actions to manage waste, and the three R's: reduce reuse, recycle.

- (x) Extended producer responsibility: the principle that producers should be given significant responsibility – financial and/or physical – for the treatment or disposal of the waste from the products they create. Beyond easing government budgets for waste management, such responsibility in principle incentivizes companies to prevent wastes at the source, promoting more environmentally friendly product design and supporting the achievement of public recycling and materials management goals.

CHAPTER THREE

ACHIEVING SUSTAINABLE WASTE MANAGEMENT IN KENYA

The policy interventions highlight the application of the waste hierarchy and circular economy model for managing waste in Kenya as well the enabling framework to support its implementation and realisation of a zero waste economy. This is illustrated in Annexe 1.

3.1. Promote waste management through implementation of the waste hierarchy and circular economy concepts

Increasing population and urbanization in Kenya, has led to increasing challenges of collection, re-use, recycling, treatment and disposal of the ever increasing quantities of solid waste. It is estimated that more than 22,000 tons/ day of garbage is currently generated and only 10% is recycled. Private Companies that deal with waste recycling have indicated that, since most of the collected waste from household waste is not sorted and comprises of 60 per cent of organic waste, there is high contamination of garbage rendering recycling difficult and expensive.

3.1.1 Adoption of Waste Hierarchy

The Waste management hierarchy provides an order of environmental priority actions for proper waste management. It stipulates an integrated approach to waste management by establishing an order for reduction and management of waste, Extraction of total value from resources and generation of minimum waste (the little waste to be disposed and disposal should be regulated). Proper application of the waste hierarchy helps in reduction of waste, conservation of energy and resources, development of green technologies and market practices, prevention of emission of green gas houses, boost green economy and create new jobs in green entrepreneurship and resource management industry.

Sustainable and environmentally sound waste management is based on waste management hierarchy that prioritises waste prevention and reduction, re-use, recycling and composting, waste treatment and disposal to a regulated landfill with energy recovery as the last least environmental friendly option. This policy sets priority order for managing waste as a resource that should be harnessed in Kenya according to the waste management hierarchy by adopting the following policy measures.

Policy Statements

National Government will:

- (i) Develop national waste management law that prioritises and enforces the waste hierarchy across the country.
- (ii) Develop a national action plan for management of marine litter.

- (iii) Develop a 10 year rolling national waste management plan assessing status of waste management and long term approaches for national waste prevention programmes and approaches, future trends prediction and measures to ensure achievement of zero waste status.
- (iv) Support county governments to establish waste management infrastructure for source segregation, standards and design for materials recovery facilities' and engineered landfills.
- (v) Review and align regulations for E-waste, medical waste, chemicals, pesticides' and radioactive waste in accordance to this policy.

County Government will:

- (vi) Align county waste management laws and strategies to the waste management hierarchy.
- (vii) Domesticated the national waste management and marine litter action plan
- (viii) Set aside sufficient land for waste management activities, and generate jobs and livelihoods from waste collection, recycling, and waste management activities according to the waste hierarchy.
- (ix) Establish and improve waste management infrastructure to promote source segregation, collection, reuse, set up materials recovery facilities and controlled disposal in sanitary engineered landfills.

3.1.2 Waste Prevention and Reduction

Waste prevention are measures adopted to create less waste by reducing waste at source of origin and minimising waste ending up to the landfill as much as possible through integrating waste reduction in production processes, use of eco-friendly inputs and packaging, better design to enhance durability, reusability and recyclability, enhance segregation at source, reduction of superfluous packaging, efficient resource use, adoption of green procurement and extension of product lifecycle. The following policy measures are proposed for national government and county government in order to reduce generation of waste:

Policy Statements

National Government will:

- (a) Develop a 5 year rolling national solid waste management strategy that prioritises zero waste, circular economy, waste hierarchy, education and awareness programmes.
- (b) Develop framework for adoption of green procurement in public sector by prioritising purchasing of locally produced goods and recycled products.
- (c) Develop economic instruments framework that promote waste prevention and cleaner production at industrial production.

- (d) The ministry responsible for environmental affairs in consultation with ministry responsible for industrialisation and standards authority will develop regulations that:
- (i) Require all producers to use eco-friendly raw materials that generate less waste, use cleaner production technologies and manufacture eco-friendly products, packages and eco- labels that promote circularity.
 - (ii) Require all producers, manufacturers, processors and importers to declare lifecycle environmental impact of their products and packaging in accordance to set international standards.
 - (iii) Sustainable packaging regulations to reduce waste from packaging materials and labelling guidelines requiring all producers, manufactures and importers to inform sellers and the consumer of the characteristics of their product and packaging re-use, re-turn, recyclability and measures to be taken with regard to waste management at the end of the lifecycle.

County Government will:

- (i) Prioritise waste prevention and minimisation in conformance to the waste hierarchy when developing waste management plans and legislation.

3.1.3. Re-use of products and components

Re-use of products entails using again components or the product for the same purpose they were conceived and includes cleaning and repair of discarded items to facilitate re-use.

Policy Statements

National Government will:

- (i) Develop a national re-use framework for unutilised or excess goods between government institutions in consultation with public procurement authority and Kenya Bureau of Standards to ensure that public sector organisations prioritise realistic re-use options over purchase of new products.
- (ii) Develop regulations and standards for locations for central collection system for materials extracted from waste that can be re-used and ensure that storage does not endanger human life, health or the environment.

County Government will:

- (i) Provide well managed central collection centres for materials that can be harvested from waste that can be reused.

3.1.4. Re-Cycling

Recycling entails recovery of materials from waste for reprocessing and production of secondary raw materials. Recycling also entails preference to secondary raw materials in replacement where feasible of primary virgin material. To promote circular

economy and lock valuable resources in the economy, the policy aims at maximising materials available for recycling through the following measures:

Policy Statements

National Government will:

- (i) Review all laws and regulations and reclassify waste as “unsegregated waste” and “recovered materials/ recyclable materials to give legal recognition of “recyclates” extracted from waste in accordance to the recovered resource concept.
- (ii) Review laws and regulations that categorise all materials extracted in accordance to recovered resource concept and reclassify waste as “unsegregated waste” and segregated recyclable items as “recyclates or recyclable materials”
- (iii) Review and align licencing regime of waste management service providers and recycling facilities with a view of proper categorisation and licensing of waste service providers, materials recovery and recycling facilities and landfill with a view of harmonising, fees and charges according to the level at the value chain, ease the burden of compliance and consolidation of the regime into a one stop shop/centralised and coordinated unit.
- (iv) Develop regulations on handling end of life vehicles, machinery and equipment.
- (v) Develop standards to stimulate development of a market for recycled materials and organic compost in partnership with authority responsible for standards.
- (vi) Develop and promulgate quality standards for recycled materials and secondary raw materials that will be developed in partnership with the authority responsible for standards.
- (vii) Create a regulatory environment that promotes a functional market for waste and recycled materials without compromising quality standards, public health and environment.
- (viii) Put in place measures and economic instruments to reduce need for virgin materials in favour of local recyclable materials in production process.
- (ix) Initiate a mechanism for exempting recycling business and materials recovery sector from presumptive tax, turnover tax and recycled materials from VAT.
- (x) Develop regulations to require commercial properties such as hotels, office buildings, hospitals to ensure that their waste is recycled through a licensed service provider.
- (xi) Develop co-processing guidelines that encourage the use of waste as raw material, to replace natural minerals and fossil fuels in industrial processes, mainly in Energy Intensive Industries (EII).

County Government will:

- (i) Create a County regulatory environment that promotes a functional market for waste and recycled materials without compromising quality standards, public health and environment.
- (ii) Initiate a market and mechanism within the county procurement system to prioritise recycled materials and materials recovery sector.
- (iii) Develop county regulations to require institutions to ensure that their waste is recycled through a licensed service provider.

3.1.5. Composting

A major waste stream is biodegradable material consisting of organic and kitchen waste, waste generated in agriculture through poor post-harvest management, market places unsold produce, fresh and rotten vegetable waste, expired grain produce and farm level agricultural waste which is biodegradable under controlled aerobic conditions. Environmental effects of unmanaged bio waste is green gas emissions and leachate production. Once segregated at source, composting is an effective method for recycling organic waste. Embracing use of compost from organic (agriculture and food based) and other suitable wastes will contribute the reduction in GHG. This will recycle the nutrients outside of landfills. Not all bio-waste though can be used to produce compost due to contaminants. The following policy measures are proposed:

Policy Statement**National Government will:**

- (i) Provide technical support to county governments and private sector to manage food and organic wastes collection with appropriate treatment options depending on the local conditions.
- (ii) Develop guidelines and standards and review relevant legislation to mainstream and recognise compost and organic fertiliser.
- (iii) Support market development of compost as an alternative or complimentary for synthetic fertilizer by mainstreaming 40 % quota system for organic fertilizer in the national and county fertilizer subsidy program.
- (iv) Develop a public information and awareness campaign to disseminate the benefits of composting as technology in waste management.

Concurrent

- (i) The national and county government will carry out feasibility study to identify potential sites for setting up composting plants and financial requirements of setting up composting technology in the country.

County Government will:

- (i) Identify and prioritise potential sites for setting up composting plants and financial requirements of setting up composting technology in the county.

- (ii) Establish composting plants.
- (iii) Establish clear procedures for providing incentives to encourage private sector participation in composting ventures.

3.1.6. Waste treatment before disposal

Waste treatment refers to physical, mechanical biological, thermal processing of waste by removal of toxic elements which if emitted would have severe environmental impacts before disposal. The following policy measures shall apply to waste treatment.

Policy Statements

Waste Management Entities

All legal entities performing transport, storage, treatment and processing of waste shall obtain an environmental license from NEMA for performing such activity.

National Government will

- (a) Develop regulations:
 - (i) That ensure that all residual waste is pre-treated to remove key recyclables material and provide second opportunity to capture recyclates missed at source segregation stage.
 - (ii) That waste that cannot be re-used, or reprocessed or recycled be subjected to physical, chemical, thermal or biological treatment in order to reduce toxicity, volume and negative impact to human life, health and environment before final disposal.
 - (iii) Review and align regulations for treatment before disposal of medical waste, chemical packaging, pesticides, e-waste and radioactive waste.
- (b) The National Environment Management Authority will prescribe the form and contents of license application for waste treatment, storage, the minimum technical conditions, organisational capacities and environmental standards for waste treatment activities and facilities.
- (c) Put in place a framework for enhancing access to both local and internationally best practices, technological advancements, and technical process development for waste treatment.
- (d) Develop health and safety standards for all waste treatment facilities in consultation with ministry responsible for occupational standards.
- (e) Develop standard competency based training curricula for waste treatment operators.

County Governments will:

- (i) Domestic waste treatment before disposal in County legislation.

Waste management facilities

- (i) The recyclers, bio-waste processors and material recovery facilities will obtain environmental compliance licences from NEMA.

3.1.7. Transiting from Dumpsites to Landfills

Waste disposal is the final solution of discarding waste that cannot be used or reprocessed at the least harm to human life, health or environment. Common disposal methods consists of landfilling and incineration. Kenya will progressively phase out open dumpsites. Engineered landfilling will be the last option of the waste hierarchy and should be minimized.

Policy Statements

National Government will:

- (i) Develop guidelines for closure and decommissioning of existing dumpsites.
- (ii) Ban all open burning of all waste at both household, commercial and institutional level.
- (iii) Prohibit disposal of hazardous waste including, e-waste and asbestos in dumpsites and landfills.
- (iv) Ban disposal of unsorted waste to dumpsites and landfills and adopt Materials Recovery Approach.
- (v) Ban disposal of hazardous, electronic waste, recyclables and biodegradable waste in existing dumpsites.

County Governments' will:

- (i) Implement the ban imposed by the national government
- (ii) Develop a 3 year plan to transit from the current dumpsites and adopt landfilling for residual waste.
- (iii) Develop regulations and levying structure to promote the closure of open dumpsites.
- (iv) Establish engineered landfills for disposal of non-recoverable fractions of wastes.

3.1.8. Landfills

A landfill is a controlled and regulated disposal site for unrecyclable waste with basic operations and site management that has a controlled access, recording facilities for incoming waste control and prevents the release of pollutants to soil, water and air. Landfills are used for wastes that have no residual value. The disadvantages of landfill disposal is that they require large areas of land, heavy investments, energy intense, produce a lot of heat, can contaminate soil and water, and emits climate-relevant methane, carbon dioxide and odours. In order to minimize the environmental damage, modern landfills are equipped with a waterproof ground layer and the means to capture leachate and monitor its quality. Alternatively, once the landfill is full, the waste can be compressed and covered to capture the gas. This method is called landfill gas

extraction and it actually promotes the production of methane. The gas can either be flared on the spot, used to generate heat and electricity (waste-to-energy), or processed to natural gas-like fuels.

Landfills should only be used for residual waste (waste with no commercial value left out after segregation process in a Materials Recovery Facility (MRF)). The aim of this policy is to ensure that only those materials that cannot be recycled are landfilled and shall apply the following measures

Policy statements

National Government will:

- (i) Develop classification, licensing requirements, standards and engineering and design of landfill site design, planning, operations and monitoring systems, landfill waste audit for non-hazardous, construction and hazardous landfills.
- (ii) Develop landfilling regulations requiring that the activity of landfilling be performed by a public entity or a licensed materials' recovery facility on the basis of a license or contract for performing works of a public interest or contract of concession.
- (iii) Develop regulations on special conditions for disposing waste that cannot be re-used, reprocessed or used as a source of energy including disposal of e-waste, asbestos, radio-active and hazardous waste requiring special permit, special handling and disposal.
- (iv) Develop guidelines for landfills operations, automation and management.

Concurrent

- (i) The national and county governments in consultation with the Ministry responsible for lands and urban planning will designate landfills according to the national and county waste management plan while taking consideration of impacts on natural resources, land use patterns', sensitive ecosystems and cultural resources.

County Government will:

- (i) Ensure that landfills are only used for residual waste that has no commercial value left out after segregation process at a Materials Recovery Facility (MRF).
- (ii) Establish an engineered landfill in its county boundaries unless an inter-county or county economic bloc agreement is in place for common disposal of waste in a jointly managed engineered landfill.
- (iii) Develop a public private partnership and concession framework for establishment and operation of landfills by private operators.
- (iv) Impose landfill fee to deter waste from landfills and dumpsites.
- (v) Domesticating national guidelines and regulations on landfilling.

3.1.9. Incineration (Waste to Energy)

This is the thermal treatment of waste to convert it to energy, heat ash, and flue gas and will be the last preferred option as per the waste hierarchy for waste management in Kenya.

Policy Statements

National Government will:

- (i) Develop incineration guidelines and regulations.
- (ii) All incinerators to acquire environmental licences from NEMA

3.2. Enhance Mapping, Planning, Segregation, Collection, Transportation and Service Provision

With its increasing economic prosperity, increasing population and subsequent urbanization, Kenyan county governments are challenged by collecting, segregation, treatment and auditing of the ever increasing quantities of solid waste. There is need to organize waste collection, segregation and transportation services so as to regularly gather and organize already existing data while generating additional knowledge and information to inform planning and decision-making for integrated waste management going forward.

3.2.1 Waste Mapping

The country's ability to respond effectively to the waste challenge requires enhanced data collection on waste generation, current waste disposal practices, waste minimization, reuse and recycling opportunities, as well as the impacts of the current poor state of waste management on public health and the environment.

Policy Statements

National Government will:-

- (i) Develop a national data collection system and baselines on all waste types, volumes generated and how they are handled, to ensure that all policy and regulatory decisions at the national level are informed by and based on credible data.
- (ii) Develop a national reporting system for monitoring and enforcement, and maintain a regularly updated waste management database of private entities engaged in waste management services.
- (iii) Incorporate waste management indicators into the National Integrated Monitoring and Evaluation System.
- (iv) Map the waste value chain with a view of proper categorization and regulation of players in the sector including waste handlers, waste treatment and processing and waste disposal.

County Government will:-

- (i) Set up data collection system of the county waste streams, volumes generated and how they are handled, registered service providers to ensure that all policy and regulatory decisions at the county level are informed by and based on credible data.
- (ii) Incorporate waste management indicators into the County Integrated Monitoring and Evaluation System.
- (iii) Put in place measures to harness the waste value chain to generate jobs and income for diverse stakeholders.

3.2.2 Waste Segregation

Waste segregation includes all measures to ensure quality of materials extracted from waste and reprocessed is maintained for the realization of maximum value of resources and environmental protection from waste. The following policy measures shall apply to waste segregation:

Policy Statements

National Government will:-

- (i) Develop regulations that require all Institutions, businesses, commercial trading, Industrial, residential and property developers to provide source segregation receptacles at their premises.
- (ii) Design standard waste segregation receptacles to be mainstreamed in building designs.
- (iii) Develop food waste regulations to require separate collection, transport and processing into useful products thus diverting organic waste from landfilling by all institutions, commercial, industrial and households waste generators.
- (iv) Develop harmonised regulations and guidelines for the minimum waste fractions for sorting at source at household, business, industrial and institutional levels.
- (v) Develop regulations requiring all hazardous and radioactive waste including electrical and electronic equipment waste to be sent to a licensed recycling and recovery facility locally and abroad for disposal.
- (vi) Carry out national public awareness on waste segregation categories, colour codes and national campaign on importance of sorting at source.

Concurrent

- (i) Streamline and harmonise national and county government legislation on licensing of sorting sites to avoid double licensing and make waste management more attractive to investors.

County Government will:-

- (i) Enforce waste fractions segregation at source based on the national gazetted minimum waste fractions for all waste generators including household level.
- (ii) Ensure waste service providers provide separate waste segregation containers to enable sorting at source of organic waste, recyclable and non-recyclables and educate the waste generators on the prescribed sorting categories and methods.
- (iii) Carry out county public awareness on waste colour codes and importance of proper sorting in all public labelled bins for easier sorting.

3.2.3. Waste Collection

Waste collection is the transfer of recyclable materials and waste from point of generation. Waste collection should be managed in line with the waste hierarchy supportive of extraction of maximum value principle of waste segregation and resource efficiency. System of deposit return of products or containers allows for special upfront surcharge or deposit by manufacturers which is then refunded to the consumer when he or she returns the containers or products for recycling or proper disposal. Historically, deposit systems are used for glass, aluminium, plastic, drinking bottles and cans. Deposit- return systems enhance collection of materials and packages and reduces contamination by incentivising the consumer as well as enhancing recirculation back to the economy loop. The following policy measures will apply to waste collection:-

Policy Statements

National Government will:-

- (i) Develop regulations on design, size, construction and maintenance of public waste receptacles for purpose of access and emptying.
- (ii) Develop regulations on management of construction waste.
- (iii) Develop extended producer responsibility regulations that require all producers, importers, and distributors and traders to be members of a mandatory or registered extended producer responsibility scheme.
- (iv) Develop regulations for deposit return system and requirements for system operations, coordinator, administrators and operators.
- (v) Develop regulations and standards for refund marking of products and containers under the deposit return system.

- (vi) Specify materials and packaging subject to be managed under compulsory deposit return system.
- (vii) Develop regulations that all bottle containers and cans to have ISSN number or re-use/recycling mark that can be recognized by the reverse vending machines to facilitate identification and implementation of deposit system for bottle containers
- (viii) Develop and formalize trade-in, take-back schemes, and innovative approaches for collection of specific reusable products, packaging and other recyclable materials.
- (ix) Develop economic incentive including tax measures to incentivise reverse vending machines, balers and compactors to facilitate easy collection of voluminous waste materials.
- (x) Ensure that all producers label the products or containers with a refund marking in a manner established by law.

County Government will:-

- (i) Establish “public collection centres“ guided by the principle of proximity, where the public can discard a variety of recyclable household waste such as paper, cardboard, glass, plastic, & metal including electronic products and hazardous waste.
- (ii) Develop regulations and guidelines for county cleaning, collection and transportation schedules in respect to waste fractions segregated at source.
- (iii) Ensure all citizens have access to waste collection services and receptacles
- (iv) Adopt nationally prescribed design, size, construction and maintenance of public waste receptacles.
- (v) Authorise placing of waste receptacles on county public places.
- (vi) Enforce requirement that property owners, landlords and caretakers be held responsible for waste dumped in front and around their facilities.
- (vii) Ensure all public places within their jurisdiction are clean.
- (viii) Ensure that all public event organisers submit waste management plan of the waste generated or engage a licensed waste provider to manage waste generated during the event.
- (ix) Foster cooperation with Resident Associations to eliminate waste dumping within their jurisdiction.

3.2.4 Waste Transportation

Waste should be transported in an environmentally sound manner without causing pollution or bad odour or further littering. A waste manifest system enables tracking of transportation of waste both hazardous and non-hazardous till it reaches its disposal destination.

Policy Statements

National Government will:-

- (i) Develop segregated waste transportation designs for trucks and waste transportation vehicles and handcarts including compartments for waste transportation vehicles, GPS trucking device, single colour for all waste transportation trucks, standard labelling to identify waste service providers.
- (ii) Develop guidelines requiring all legal entities or individuals handling hazardous or non-hazardous waste to provide identification and waste manifest.
- (iii) Review and align all existing waste and recovered materials transport regulations to this policy.
- (iv) Ensure waste transportation trucks adhere to air quality regulations.
- (v) All waste transportation shall be licenced by NEMA.

Concurrent

- (i) The national and county governments will review and harmonise waste transportation charges.
- (ii) Develop designs, guidelines, and requisite operations for transfer stations for non-hazardous waste intended for storage, processing and transfer to designated Material Recovery Facility (MRF).

County Government will:

- (i) Develop guidelines for waste transportation in Counties that is aligned to national regulations.

3.2.5. Waste Service Providers

Waste Service Providers include legal entities or registered individuals and community groups licensed to collect, transport waste, run and operate materials recovery facilities, recycle, treat and dispose waste to engineered landfills. The harmonisation of their services is very crucial to ensure achievement of waste hierarchy goals and targets.

Policy Statements

National Government will:

- (i) Establish a national integrated network of waste service providers, including collectors, transporters, materials recovery facilities, waste treatment and disposal facilities for coordinated delivery of waste management services in the country.
- (ii) Develop guidelines, standards and regulations and licensing requirements to harmonize waste management services and require that all waste service

providers provide quality services that protect human life, health and environment

- (iii) Publish annually locations and managers contacts of established and licensed material recovery facilities, recycling facilities, co-processing and energy recovery from waste.

County Government will:-

- (i) Ensure that Waste collectors and transporters take their collected waste to materials recovery facilities and not directly to dumpsites.
- (ii) Publish annually a list of licensed waste operators.
- (iii) Supervise and manage waste management service providers operating in their jurisdiction to ensure they deliver effective waste management services to the materials recovery facilities in accordance to the waste hierarchy priority.

The following policy measures shall apply to waste collectors and transporters:

- (i) Licensed waste management service providers shall be responsible for collection and transportation of waste from locations specified in their contracts and transport them to materials recovery facilities or licensed recycling facilities only.
- (ii) Waste collectors and transporters shall adhere to determined collection and transportation schedules of sorted materials and waste streams.
- (iii) Waste collectors and transporters shall submit a 3 year waste management plan aligned to the waste hierarchy priorities for the area of coverage as part of the licensing requirements with a direct linkage to Materials Recovery facilities for further sorting and processing of waste collected.
- (iv) Waste collectors shall put in place customer charters setting out charging fees, collection schedules, and collection of extra waste or removal of bulky waste as well as provide protective equipment and proper identification of their employees/waste handlers.
- (v) Waste collectors and transporters shall provide health safety information to all staff and visitors regarding waste handling and ensure their staff possess the requisite technical and knowledge on waste management.

3.2.6 Material Recovery Facilities (MRFs)

A materials recovery facility (MRF) is a specialized plant that receives, separates and prepares recyclable materials for marketing and subsequent use in terms recycling of the dry materials and composting of the organic materials and processing of secondary raw materials. MRFs form an integral part of a circular economy value chain as waste materials need to be sorted first before they can be recycled.

To promote circular economy and locking valuable resources in the economy, the policy aims that all waste collected by waste collectors should first go to MRFs and only the sorted residual materials should then go to a waste-to-energy or landfill facility.

Policy statements

National Government will:-

- (i) Develop regulations and guidelines on operations of MRFs
- (ii) Ensure the Material Recovery facilities be licensed in accordance with guidelines and regulations developed by the National Environmental Management Authority (NEMA).

Concurrent

The National and County Governments will:-

- (i) Ban unsorted waste dumping and adopt Materials Recovery approach.
- (ii) Redesign existing dumpsites into Materials Recovery Facility (MRFs).
- (iii) Facilitate establishment of materials recovery facilities (MRFs).

County Government will:-

- (i) Establish MRFs.
- (ii) Domesticcate and enforce national regulations and guidelines on MRFs.
- (iii) Consolidate an annual report of the MRFS and submit to the Ministry responsible for environmental matters.
- (iv) County government shall collect and transport residual waste from MRF to the landfills.
- (v) Ensure MRFs be the only facilities allowed to take waste to engineered landfills.
- (vi) Provide enabling environment for private sector to establish MRFs
- (vii) Enforce ban on unsorted waste dumping.

Materials Recovery Facility Operators

- (i) Ensure all material recovery facilities submit a 3 year waste management plan with clear linkages to waste collectors, recycler and landfills for the area of coverage as part of the licensing requirements.
- (ii) Ensure all materials recovery facilities automate their operations and record trucks that enter facility (plate number, amount) technical and organizational capacities.
- (iii) Provide data quarterly to county governments of materials received, quantities sorted and dispatched or disposed to a landfill.

3.3. Strengthen National and County Legal and Institutional Frameworks

3.3.1. Strengthening the Institutional Framework

Currently, there exists gaps in the coordination and enforcement of environmental legislation on waste management in the country. The situation has been exacerbated by the lack of national policy for the coordination of waste management. Further, laws related to waste management are fragmented and outdated leading to disparities in regulation and enforcement by different government institutions and counties.

The situation has resulted in the uncoordinated and uneven manner in which these institutions implement the waste management functions. To address these gaps, this policy outlines the roles and responsibilities of the government entities, devolved units and stakeholders as follows:

Policy Statements

National Government will:-

- (i) Review and align current national waste management strategy to the waste management hierarchy and circular model.
- (ii) Establish an inclusive National Waste Management Council.
- (iii) Establish a secretariat of the Council under the Environment Secretary that shall develop, coordinate and oversight the implementation of the national waste management plans, reporting and monitoring of set national targets and goals, strategies and activities.
- (iv) License materials recovery facilities, waste treatment facilities and landfills.
- (v) Establish public legal redress on waste management matters.

Concurrent

- (i) Ensure that the waste management enforcement and inspection regime is robust and well resourced.

County Government will:-

- (i) Domesticated the national waste management plan.
- (ii) Mainstream county waste management oversight in the county environment committee.

Citizens

- (i) Individuals and households shall contribute to the costs of providing the services used for segregation, collection, transportation, treatment and disposal of the wastes they generate.

3.4 Transparent mechanisms for waste management infrastructure.

Adequate and predictable financial resources are a crucial component for achieving Kenya's sustainable waste management objectives. Given the extent of the waste management challenge, it is important to ensure that internal and external sources of finance are mobilized. Kenya therefore requires a suitable framework to attract and efficiently utilise waste management finance. Governments at all levels will be required to integrate sustainable waste management actions into budgetary processes. Sufficient budgetary allocation for all institutions performing sustainable waste management functions will be prioritised to ensure that the necessary human, technical and financial resources are available.

3.4.1 Setting up financial mechanisms

Economic incentives are useful tools to encourage good solid waste management practices and incentivize investment in waste management. In addition the polluter pays principle ensures that waste management at County level is financially viable. The Ministry will, in collaboration with lead agencies and County Governments, optimize the country's opportunities to mobilize finance for sustainable waste management, and ensure coordination across all national and county government bodies.

Economic instruments that encourage or discourage particular behaviour or actions with respect to sustainable waste management will be critical to augment other legal and regulatory instruments.

The government recognizes the need to strengthen transparency and accountability and will take necessary steps to prevent corrupt practices in waste management finance and actions.

Policy Statements

National Government will:-

- (i) Adopt a sustainable waste management finance strategy and eligibility criteria that enables implementation of priority actions.
- (ii) Explore possible avenues to attract internal and external sustainable waste management finance, including through foreign direct investment and other multilateral or bilateral funding.
- (iii) Ensure sufficient resources for institutions engaged in sustainable waste management education and public awareness.
- (iv) Promote private sector involvement in the waste sector through the introduction of incentives, removal of investment barriers, and creation of a conducive investment climate and facilitation of access to finance.
- (v) Prepare and implement a comprehensive, full costing of the national waste management action plan developed by the waste management Council and periodically review its financing under the framework of this Policy.

Concurrent

- (i) The national and county governments will set up a 5 year waste Infrastructure delivery programme including financial support through waste infrastructure grants for material recovery facilities, waste treatment to address shortfall in residual waste treatment capacity.

County Government will:

- (i) Allocate resources for sustainable waste management actions in county budgetary processes.
- (ii) Build capacity to mobilise and enhance absorption of resources for sustainable waste management interventions.
- (iii) Promote the creation of green jobs by establishing an enabling policy framework for investment, and creating business friendly regulatory environments in recycling, green economy, and sustainable waste management.
- (iv) Support waste management enterprises at county level, including those run by vulnerable and marginalized Groups.

Citizens and Individuals

- (i) Waste generators including individuals and households shall contribute to the cost of waste management services.

3.4.2. Waste Reporting and Audit

The purpose of waste audit is to monitor waste management activities and compliance with waste management procedures and regulations. It is fundamental in accounting for waste and data generation for planning and informing decision making.

Policy Statements**National Government will:-**

- (i) Publish bi annual national report on waste management in the country and level of achievement of the waste hierarchy including total volume of waste collected in the country, total recycled and disposal methods and measures being undertaken to ensure best environmental and zero waste outcomes are being achieved.
- (ii) Prescribe conditions and requirements including technical, equipment, facilities and competencies to be fulfilled by waste auditors and accreditation of bodies eligible for waste assessment and audit.

County Government will:-

- (i) Provide semi-annual reports to the national waste management council showing how and when materials were collected within their jurisdiction,

volume of materials recycled and measures undertaken to implement the waste hierarchy in the county.

Concurrent

- (i) National and county governments will through the national waste management council to establish annual consultative forum for Waste Management.
- (ii) Development and stock taking towards the set waste hierarchy priority targets.

Waste Management Service Providers will:

- (i) Submit report and data on organizational and technical capacities, measures for waste handling in the order of waste hierarchy on a quarterly basis to the county government.
- (ii) Keep monthly records of quantity, source of waste, storage, waste handled or processed or handed over to recyclers and waste intended for disposal, technical and organizational capacities and submit the report to county government on a quarterly basis.
- (iii) All waste treatment and disposal facilities shall record trucks that enter facility (plate number, amount) technical and organizational capacities and provide data quarterly to county governments.

3.5. Strengthen partnerships and increase public awareness

In order to enhance an integrated waste management system, it is essential to engage with and educate all stakeholders, since each one plays a unique role. The current situation is that stakeholders are not working together. The informal sector is inadequately integrated in the formal waste related economy. Citizens are not fully aware of their roles. The private sector is mainly implementing business as usual approach. Government does not have appropriate engagement programs and mechanisms. Therefore, different measures and approaches are needed to ensure participation and coordination of all stakeholders.

3.5.1. Education and public awareness

Raising and maintaining awareness on integrated waste management is crucial to enhance the participation and increase the responsibility of the public as a positive agent of change. Inclusion of sustainable waste management knowledge into the education curriculum at all levels should be prioritized.

Policy Statements

National government will:

- (i) Develop a training and certification curriculum for waste management professionals.
- (ii) Develop and implement guidelines for mainstreaming of sustainable waste

management in education curriculum at all levels through Environmental Education and extra-curriculum activities.

Concurrent

The National and County Government will

- (i) Incorporate sustainable waste management knowledge into government public awareness initiatives and advertising
- (ii) Collaborate with, and support, media, private sector and civil society in incorporating sustainable waste management into their advocacy and public awareness raising programmes
- (iii) Encourage smart purchasing such as buying right amount of goods like food so that none goes to waste.
- (iv) Provide timely information on waste management using diverse platforms including institutional websites.

3.5.2. Formalization of the informal sector

The informal sector plays a vital role in the waste management system, especially in the collection and recycling of waste. Recognizing their role and including them in the formal economy are necessary steps to enhance an integrated waste management system and contribute to a circular economy.

Policy Statements

National Government will:-

- (i) Translate the waste hierarchy campaign in local languages for easier understanding of the informal sector.

Concurrent

National and County governments will:-

- (i) Support the formalization of the informal sector through mapping and organisation and legal registration of the waste pickers groups.
- (ii) Train the informal groups on this policy, waste hierarchy, materials recovery facilities, safety measures and marketing of recycled waste and products.
- (iii) Strengthen linkage between informal sector with markets for recycled materials.

County Government will:-

- (i) Assign communal waste collection centres and transfer stations to formalised and organised groups to manage the services

- (ii) Mobilise communities especially in the informal settlements and support formation of community based waste management groups or organisations.
- (iii) Support waste management initiatives of the formalized groups through County Waste Funds.

3.5.3. Capacity Development

Capacity-development on sustainable waste management is critical for multiple sectors of the economy, the public, and national and county governments. Its focus will include the training of government and county institutions to effectively implement policy frameworks, laws and regulations. It will also include the private sector through capacity building and knowledge transfer on the circular economy and move beyond business as usual model.

Policy Statements

National Government will:-

- (i) Develop and implement a sustainable waste management capacity development strategy targeting public institutions (ministries and counties) as well as private sector and informal groups

County Government will:-

- (i) Prioritize proximity in capacity building and waste management interventions.
- (ii) Domesticate the national sustainable waste management capacity development strategy.

3.5.4 Mainstreaming Gender, Youth and Special Needs groups

In view of their unique roles in society, women and men can be active agents to address sustainable waste management challenges. The youth represent a crossover between the present and future generations, and therefore play a critical part in socio-economic development. It is necessary to carve out opportunities for them to participate in the decision-making processes of waste governance. Moreover, creating job opportunities for people with special needs in the waste management sector should be prioritized.

Policy Statements

- (i) The County government will put in place mechanisms to ensure and enhance the participation of the youth and vulnerable groups in sustainable waste management decision-making and implementation
- (ii) Engender all activities of the Sustainable waste management policy.
- (iii) National and County governments will undertake a systemic analysis of the various special needs. Based on the analysis, job opportunities and

incentives for people with such needs should be included in the waste management system.

3.5.5 Collaboration and Stakeholders Participation

Although the Government will continue to play the lead role in waste management and planning, it will foster participatory partnerships with the County governments, private sector, formalised informal sector, civil society organisations, international agencies and media

Policy Statements

National government will:

- (i) Promote international collaboration to harness best practices, technology and resources for waste management.
- (ii) Strengthen partnerships for implementation of the waste management hierarchy especially hazardous waste through the Basel convention and other bilateral programs.

Concurrent

National and County governments will:-

- (i) Ensure industries align their waste management approaches and priorities to this policy.
- (ii) Develop and implement a partnership strategy targeting diverse stakeholders
- (iii) Enhance coordination of partnerships engagements.
- (iv) Promote and facilitate regional waste management approaches for certain types of wastes where economic viability is a challenge.

3.5.6. Research and knowledge management

Technological innovation, which involves expanding and adapting existing waste management technologies to the national or local context requires not only strong capabilities of the various actors but a strategy to build, enhance and maintain the requisite human resource capacity. Waste management is a dynamic paradigm and requires consistent research and innovation as new waste streams are released regularly. Universities and research institutions play a critical role in generating data to guide decision making as well as innovation development. Currently, there is inadequate research being carried out on waste management.

Research data handling requires enhanced coordination to enhance its availability to all players. Currently, research data is scattered in diverse libraries and portals and there is inadequate coordination. In this regard, knowledge management will be strengthened to play a critical role in guiding waste planning and interventions.

Policy Statements

National Government will:-

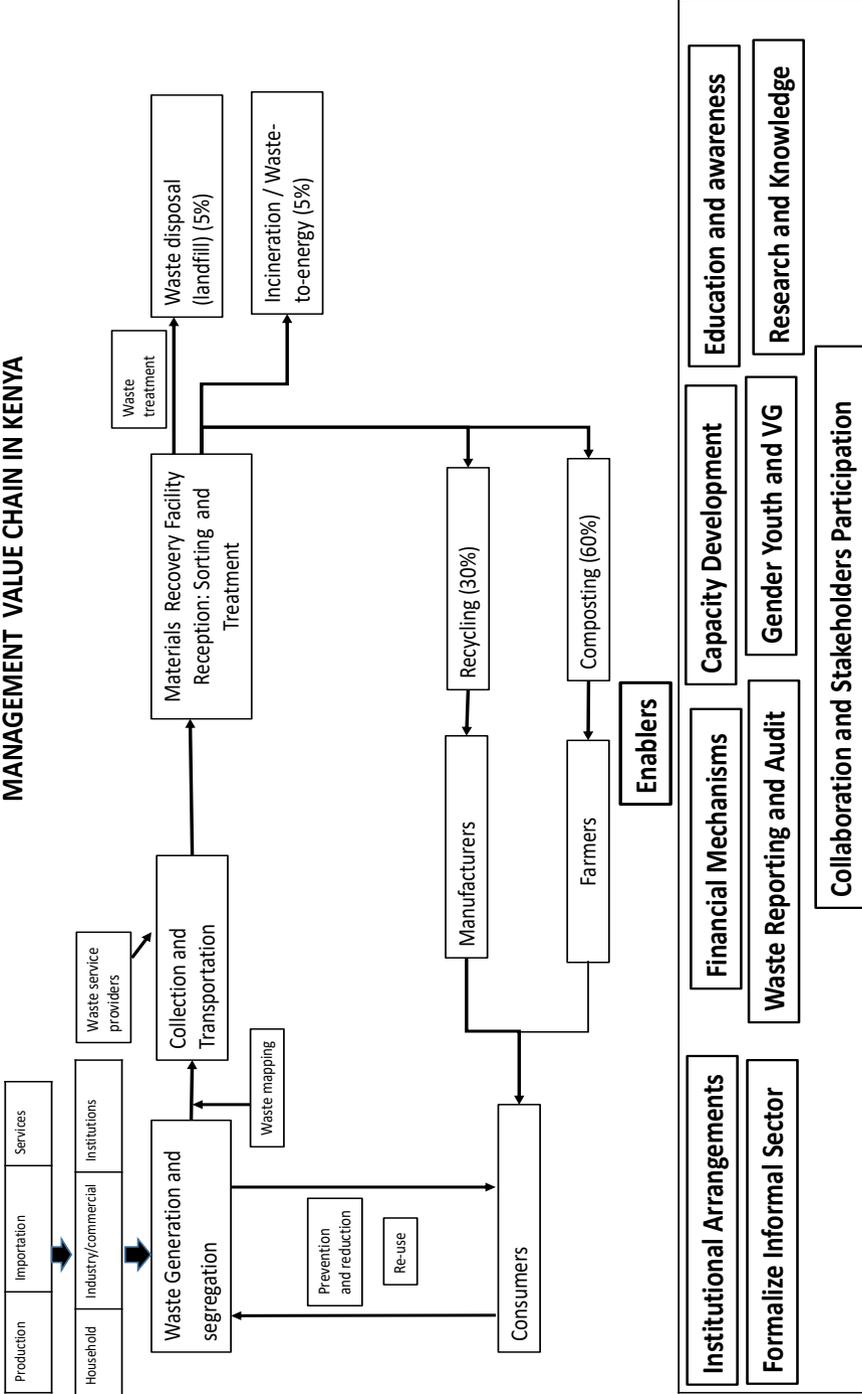
- (i) Enhance the capacity of the public and private sectors, civil society and research institutions to develop and utilise technological innovations for waste management.
- (ii) Establish waste and material recovery research and training institution to build professional waste management capacity in the country.
- (iii) Develop a portal to share waste related data and information.

Concurrent

National and County governments will:-

- (i) Identify research and technology needs and promote strategic and systematic waste management-related research, impact and vulnerability assessments, and technology development and diffusion.
- (ii) Enhance linkages between government, academia, private sector, civil society and global sustainable waste management innovation institutions.

CONCEPTUAL MODEL FOR THE PROPOSED CIRCULAR ECONOMY FOR WASTE MANAGEMENT VALUE CHAIN IN KENYA



Definition of terms

Circular Economy – An economic system aimed at minimising waste and making the most of resources. This regenerative approach is in contrast to the traditional linear economy, which has a 'take, make, dispose' model of production.

Waste hierarchy – the order of management preferences for waste management which considers the prevention of its generation as the first alternative; then its recovery, which includes the preparation for reuse, the recycling of one or more of its components and the energy recovery of the waste, leaving as a last alternative final disposal in an engineered landfill.

“domestic waste” means waste generated from residences that are not hazardous;

“extended producer responsibility measures” means measures that extend a person's or a firm’s financial or physical responsibility for a product to the post-consumer stage of the product,

Materials Recovery Facility (MRF) – A materials recovery facility (MRF) is a specialized plant that receives, separates and prepares recyclable materials for marketing and subsequent use in terms recycling of the dry materials and composting of the organic materials and processing of secondary raw materials.

“recovery” means the controlled extraction of a material or the retrieval of energy from waste to produce a product;

“recycle” means a process where waste is reclaimed for further use, which process involves the separation of waste from a waste stream for further use and the processing of that separated material as a product or raw material;

“re-use” means the action or practise of using something again, whether for its original purpose or to fulfil a different function;

“sustainable waste management” means using material resources efficiently to cut down on the amount of waste produced, and where waste is generated dealing with it in a way that actively contributes to the economic, social and environmental goals of sustainable development;

“toxic substances” means any substance, which on entry into an organism through ingestion, inhalation and dermal contact is injurious, causes physiological, or biochemical disturbances or otherwise causes deterioration of the functions of the organism in any way;

“waste” means any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, or that is intended or required to be discarded or disposed of, by the holder of that substance, material or object, whether or not such substance, material or object can be re-used, recycled or recovered and includes all wastes as municipal waste, domestic waste, waste from agriculture, horticulture waste, aqua culture waste, forestry waste, construction waste, medical waste, chemical,

hazardous and toxic industrial waste, pesticide and toxic substances, but does not include radioactive waste; or any other substance, material or object that is not mentioned above but may be defined as a waste by the Cabinet Secretary by notice in the Gazette. Any waste or portion of waste ceases to be a waste once an application for its re-use, recycling or recovery has been approved by the Authority or, after such approval, once it is, or has been re-used, recycled or recovered; or where approval is not required, once a waste is, or has been re-used, recycled or recovered.

“waste management facility” means any site or premise used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premise, reducing, recycling, reusing, storage, conversion into other useful products like energy, manure and disposal of waste;

“waste minimization or reduction programme” means a programme that is intended to promote the reduced generation and disposal of waste;

“waste valorisation” means any activities aimed at turning waste into useful products including materials, chemicals and sources of energy and also by reusing, recycling, or composting from wastes; and

“waste management hierarchy” – the waste management hierarchy is an order of priority actions for proper waste management to minimize public health and environmental impact. It stipulates an integrated approach to waste management by establishing an order for reduction and management of waste to extract maximum value from resources and generation of minimum waste. Waste prevention, as the preferred option, is followed by reuse, recycling, recovery including, as a last option energy recovery and safe disposal in an engineered landfill.

“zero waste principle” means designing and managing products and processes to reduce the volume and toxicity of waste and materials, and conserve and recover all resources, and not burn or bury them, so that waste is understood as a resource that can be harnessed to create wealth, employment and reduce pollution of the environment.