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MINISTRY OF ENVIRONMENT AND FORESTRY

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National Sustainable Waste Management Policy

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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 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-pickers' sector to improve livelihoods, improving landfill operations and management including capturing and utilizing gases like methane emitted from landfills. In addition closing open dumpsites; capping landfills, reducing plastic pollution in the marine environment, and creating new jobs in the sector, especially for youth and women, in waste collection and recycling will be other benefits.

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 finally disposed to a well-engineered and regulated landfill. As Kenya's economy and cities grow at accelerated rate consequent to devolution, 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. This National Waste Management Policy commits the government to 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 the necessary regulatory environment that will enable Kenya to effectively tackle the waste challenge, through adoption of waste hierarchy and circular economy. This will include processing activities aimed at reducing or preventing waste generation and

reusing of materials. Effective and affordable waste collection in all neighbourhoods where waste will be separated at source, collected as per determined schedule for dry and wet waste. 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 materials recovery facilities (MRFs). At materials recovery facilities materials extracted from waste will be managed in order of priority, with the first priority being recycling and composting of organic waste; only the sorted residual materials should then go to a waste-to-energy or landfill facility. Waste should be treated to reduce toxicity or negative impact to the environment. Final disposal should be to an engineered landfill that is regulated and controlled. The policy propagates for a zero waste approach where minimum waste is disposed to the landfills.

To promote sustainable waste management as an income generating venture through circular approaches and the policy seeks to, create an enabling policy and regulatory environment that will incentivize and facilitate the establishment of multiple links for circularity in the waste value chain that are currently missing in Kenya. The 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.

The constitutional framework of public administration established that 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. 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 burden through reduction of pollution, improvement of public health, and promote green entrepreneurship thus create green jobs and wealth locally from waste collection, r and recycling, 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 the full 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, contaminating rivers and positing 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, non-point run off and sewage waste to Kenya's water bodies. It is also important that the policy and law build on public involvement in the sector 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 during implementation of this policy. 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

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 both rural and urban translating to 8 million tonnes annually. It is estimated that 40% of the waste could be urban. Given that urbanization is increasing by 10%, by 2030, the Kenya urban population will be generating an estimate of about 5.5 Million tonnes of waste every year, which is three times more the amount of waste generated in 2009. Past inventories indicate a national average estimate of 60% - 70% of waste is organic waste, 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. Therefore, as population increases and rates of production and consumption increases too, the estimated volumes of waste generated from households, industries, agricultural services, construction, health care facilities will increase exponentially. Nevertheless, the volumes stated above are estimates as at the moment 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, there is not so much distinction of the various waste categories and, all the waste from households, industries and health care facilities can be referred to as municipal waste and is often unsorted and contaminated. This overburdens and pollutes Kenya's land, air and water resources. 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 commitments to the environmental protection. Article 42 in the Constitution of Kenya (COK 2010) acknowledges that every person has the right to a clean and healthy environment. The Kenya Vision 2030 sought to relocate Dandora dumpsite as well as develop flagship functional compliant and sustainable waste management systems in Nairobi, Kisumu, Eldoret, Nakuru, Thika, and Mombasa by the year 2030. The National Environment Policy 2014 proposed the development of the National Waste Management Strategy which led to the development of the National Waste Management Strategy in 2015. The Environment Management and Coordination Act Cap 387 and subsidiary regulations provide the framework of managing waste in Kenya. The ban of the polythene carrier bags in 2017 contributed a positive impact towards minimising solid waste generation in Kenya.

However, the regulatory frameworks are based on linear models and do not have adequate provisions for circular model to waste management. There is need to redefine waste and the whole waste management approach especially on need to extract total value of resources from waste before disposal and where waste is only disposed or incinerated only if it cannot be recycled. The Constitution of Kenya 2010 devolved waste management to the 47 county governments. However these devolved units have inadequate framework for managing waste ranging from waste management infrastructure, county laws, and inadequate capacity and technologies to support sustainable waste management in Kenya. The constitutional assignment of waste management to counties requires counties to align their waste management approaches to the waste hierarchy priority and circular models for sustainability.

1.2. Negative Impacts of Waste

Environment Protection entails devising strategies to protect and reclaim the environment in order to establish a durable and sustainable system of development. Waste is one of the most imminent environmental challenges in the growing urban areas in Kenya today. Its management, or lack thereof has major implications to health, environment, economy and the society at large. Lack of good waste management affect negatively the environmental quality indicators such as aesthetics, ecology and human health. Reducing these negative impacts requires best practices in the way waste is generated, stored, transported and disposed.

Bad practices with negative impacts to air, water and soil quality need to be stopped, When materials are burnt, pollutants are released to the air, water soil and life support systems. These negative impacts need to be minimized by introducing best technologies and environmental practices.

1.3. Waste Management at the Counties

The counties are centres of socioeconomic growth for both urban and rural populations. However there is no county with a developed infrastructure for waste management as exhibited by the current situation of linear fashion of waste generation to collection, transportation and disposal at sites that poses serious environmental challenges.

The population trends indicate rapid urbanisation, fuelled by both natural growth and rural-urban migration and therefore increased waste generation. The most recent UN 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. Management of this waste will strain 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, it will continue to pose further socio-economic, environmental and institutional challenges for Kenyan cities if adequate measures for waste management are not put in place.

County Governments have made tremendous progress in waste management through various strategies including purchase of skips for waste dumping, sweeping the streets and markets, regular collection of waste and development of by-laws, engagement of private firms to enhance waste collection and transportation and disposal. However, poor linkage to policy, planning and budgetary allocation at the grass root levels, poor coordination of departments dealing with waste and lack of a proper waste management system are some of the problems counties are grappling with in waste management.

1.4. Assessment of Waste Management Services

Waste Management services predominantly at the moment include collection, transportation and disposal. Currently, only about 40% of the population receive waste management services and in many parts of major cities, low income and informal settlements do not have waste collection systems There is no systematic waste segregation at source and the recovery of recyclable items

like plastics, papers, glass and metals is done by informal groups who mostly recover the materials directly at the dumpsite.¹ The composition of the domestic waste streams directed to dumpsites varies considerably across counties and different locations based on a number of factors including income, residential area, waste management services and opportunities to divert materials for recycling.

1.4.1 Waste Management Services at the Counties

The 47 County Governments' play a significant role in providing efficient and effective solid waste management services to the citizens of Kenya. They are required to build effective waste management systems that would lead to reduction, minimisation, and increase scale of recycling, composting, treatment and regulation of final disposal of the waste. Most counties have zoned specific areas for waste operation which are partially fenced, they have dumpsites that are mostly manned during the day, there no segregation of waste at source. The main challenges facing waste management in the counties include inadequate financing, poor infrastructure and technology, lack of public awareness on good sanitary practices, inadequate legal and regulatory frameworks. Counties are yet to upgrade to landfills and are still using dumping sites for waste management. County Governments collect garbage from undesignated dumpsites in most informal settlements. Without proper control, waste in most counties is often dumped in abandoned quarries, forests, open fields, rivers or similar sites therefore exposing the residents to environmental hazards and disease risks. In most counties, the structure of waste management is not well defined. With increasing economic prosperity, increasing population and subsequently urbanization, county governments are further challenged by collection, recycling, treatment and disposal of the ever increasing quantities of solid waste. The new role assigned to counties on waste management requires counties to align their waste management approaches to the waste hierarchy priority and circular economy models for sustainability.

1.4.2 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. They also supply bins, liners and collection bags. They mostly provide services to residential, commercial and industrial entities. In most upmarket residential areas, garbage is collected twice a week, while in middle income areas, waste is collected once a week. Franchising system for collection, transportation and disposal has also been tried by a number of counties, where a county is zoned and private sector firms assigned to deliver waste management services to the designated zones. The firms are in charge of both fee and waste collection. This approach also has not been efficient as the firm's exhibit monopolistic tendencies, infighting over contracts between individual entities and assigned firms in the zones and sustainability challenges as they are impacted by political change of county administration.

The system is also heavy reliant on to public sector for enforcement and therefore mountains of garbage are still a common feature in most residential and market place and by the road sides. In addition, the private sector waste management companies involved in collection of waste solely, often are accused of illegal disposal of waste in rivers, by the road sides, quarries or even dispose

¹ NEMA. The National Solid Waste Management Strategy. August, 2014

illegally disposal at the dumpsites. In addition, there is no framework to guide fee charges of the private sector waste management companies, thus most of them collect waste for a fee too high that the majority of the Kenyan population, especially in informal settlement and marginalized urban areas cannot afford.

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 impossible. Where recycling rates remain significantly below their potential. If recycling is to be done, the collectors have to incur a cost to clean the material before selling to third parties. This makes recycling expensive. Recycling companies are faced by a number of challenges including opaque regulatory requirements, multiplicity of licences and charges, lack of distinction in licensing of waste collection and recycling and recycling sites often perceived as dumping sites as opposed to materials recovery centres.

The private sector investment is expanding waste in collection, transportation, waste sorting at material recovery facilities, recycling and production of marketable products from recovered materials. There are also intentions to invest in waste to energy facilities, and secure engineered landfills for final disposal of the non-recoverable fraction of the waste stream. Currently there is inadequate regulatory, technical and economic support.

The high level of privatisation of waste management services by counties without proper regulation and supervision has also led to uncoordinated delivery of waste services to citizens. While private sector is key in sharing responsibility for waste management, institutionalising and regulating the services provided by private sector waste management firms is crucial in order to harmonise approaches to waste management in Kenya.

1.4.3 Community Solid Waste Management Initiatives

There are community solid waste management initiatives established by various communities' and youth and women groups in Kenya and are engaged in waste collection, sorting enhancing reuse and recycling of waste. The members of the CBO often collect recyclable materials or pay street families to do so. Most of the groups have used the proceeds of their services to uplift the livelihoods of their members. The challenges they face include technical challenges for scale up and lack of standards for recycled products, patenting of products and limited access to finance.

1.4.4 Informal Sector

Nationally, domestic waste is not adequately managed. In the informal settlements, the situation is compounded by lack of ownership of the garbage and lack of collection points and many inhabitants of such areas opt to through their garbage to nearby rivers, drainages, roadsides or undesignated areas. On the other hand, most of the materials is recovered by the informal groups and 'street families' from the dumpsites which often assists them eke a living. They recover materials such as plastics, papers, glass and metals from the dumpsites. They are exposed to foul odour, health risks as they often do not have protective cover; they are exploited and are often perceived as criminals.

From the above, there is therefore need for sustainable and integrated waste management that enhances industrial and economic growth, improves public health and safety, not only in the cities and towns, but also of the marginalized urban communities and rural communities.

1.4.5 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 societal culture, sense of accountability in waste management, mind-set and behaviour shift is key in the adoption and implementation of efficient waste management system in Kenya.

Kenyans have set the global pace in demonstrating how citizens can drive and sustain good waste management practices through the adoption of the ban on plastics. They have consistently supported environmental initiatives including general clean ups.

While in the past, waste management responsibility has solely been perceived as a government responsibility, this policy acknowledges that all individuals generate waste and mainstreams the role of citizens in waste management by adopting the mantra “my waste, my responsibility”.

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 very key in the realisation of circular economy in waste management. The policy places fundamental responsibility of preventing the generation of waste from products, sorting of waste at source, returning goods and packages collected under the system of deposit, payment of waste management services to every individual, household and homeowners in Kenya.

The citizens will be also monitor and voice compliance by ensuring that their neighbourhoods’ are kept clean and any illegal dumping of waste within their areas of residence is reported. The implementation of this policy will thus require citizen support through embracing circular economy and holistic waste management approaches

1.5. National Legislative and Regulatory Framework for Waste Management in Kenya

- The Constitution of Kenya (CoK) article 42 states that every Kenyan citizen has a right to a clean and healthy environment that includes the right to have the environment sustainably protected through legislations and other measures. It also devolved solid waste management to the 47 county governments. This is implemented through various policy and regulatory frameworks as follows:
- Environmental Management and Coordination Act Cap 387 and the EMCA Waste Management regulations (2006) provides a general framework for waste management in Kenya and provides a guide for licensing, transportation and disposal of waste. The generator of waste, transporter, recyclers and institutions that own disposal facilities have obligations to ensure the activities do not deprive citizens the above constitutional right.
- The Waste Management Regulations- 2006 provide a framework for managing the environment including waste management and classifies waste as hazardous and non-hazardous waste, with a focus on transportation, disposal licensing and burying of waste

- National Environment Policy 2013 acknowledges that unsustainable consumption and production patterns leads to excessive waste generation and calls for development of integrated national waste management strategy, promotion of economic incentives to manage waste and promotion of clean production, waste recovery, recycling and reuse.
- The National Environmental Management Authority (NEMA) Waste Management Strategy (2015) aims to create a 7R oriented society in Reducing, Rethinking, Refusing, Recycling, Reusing, repairing, refilling. Focus areas being waste collection, transportation, and disposal and licensing. The order prescribed by strategy of the 7R is not in any environmental waste management priority. The strategy also focused attention on the 5 urban centers proposed by Vision 2030.
- Gazette Notice number 2356 of February 2017 totally banned ban on the manufacture, sale, export and importation of plastic carrier bags in Kenya. The ban of the polythene carrier bags effected in August 2017 contributed a positive impact towards minimizing waste generation in Kenya.
- Kenya Nationally Determined Contribution waste is considered a key mitigation sector for the reduction of green gas house emissions. Nationally Appropriate Mitigation Action (NAMA 2016) proposal for a Circular Economy Solid Waste Management Approach for Urban Areas in Kenya was developed by the MENR in 2016. The NAMA concept include 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.
- Additional instruments’ include Kenya vision 2030, Draft chemical regulations, 2019, Pest Control Products Act, Cap 346 Asbestos guidelines, Air quality regulations 2014, E-waste guidelines (2014)
- The following regulations are currently under development or approval:
 - E-waste management regulations.
 - Asbestos handling and disposal guidelines.
 - Regulations on used oil, waste tires and plastic wastes
 - End of life tires regulation.
- Counted number of counties have enacted waste management laws, a few have developed draft solid waste management bills or validated solid waste management strategy while most of them are yet to start the processes of developing appropriate policies and laws to guide waste management in their counties.
- The Sustainable Waste Management policy therefore provides a holistic framework for sustainable management of waste in Kenya and the transition from linear models of collection, transportation and disposal of waste to the adoption and effective implementation of the waste hierarchy and circular economy that gives preference to avoidance of waste, waste minimization, recycling, reusing and controlled disposal to landfills while having less priority to incineration for human health and environmental protection.

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

Disposal of waste can also influence local and international trade. In this regard Kenya is also a party/ signatory to the following international agreements where waste policy is critical.

Implementation of multilateral environmental agreements and participation in the global debate on waste gives Kenya valuable insights on what Kenya needs to do in order to its improve waste management approaches.

Table1. International Conventions and Multilateral Waste Management Related Agreements Ratified by Kenya

Multilateral Environmental Agreement	Ratification Date	Provisions
Montreal Protocol on substances that deplete the ozone layer	Ratified on 09/11/1988	A global agreement to protect the ozone layer by phasing out production and consumption of ozone depleting substances such as chlorofluorocarbons and halons using innovative and flexible approaches.
UN Framework Convention on Climate Change	Ratified on 30/08/1994	<p>Calls upon parties to protect the climate system for the present and future generations by taking precautionary measures to anticipate, prevent, minimise the causes of climate change and mitigate its adverse effects.</p> <p>Kenya committed to reduce its Green Gas House emissions by 30% compared to a business as usual scenario of 143 MtCo2 emissions.</p>
Basel Convention on the Trans-boundary Movement of Hazardous Waste and their Disposal	Ratified on 01/06/2000	It obligates parties to reduce trans boundary movement of waste, minimise toxicity of hazardous waste and ensure waste disposal and recovery is as close as possible to the source of generation.
Stockholm Convention on Persistent organic pollutant	Ratified on 24/09/2004	Requires all parties to take measures and reduce the release of persistent organic pollutants that can lead to serious, health defects including certain cancers birth defects, dysfunctional immune system and reproductive system and damage to central nervous system.
Minamata Convention on Mercury	Signed on 10/10/2013	Is a global treaty to protect human health and environment from adverse effect of mercury. It includes the ban on mercury mines and phase out of use of mercury in a number of products.
Amendment to the Basel Convention to include Plastics	Amended on 13/04/2019	This was amended and obligates parties to reduce trans-boundary movement of plastic waste, minimise pollution of plastic waste and manage

		plastic waste as close as possible to its source of generation.
Bamako Convention 1998		Bans the import to Africa and controls trans boundary movement and management of hazardous waste within Africa.

Kenya is party to the “Transforming our world: the 2030 Agenda for Sustainable Development”. Sustainable Development Goal 11 strives to “Make cities and human settlements inclusive, safe, resilient and sustainable”. Target 11.6 requires member states to “by 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management”. Goal 12 sets out how to “Ensure sustainable consumption and production patterns”. Target 12.3, requires member states to “by 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses”. Target 12.4 aims to “by 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment”. Target 12.5, requires member states to “by 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse”.

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.

1.7. Overview of Challenges of Waste Management in Kenya

The following barriers have prevented Kenya from consistently implementing a sound management and disposal of solid waste:

1.7.1 Regulatory and Policy Barriers.

Although a significant body of legislations on solid waste is in place, it is evident that an enormous gap exists between the laws and their implementation.

- Collection and transportation of waste is carried out in an informal way.
- In many cases, waste is not collected and remains near the residential areas where it is produced and burnt for volume reduction.

- Lack of reliable waste manifest system to keep track waste generation, collection, transportation and disposal.

1.7.2. Social- Economic Barriers:

- Change perception of waste, “nothing is waste, until it is wasted”
- Introduction of a waste hierarchy economy aimed at recycling valuable resources from waste is still missing.
- Development the economic model for waste recycling not centred on the dumpsite itself:
- Appreciating the role of informal communities who are self-organized for collecting waste and buyers who go directly to the dumpsite to buy waste.
- Consider the low quality of waste segregated and resold at the dumpsite which has the detrimental effect to depress the market for recycled materials, therefore perpetuating the poverty of people relying on the dumpsite waste.
- Support to communities who resist any modification on the municipal waste management because of poor performance of previous attempts and because they perceive that modifications may hinder their only source of income.
- The access to the national market for recycled material is not well organized.
- It is very common to see buyers buying recycled waste at the dumpsite, with the double effect to impoverish the communities because of the low price offered, and to spoil the country of valuable resources which if better used could contribute to the creation of jobs and business opportunities.

1.7.3 Financial and infrastructural barriers

- Inadequate budgetary allocation and funding of waste management sector and infrastructure
- Challenge in sustainability/maintenance/upgrade and waste infrastructure
- Inadequate waste collection receptacles, transfer stations, waste treatment
- Lack of materials recovery facilities and engineered landfills.

1.7.4 Technology and knowledge barriers

- Inefficient/lack of appropriate technology
- Knowledge gap of waste hierarchy and circular model concepts in for the sector

1.8. Gaps to be addressed

The common way for managing waste in Kenya is open dumping and open burning of industrial and health care waste without any substantial environmental control from the equipment and facilities of disposal. The Policy intends to address the following gaps:

- Shift from waste to materials extraction of total value of waste

- Segregation at source, proper collection, waste sorting at materials recovery facilities, recycling and composting, waste treatment and disposal of all waste material to avoid environmental contamination;
- Inculcating timely inventories on quantities and types of waste generated;
- Restriction of importation or dumping of hazardous waste material into the country as per the Basel and Bamako conventions;
- Information dissemination, documentation and knowledge management on waste matters;
- Monitoring of establishments dealing with waste and enforcement of the legal framework relating to waste management;
- Minimisation of toxic emissions as guided by the Stockholm Convention on Persistent Organic Pollutants

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 to create wealth and prosperity in the country by providing an enabling environment for integrated waste management and minimization of waste generation, to contribute to a circular economy.

2.2. Objectives

The objectives of this Policy are to:

- (i) Promote sustainable waste management through implementation of the waste hierarchy and circular economy concepts.
- (ii) Enhance mapping, planning, segregation, collection, transportation and audit of waste.
- (iii) Strengthen the institutional framework that enables and enforces integrated planning, budgeting, decision-making and implementation, at both the national and county level.
- (iv) Set up transparently managed financial mechanisms at national and county level to invest in waste management infrastructure.
- (v) Engage, strengthen and build partnerships with all stakeholders, including private and informal sector, as well as the general public, including education for responsible waste management behaviour.

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 Constitution, 2010 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) **Principle of Environmental Protection:** there is need to balance socio-economic development and environmental protection. In undertaking waste management, all entities and individual shall provide high level of human, health and environmental protection.
- (iv) **Principle of Proximity:** to minimise environmental impact and transport costs, in accordance to the principle of proximity, waste shall be processed, treated and disposed as much as possible to the location of its generation.
- (v) **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.

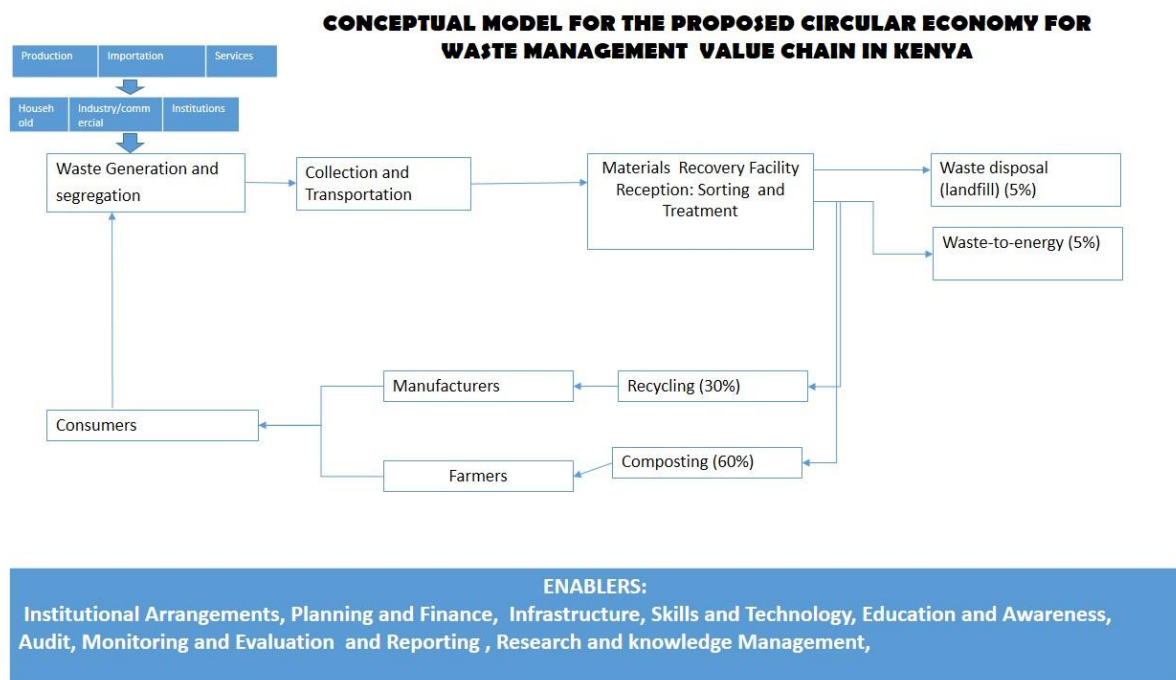
- (vi) **Polluter pays principle:** the principle that those who produce pollution or waste should bear the costs of managing it to prevent damage to human health or the environment. Makes the party responsible for polluting responsible for paying damage done.
- (vii) **Zero Waste principle:** the principle 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. The Waste hierarchy establishes preferred program priorities based on zero waste principle and sustainability. The standard outline of the hierarchy ranks 6 approaches to waste management. In order (most preferable to least preferable) these are: prevention, minimisation, reuse, recycle (including composting), energy recovery and disposal.
- (viii) **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.
- (ix) **System of deposit;** When buying certain products, the buyer shall pay a certain added value to the price of the product, which shall be returned to him/her upon restitution of the used products and the packaging to the seller, provided that there is a possibility for the used products and the packaging to be processed, for which they need to be labelled in a manner established by law and another regulation.
- (x) **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 delivery in recycling and waste management.
- (xi) **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.
- (xii) **Equity and social inclusion:** ensuring a fair and equitable allocation of effort and cost, as well as ploughing back of benefit's in the context of the need to address disproportionate vulnerabilities, responsibilities, capabilities, disparities, and inter- and intra-generational equity. The communities that benefit from sustainable waste

management shall be actively involved in planning, decision-making and oversight of waste management activities. Capacity development, finance, training and labour standards shall be availed to formalize the full integration of waste pickers in the sustainable management of waste, including management systems.

- (xiii) **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.

CHAPTER THREE: POLICY INTERVENTIONS

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 emission of green gas houses and boost green economy and create new jobs in green entrepreneurship and resource management industry. 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 the diagram below.



3.1. Objective 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

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.

Proposed Policy Statements

National Government shall

- (i) Develop a national waste management law that prioritises and enforces the waste hierarchy across the country.
- (ii) Develop 5 year national zero waste management plan assessing status of waste have management and long term approached for national waste prevention programmes and approaches, future trends prediction and measures to ensure achievement of zero waste status.
- (iii) Support county governments to establish waste management infrastructure for source segregation, standards and design for materials recovery facilities' and engineered landfills.
- (iv) Review and align regulations for E-waste, medical waste, chemicals, pesticides' and radioactive waste in accordance to this policy.

County Government shall:

- (v) Align place county waste management laws and strategies to the waste management hierarchy.
- (vi) 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.
- (vii) Establish and improve waste management infrastructure to promote source segregation, collection, reuse, set up materials recovery facilities and controlled disposal in engineered landfills.

3.1.2 Policy Measures for 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 much as possible through integrating waste reduction in production processes, use of eco-friendly inputs and packaging, better design of to enhance durability, reusability and recyclability and use of , 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:

Proposed Policy Statements

National Government

1. The Ministry responsible for environmental affairs shall develop a 5 year rolling national zero waste strategy that prioritises waste prevention, education and awareness programme.
2. Ministry responsible for environmental affairs in consultation with the National Treasury and government procurement agencies shall develop framework for adoption of green procurement in public sector procurement by prioritising purchasing of b locally produced goods and recycled products to boost green jobs and reduce negative impact of transportation.
3. National government shall develop economic instruments frameworks that promote waste prevention at industrial production.
4. The ministry responsible for environmental affairs in consultation with ministry responsible for industrialisation and standards authority shall 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 shall:

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

3.1.3. Policy Measures for Re-use

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.

Proposed Policy Statements

National Government shall:

1. 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.

2. 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 shall

1. Provide well managed central collection centres for materials that can be harvested from waste that can be reused.

3.1.4. Policy Measures for 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:

Proposed Policy Statements

National Government shall:

1. Develop a 10 year national strategy for circular economy in Kenya reviewed every 5 years.
2. 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.
3. 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”
4. Enhance transparency and accountability, national government shall 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 an 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.
5. Develop regulations on handling end of life vehicles, machinery and equipment.
6. Stimulate development of a market for recycled materials in partnership with authority responsible for standards shall develop and promulgate product standards for recycled materials and organic compost.
7. Develop and promulgate quality standards for recycled materials and secondary raw materials that will be developed in partnership with the authority responsible for standards.
8. Create a regulatory environment that promotes a functional market for waste and recycled materials without compromising quality standards, public health and environment.
9. Put in place measures and economic instruments to reduce need for virgin materials in favour of local recyclable materials in production process.

10. Spur development and competitiveness of the recycling and materials recovery sector by initiating a mechanism for exempting recycling business from presumptive tax, turnover tax and recycled materials from VAT.
11. The ministry responsible for environment affairs shall institute regulations to require commercial properties such as hotels, office buildings, hospitals to ensure that at least 50% of their produced waste is recycled through a licensed service provider.
12. 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 shall:

1. Develop a 10 year county strategy for circular economy in Kenya reviewed every 5 years.
2. Create a County regulatory environment that promotes a functional market for waste and recycled materials without compromising quality standards, public health and environment.
3. Spur development and competitiveness of the recycling and materials recovery sector by initiating a market and mechanism within the county procurement system to prioritise recycled materials.
4. Institute county regulations to require county institutions to ensure that at least 50% of their produced waste is recycled through a licensed service provider

3.1.5. Policy Measures for Composting/ Biological Processing of waste

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 shall:

1. 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.
2. The ministry responsible for environmental affairs in consultation with the ministry responsible for agriculture and Standards agency shall develop guidelines and standards and review relevant legislation to mainstream and recognise compost and organic fertiliser.

3. 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.
4. Develop a public information and awareness campaign to disseminate the benefits of composting as technology in waste management.

Concurrent

1. The national and county government shall 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 shall:

1. Identify and prioritise potential sites for setting up composting plants and financial requirements of setting up composting technology in the county.
2. Establish clear procedures for providing incentives to encourage private sector participation in composting ventures.

3.1.6. Policy Measures for Waste Treatment before Disposal

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

Proposed Policy Statements

Waste Management Entities

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

National Government

1. Minister responsible for environmental affairs shall 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.
2. The Minister responsible for environmental affairs shall 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.

3. Put in place a framework for enhancing access to both local and internationally best practices, technological advancements, and technical process development for waste treatment.
4. Develop health and safety standards for all waste treatment facilities in consultation with ministry responsible for occupational standards.
5. In consultation with ministry responsible for technical education and the ministry in charge of environmental affairs shall develop standard competency based training curricula for waste treatment operators.

County Governments shall:

1. Domestic waste treatment before disposal in County legislation.

Waste management facilities

1. The recyclers, bio-waste processors and material recovery facilities shall obtain environmental compliance licences from NEMA.

3.1.7. Policy Measures for 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.

Proposed Policy Statements

National Government Shall:

1. Develop guidelines for closure and decommissioning of existing dumpsites.
2. Ban all open burning of all waste at both household, commercial and institutional level.
3. Prohibit disposal of hazardous waste including, e-waste and asbestos in dumpsites and landfills.
4. Ban disposal of unsorted waste to dumpsites and landfills and shall adopt Materials Recovery Approach.
5. Ban disposal of electronic waste, recyclables and biodegradable waste in existing dumpsites.

County Governments' shall:

1. Develop a 3 year plan to transit from the current dumpsites and adopt landfilling for residual waste.
2. Develop regulations and levying structure to promote the closure of open dumpsites and establish engineered landfills for disposal of non-recoverable fractions of wastes only.

3.1.8. Policy Measures for Landfilling-(Disposal)

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 odors. 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

Proposed Policy statements

National Government shall:

1. 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.
2. All landfills operations shall be automated and shall be managed by a waste manager with requisite academic and technical competences as prescribed by the Cabinet Secretary in charge of environmental affairs.
3. 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.
4. Develop a public private partnership and concession framework for establishment and operation of landfills by private operators.
5. Institute landfill tax to divert waste from landfills and dumpsites.
6. Ban landfilling of all biodegradables or recyclates.
7. 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.
8. Prohibit landfilling and incineration of electronic wastes, infectious waste and radio-active wastes which should be accorded separate handling management and disposal.
9. Waste disposal shall be undertaken with the best available technologies, equipment and knowledge.

10. Landfills operators shall engage full-time managers and install requisite weighing and recording facilities at engineered landfills to prevent illegal dumping and facilitate accurate report of waste volumes.

Concurrent

1. The national and county governments in consultation with the Ministry responsible for lands and urban planning shall 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 shall:

1. 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).
2. 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.

3.1.9. Policy Measures for Incineration (Waste to Energy)

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

Proposed Policy Statements

National Government shall:

1. Develop incineration guidelines and regulations to ensure that all waste-to-energy programs conform to the waste hierarchy and set of international conventions that Kenya is party to.
2. Develop guidelines and regulations for proper waste incineration activities for non-recyclable waste and medical waste.
3. Review and align all existing incineration regulations and align with maximum extraction of value from waste before disposal while ensuring that incineration is the option of last resort and applicable only after all the higher level waste hierarchy priorities have been exhausted.

3.2. Objective 2: Enhance Mapping, Planning, Segregation, Collection, Transportation and Service Provision of Waste Management.

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 Policy Measures for 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.

Proposed Policy Statements

National Government shall:-

1. Map current waste streams composition and value chain in Kenya and establish national baselines.
2. Institute a national data collection system 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.
3. 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.
4. Incorporate waste management indicators into the National Integrated Monitoring and Evaluation System
5. 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 shall:-

- 1 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.
2. Shall incorporate waste management indicators into the County Integrated Monitoring and Evaluation System.

3.2.2 Measures for 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:

Proposed Policy Statements

National Government shall:-

1. Develop regulations that require all Institutions, businesses, commercial trading, Industrial, residential and property developers to provide source segregation receptacles at their premises.

2. Ministry responsible for environmental affairs in collaboration with ministry responsible for housing and construction shall design standard waste segregation receptacles' to be mainstreamed in building designs.
3. 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.
4. Develop harmonised regulations and guidelines for the minimum waste fractions for sorting at source at household, business, industrial and institutional levels.
5. 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.
6. Carry out national public awareness on waste segregation categories, colour codes and national campaign on importance of sorting at source.

Concurrent

1. National government shall streamline and harmonise national and county government regulations on licensing of sorting sites to avoid double licensing and make waste management more attractive to investors.

County Government shall:-

1. Enforce waste fractions segregation at source based on the national gazetted minimum waste fractions for all waste generators including household level.
2. 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.
3. 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. Policy Measures for 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 manufactures 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 back to economy loop. The following policy measures shall apply to waste collection:

Proposed Policy Statements

National Government shall:-

1. Develop regulations and guidelines for nationwide collection and transportation schedules in respect to waste fractions segregated at source.
2. Develop regulations on management of construction waste.
3. 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.
4. The Ministry responsible for environment shall develop regulations for deposit return system and requirements for system operations, coordinator, administrators and operators.
5. The ministry responsible for environmental affairs in consultation with the standards and labels agency shall provide regulations and standards for refund marking of products and containers under the deposit return system.
6. The ministry responsible for environment affairs in consultation with ministry responsible for trade and industry, and the ministry responsible for finance shall specify materials and packaging subject to be managed under compulsory deposit return system.
7. National Government in consultation with the authority responsible for labels and standards shall 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
8. Develop and formalize trade-in, take-back schemes, and innovative approaches for collection of specific reusable products, packaging and other recyclable materials.
9. Develop economic incentive including tax measures to incentivise reverse vending machines, balers and compactors to facilitate easy collection of voluminous waste materials.
10. Ensure that all producers label the products or containers with a refund marking in a manner established by law.
11. 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.
12. The construction site manager shall be responsible for transportation of construction waste to the materials recovery facility.
13. Individual citizens shall be responsible for transportation of bulky and abnormal waste they generate to the community collection centre or materials recovery facility.

County Government shall:-

1. Establish “ community and 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.
2. Ensure all citizens have access to waste collection services and receptacles
3. Prescribe the design, the size, construction and maintenance of public waste receptacles for purpose of access and emptying.

4. Authorise placing of waste receptacles on county roads and markets.
5. The property owners, landlords and caretakers be held responsible for waste dumped in front and around their facilities.
6. Ensure Resident Associations shall cooperate with County Government to eliminate waste dumping within their jurisdiction.

3.2.4 Policy Measures for 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.

Proposed Policy Statements

National Government shall:-

1. In consultation with authority responsible for transport design segregated waste transportation designs for trucks and waste transportation vehicles and handcarts including compartments for waste transportation vehicles, single colour for all waste transportation trucks, standard labelling to identify waste service providers.
2. Require compulsory installation of GPS tracking device in waste collection trucks to monitor movement of waste.
3. Develop guidelines requiring all legal entities or individuals handling industrial or non-hazardous waste to provide identification and waste manifest.
4. Review and align all existing waste and recovered materials transport regulations to this policy

Concurrent

1. The national and county governments shall review and harmonise waste transportation charges.
2. National and county government in consultation with ministry responsible for urban planning shall 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 shall:-

1. Ensure that waste service providers transport their waste to materials recovery facility and to a landfill.
2. Ensure waste transportation trucks adhere to air quality regulations.
3. Develop guidelines requiring all legal entities or individuals transporting waste within the county provide tracking documents of source and destination.
4. Ensure that transportation of recycled materials and waste should be conducted in an environmentally sound manner.

3.2.5. Policy Measures for 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.

Proposed Policy Statements

National Government shall:

1. 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.
2. 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
3. Develop guidelines requiring all legal entities or individuals handling waste to provide appropriate tracking documents.
4. Publish annually locations and managers contacts of established and licensed material recovery facilities, recycling facilities, co-processing and energy recovery of waste.

County Government shall:-

1. Ensure that Waste collectors and transporters take their collected waste to materials recovery facilities and not directly to dumpsites.
2. Publish annually a list of licensed organizations offering waste collection and transportation services.
3. Supervise and regulate 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.

3.2.6 Waste Service Providers Collectors and Transporters

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

1. 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.
2. Waste collectors and transporters shall adhere to nationally determined collection and transportation schedules of sorted materials and waste streams.
3. 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.
4. Waste Service 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.

5. Waste service 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.

3.2.7 Policy Measures for 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.

Proposed policy statements

National Government shall:-

1. Set higher gate fees for waste-to-energy and landfill facility than those of MRFs to ensure that materials are moved to MRFs.
2. Ensure the Material Recovery facilities be licensed in accordance with guidelines and regulations developed by the National Environmental Management Authority (NEMA).
3. Ensure MRFs be the only facilities allowed to take waste to engineered landfills.
4. Promote the usage of MRFs, NEMA will issue bin liner licenses to MRFs who will in turn only issue the bin liners to waste collectors and transporters using the specific MRFs. (This will ensure that waste transporters use MRFs while also ensuring that issued plastic waste bin liners will be recovered and sorted for recycling).

Concurrent

The National and County Governments shall:-

1. Ban unsorted waste dumping and shall adopt Materials Recovery approach.
2. Redesign existing dumpsites into Materials Recovery Facility (MRFs) for sorting, processing and recycling solid waste using manual and mechanical methods and be compliant with appropriate safety, health and environmental standards.
3. Redesign existing dumpsites into Materials Recovery Facility (MRFs) for processing and recycling solid waste using manual and mechanical methods and be compliant with appropriate legislation.
4. Facilitate establishment of materials recovery facilities (MRFs) in Industrial and special economic zone or close to an engineered sanitary landfill to facilitate efficient movement of waste from various generators and disposal of residual or biodegradable materials.
5. In consultation with ministry responsible for urban planning shall develop designs, guidelines, and requisite operations for transfer stations for non-hazardous waste intended for storage, processing and disposal as well as designate Material Recovery Facilities (MRF) and develop safety, health, and environmental standards.

County Government shall:-

1. Ensure that Waste collectors are licensed to take unsorted waste materials only to MRFs instead of transporting them to dumpsites directly.
2. Consolidate an annual report of the MRFS and submit to the Ministry responsible for environmental matters.
3. County government shall collect and transport residual waste from MRF to the landfills.

Materials Recovery Facility Operators

1. 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.
2. Ensure all materials recovery facilities automate their operations and record trucks that enter facility (plate number, amount) technical and organizational capacities and provide data quarterly to county governments of materials received, quantities sorted and dispatched or disposed to a landfill.

3.3. Objective 3: Strengthen the institutional framework that enables and enforces integrated planning, budgeting, decision-making and implementation, at both the national and county level.

3.3.1. Policy Measures on 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:

Proposed Policy Statements**National Government shall:-**

1. Review and align current national waste management strategy to the waste management hierarchy and circular model.
2. Establish an inclusive waste management 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.
3. License materials recovery facilities, waste treatment facilities and landfills.

4. Develop a 4 year transition framework for licensing of waste transporters from NEMA to Counties as part of transition provision by this policy.
5. Involved in establishing on public legal redress on waste management matters.

Concurrent

1. Ensure that the waste management enforcement and inspection regime is robust and well resourced.

County Government shall:-

1. Develop county waste management plans aligned to this policy.
2. Licence waste service providers including collector and transporters
3. Mainstream county waste management oversight in the county environment committee.

Citizens

1. 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 Objective 4: Set up transparently managed financial mechanisms on national and county level to invest in 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 to ensure 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.

Proposed Policy Statements

National Government shall:-

1. Adopt a sustainable waste management finance strategy and eligibility criteria that enables implementation of priority actions.
2. Explore possible avenues to attract internal and external sustainable waste management finance, including through foreign direct investment and other multilateral or bilateral funding
3. Ensure sufficient resources for institutions engaged in sustainable waste management education and public awareness.
4. In collaboration with the National Treasury 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.
5. 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

1. The national and county governments shall 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

1. Allocate resources for sustainable waste management actions in county budgetary processes.
2. Build capacity to mobilise and enhance absorption of resources for sustainable waste management interventions.
3. 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.
4. Support waste management enterprises at county level, including those run by vulnerable and marginalized Groups.
5. Oversee sector specific anti-corruption, transparency, accountability and integrity mechanisms to safeguard prudent management of finances.

Citizens and Individuals

1. Waste generators including individuals and households shall contribute to the cost of waste management services.

3.4.2. Policy Measures for 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.

Proposed Policy Statements

County Government shall:-

1. 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

1. National and county governments shall through the national waste management council shall establish annual consultative forum for Waste Management Development and stock taking towards the set waste hierarchy priority targets.

Waste Management Service Providers Reporting and Audit shall:

1. 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.
2. 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.
3. 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.

National Government shall:-

1. Through the ministry responsible for environmental affairs in consultation with national waste management council shall 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.
2. The Cabinet Secretary responsible for environmental affairs shall 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.

3.5. Objective 5: Engage, strengthen and build partnerships with all stakeholders, including private and informal sector, as well as the general public, including education for responsible waste management behaviour.

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. Policy measures on 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

1. Develop a training and certification curriculum for waste management professionals.
2. Enhance the mainstreaming of sustainable waste management in education curriculum at all levels through Environmental Education and extra-curriculum activities.

Concurrent

1. National and County governments shall incorporate sustainable waste management knowledge into governments public awareness initiatives
2. National and County governments shall collaborate with, and support, media, private sector and civil society in incorporating sustainable waste management into their advocacy and public awareness raising programmes
3. National and County governments shall encourage smart purchasing such as buying right amount of goods like food so that none goes to waste.
4. National and County governments shall provide timely information on waste management using diverse platforms including their 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.

Proposed Policy Statements

National Government shall:-

1. Translate the waste hierarchy campaign in local languages for easier understanding of the informal sector.

Concurrent

National and County governments shall:-

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

County Government shall:-

- 1 Assign communal waste collection centres and transfer stations to formalised and organised groups to manage the services
- 2 Mobilise communities especially in the informal settlements and support formation of community based waste management groups or organisations.
- 3 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.

Proposed Policy Statements

National Government shall:-

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

Concurrent

1. National and County governments shall train public officers at ministry and county level as well as private sector and informal groups on the enforcement of the policy
2. National and County governments shall build capacity on segregation, collection,

recycling.

County Government shall:-

1. Prioritize proximity in capacity building and waste management interventions.
2. Develop and implement a sustainable waste management capacity development strategy targeting public institutions (ministries and counties) as well as private sector and informal groups within their jurisdiction

3.5.4 Mainstreaming of Gender, Youth and Special Needs in Sustainable Waste Management

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.

Proposed Policy Statements

1. The County government shall put in place mechanisms to ensure and enhance the participation of the youth and vulnerable groups in sustainable waste management decision-making and implementation
2. National and County governments shall 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

Proposed Policy Statements

National government shall:

1. Promote international collaboration to harness best practices, technology and resources for waste management.
2. 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 shall:-

3. In collaboration with industry shall align their waste management approaches and priorities to this policy.
4. Develop and implement a partnership strategy targeting the mentioned diverse stakeholders and ensure the establishment of partnerships in a coordinated manner.
5. 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.

Proposed Policy Statements

National Government shall:-

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

Concurrent

National and County governments shall:-

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