KISUMU SUSTAINABLE WASTE MANAGEMENT POLICY

DRAFT 4

DEFINITION OF TERMS

Biodegradable Waste:- Means any organic matter in waste which can be broken down into carbon dioxide, water, methane, or simple organic molecules by microorganisms under natural conditions. This includes food waste, garden clippings, manure, and paper products. Biodegradability is a function of chemical structure and environmental conditions, such as moisture and temperature.

Circular Economy:- Means an economic system aimed at minimizing waste and making the most of resources. This involves maintaining the value of products, materials, and resources in the economy for as long as possible, and minimizing the generation of waste. According to the Ellen MacArthur Foundation, the circular economy is based on three principles: designing out waste and pollution, keeping products and materials in use, and regenerating natural systems. It further strengthens the circular economy approach by integrating digital systems and innovation, and referencing successful research initiatives such as Black Soldier Fly (BSF) waste processing.

Composting:- Means the controlled aerobic (oxygen-requiring) decomposition of organic matter by microorganisms, resulting in a stable, humus-like product known as compost. Composting can be carried out on a small scale (household composting) or on a large industrial scale (municipal composting facilities) and is a key strategy for organic waste diversion from landfills.

Extended Producer Responsibility (EPR):- Means an environmental policy approach in which producers are given a significant responsibility—financial and/or physical—for the treatment or disposal of post–consumer products. This principle aims to incentivize producers to design environmentally friendly products and take accountability for their products across the entire lifecycle, including post–consumer waste management (OECD, 2001).

Hazardous Waste:- Means a waste that exhibits one or more hazardous characteristics such as being explosive, flammable, toxic, infectious, corrosive, or ecotoxic. It poses substantial or potential threats to public health and the environment and requires special handling, treatment, and disposal methods. Additionally, the policy incorporates explicit provisions for hazardous waste management, including asbestos handling, greenhouse gas emissions reduction, and phased strategies for safe diaper disposal.

Informal Sector:- In the context of waste management, refers to individuals, groups, or enterprises involved in waste collection, sorting, recycling, and disposal operations who are not formally registered or recognized by authorities. This sector plays a critical role in recycling and resource recovery in many developing countries but often operates without occupational protections or legal rights.

Integrated Solid Waste Management (ISWM):- Means a comprehensive approach to waste management that considers all aspects of the waste hierarchy (prevention, minimization, reuse, recycling, energy recovery, and disposal) and integrates the roles of public and private actors, technical and non-technical elements, and social and environmental considerations. It is promoted by the United Nations Environment Programme (UNEP) as the best practice for sustainable waste management.

Material Recovery Facility (MRF):- Means an intermediate facility where recyclable materials are sorted manually or mechanically into separate streams (e.g., paper, plastic, metals, glass) before being sent to reprocessors. MRFs may be single-stream (mixed recyclables) or dual–stream (source–separated recyclables), and are essential to increase recycling rates and ensure quality

control.

Municipal Solid Waste (MSW):- Refers to waste collected by or on behalf of a municipality. It includes waste generated by households, markets, commercial establishments, schools, offices, institutions, and public spaces. It typically excludes industrial, hazardous, construction, and agricultural waste. MSW management is typically the responsibility of local authorities and is central to public service delivery. Additionally, the policy incorporates explicit provisions for hazardous waste management, including asbestos handling, greenhouse gas emissions reduction, and phased strategies for safe diaper disposal.

Polluter Pays Principle:- Means an environmental policy principle which mandates that the cost of pollution and waste management should be borne by those who cause it. As codified in Principle 16 of the 1992 Rio Declaration, PPP incentivizes producers and consumers to internalize environmental costs in their operations and consumption decisions.

Recyclable Waste:- Means waste materials that can be collected, processed, and remanufactured into new products. Common recyclable materials include paper, cardboard, glass, plastics, metals, and certain electronics. The recyclability of a material depends on the availability of recycling infrastructure and market demand for recovered materials.

Residual Waste: A waste material that remains after all possible recycling, composting, and resource recovery efforts have been undertaken. This type of waste is not suitable for further processing and is usually destined for final disposal through landfilling or incineration. Residual waste management must be done in an environmentally sound manner.

Sanitary Landfill:- A waste disposal site designed and operated in a manner that minimizes environmental impacts. It includes engineered systems for leachate collection and treatment, landfill gas capture, environmental monitoring, and site rehabilitation. According to UNEP, sanitary landfilling is the last resort in the waste hierarchy and must meet strict environmental and public health standards.

Solid Waste Management (SWM):- All activities and actions required to manage waste from its inception to its final disposal and includes generation, storage, collection, transport, processing, and disposal of solid waste. It also includes monitoring and regulation, and the involvement of a range of stakeholders including government, private sector, civil society, and consumers.

Transfer Station:- A facility where waste is temporarily held and consolidated before being transported to a treatment or disposal site. Transfer stations improve the efficiency and economics of waste transport, especially in urban areas where collection vehicles offload smaller waste volumes for aggregation.

Waste Stream: - A waste stream refers to the complete flow of waste from its source through to recovery, recycling, or final disposal. Waste is typically categorized into different streams based on source or type, such as household waste, industrial waste, construction and demolition waste, healthcare waste, electronic waste (e–waste), and organic waste.

Zero Waste: - Is the redesign of resource life cycles so that all products are reused, and no trash is sent to landfills or incinerators. It emphasizes waste prevention at the source and aims for a closed–loop system in which waste becomes a resource. The Zero Waste International Alliance defines it as "the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products."

CHAPTER 1 – INTRODUCTION AND BACKGROUND INFORMATION

1.1 Introduction

Waste management presents a growing concern at global, national, and County levels, driven by escalating populations, rapid urbanization, and evolving consumption patterns. In Kisumu County, these dynamics are particularly pronounced, with swift urban expansion, increased industrial and commercial activity, and the proliferation of informal settlements placing immense pressure on existing waste management infrastructure and systems. The failure to manage solid waste effectively poses severe threats to public health, the environment, and local economic development, especially given Kisumu County's strategic location bordering Lake Victoria and its role as a rapidly urbanizing city.

This policy is designed to provide a structured and inclusive framework to guide Kisumu County in establishing a sustainable and integrated solid waste management system. Its core objectives include streamlining coordination among all relevant actors, promoting circular economy principles to maximize resource recovery, ensuring strict compliance with national regulatory and environmental standards, and ultimately transforming waste from a burden into a valuable economic resource. This policy is envisioned as a fundamental tool for delivering efficient, equitable, and environmentally sound waste management services, thereby advancing the County's broader social, environmental, and developmental aspirations. The policy applies circular economy principles by mandates waste segregation at source across households, markets, and institutions; establishes decentralised processing hubs in each sub–county; and directs organic waste into valuable products to reduce landfill use and protect Lake Victoria.

Additionally, it recognizes sub–county waste profiles, ecological zones, and industrial waste flows, ensuring alignment with the Kisumu City spatial plan and public health priorities. The policy mandates upgrading the Kasese Dumpsite to a sanitary engineered landfill and embeds a monthly countywide clean-up exercise on the 10th of each month.

1.2. Policy Vision, Mission, Objectives, and Guiding Principles

To comprehensively address solid waste management, a robust framework that sets the policy direction for the county government and other stakeholders is essential. This chapter delineates the foundational elements of this policy, comprising its vision, mission, and guiding principles, which will collectively steer its implementation.

1.3. Policy Vision

The vision for Kisumu County is articulated as: "A clean, healthy, and resilient Kisumu County with sustainable, inclusive, and efficient solid waste management system that promotes environmental protection, encourages circular economy, creates green jobs, and improves the quality of life for all residents of Kisumu County". This vision underscores a holistic approach that prioritizes environmental integrity, economic opportunity, and enhanced well–being for all citizens. It further strengthens the circular economy approach by integrating digital systems and innovation, and referencing successful research initiatives such as Black Soldier Fly (BSF), vermiculture, composting waste processing, among other valuable initatives.

1.4 Policy Mission

The mission is defined as: "To protect public health and the environment, as well as drive job and wealth creation, by creating an enabling environment for an integrated sustainable waste management system and contribute to a circular economy". This statement emphasizes the dual goals of safeguarding public welfare and stimulating economic growth through an integrated and sustainable waste management paradigm.

1.5 Policy Goal

The overarching goal of this policy is: "To minimize waste generation, encourage circular economy and promote sustainable use, re–use, recovery and recycling as well as disposal of waste materials". This goal reflects a commitment to moving beyond traditional waste disposal towards a more resource-efficient and regenerative economic model.

1.6 Policy Objectives

The policy is guided by a set of clear objectives designed to translate the vision and mission into actionable outcomes:

I. *Promote Sustainable Waste Management*

This objective aims to ensure environmentally sound practices across the entire waste value chain, from generation to final disposal, thereby minimizing negative impacts on public health and ecosystems.

II. *Enhance Waste Recovery, Recycling, and Reuse*

This focuses on reducing the volume of waste sent to landfills by actively promoting circular economy principles through resource recovery, materials reuse, and various waste–to–value initiatives. The policy promotes reuse and repair markets for textiles, electronics, and fishing gear, develops compost markets for agriculture, and enforces producer responsibility for packaging and plastics.

III. *Improve Waste Collection, Transportation, and Disposal Infrastructure*

The goal here is to increase the efficiency, coverage, and safety of waste collection systems and to ensure the establishment and maintenance of appropriate disposal facilities that meet modern standards, taking into consideration Kisumu County’s local context.

IV. *Strengthen Institutional and Legal Frameworks*

This objective seeks to provide clear roles, responsibilities, areas of collaboration and robust enforcement mechanisms for all actors involved in SWM, encompassing national and county governments, the private sector, development partners and communities.

V. *Promote Public Awareness and Participation*

This involves actively engaging citizens and communities through targeted education campaigns, initiatives aimed at behavioural change, and fostering their participation in the planning and implementation of all SWM activities in the waste value chain.

VI. *Integrate the Informal Sector into Formal Waste Systems*

This critical objective recognizes, supports, and seeks to formalize engagement with informal waste actors, such as waste pickers and recyclers, ensuring their inclusion, fair treatment, and access to economic opportunities within the formal waste management system.

VII. *Mobilize Sustainable Financing for Waste Management*

This objective entails developing and implementing diversified funding mechanisms, including public–private partnerships (PPPs), user fees, and producer responsibility schemes, to support long–term and sustainable investment in waste services and infrastructure.

1.7 Guiding Principles

The following principles will guide the implementation of the solid waste management policy, ensuring a consistent and ethical approach:

I. *Right to a Clean and Healthy Environment*

This principle guarantees every person the fundamental right to live in a safe, pollution–free environment, underscoring the policy's commitment to public well–being.

II. *Inter and Intra–generational Equity*

This principle ensures that the needs of the present generation are met without compromising the ability of future generations to meet their own needs, promoting long–term sustainability.

III. *Public Participation and Inclusivity*

This emphasizes the importance of engaging communities and all stakeholders involved in the sustainable waste management value chain, including informal waste workers, to ensure that waste management solutions are equitable, efficient, and contextually appropriate.

IV. *Integrated Waste Management*

This principle advocates for the use of a coordinated mix of waste handling methods, throughout the waste value chain, to achieve effective and sustainable waste management outcomes.

V. *Partnership and Consultation Principle*

This highlights that solid waste management necessitates inclusive collaboration among all actors, including government entities, the private sector, communities, informal actors, and development partners.

VI. *Polluter Pays Principle*

This principle holds that waste generators are accountable for the costs associated with managing the waste they produce, thereby encouraging responsible behavior and waste minimization at the source.

VII. *Waste Hierarchy (3Rs)*

This core principle focuses on prioritizing waste reduction, followed by reuse, and then recycling, to minimize environmental impact and promote resource efficiency. The policy later expands this to 7Rs, indicating a more comprehensive approach to resource management.

1.8 Scope of the Policy

This Policy applies to all individuals, institutions, and entities involved in the generation, handling, collection, transportation, processing, recycling, and disposal of solid waste within Kisumu County. It covers households, businesses, public and private institutions, informal waste actors, community–based organizations, and licensed waste service providers. It also applies to the County Government of Kisumu, municipal boards, the City of Kisumu and non–state actors including development partners, NGOs, and academic institutions engaged in waste management within Kisumu County.

<u>CHAPTER 2 – SITUATIONAL ANALYSIS</u>

2.2 Kisumu County Size, Location, Political and Administrative Units

Kisumu County is geographically situated between longitudes 33° 20’E and 35° 20’E and latitudes 0° 20’S and 0° 50’S. It shares borders with Homa Bay County to the South, Nandi County to the Northwest, and Siaya County to the West, and is uniquely surrounded by Lake Victoria, the world's second–largest freshwater lake. The county spans approximately 2086 km^2 of land, representing 0.36% of Kenya’s total land area, with an additional 567 km^2 covered by water bodies. Administratively, Kisumu County is divided into eight Sub–Counties—Kisumu East, Kisumu West, Kisumu Central, Nyando, Kadibo, Seme, Nyakach, and Muhoroni—which are further subdivided into thirty–five wards. The county is further divided into 5 towns and a city. These five towns are namely:- Kombewa–Bodi, Maseno, Ahero–Awasi, Katito–Pap Onditi and Muhoroni. These administrative divisions provide the foundational framework for localized governance, planning, and the delivery of essential services, including solid waste management.

Kisumu City, the third largest city in Kenya and the largest urban center in the western region, holds a strategic position on the northeastern shores of Lake Victoria. It serves as a pivotal economic, political, and transportation hub within the Lake Region Economic Bloc (LREB) and the broader East African region. The city's urban core has experienced rapid urbanization and significant population growth, attracting considerable commerce, infrastructure development, and a thriving informal sector. However, these developments have concurrently led to escalating challenges in managing solid waste, particularly in densely populated urban neighborhoods such as Manyatta, Nyalenda, Obunga, Kondele, and Kibos. As the city continues to expand, so too does the volume and complexity of waste generated, encompassing a diverse range from household and commercial waste to medical and electronic waste.

2.3 Population and Demographic Profile

The population of Kisumu County, according to the 2019 Kenya Population and Housing Census, was 1,155,574 persons, with 560,942 (48.5 percent) males and 594,609 (51.5 percent) females. The county population is currently estimated at 1,227,702 and is projected to reach 1,484,366 by 2030. This rapid growth and high density, particularly in urban areas, directly correlate with increased solid waste generation and pose significant challenges for efficient waste collection, transportation, and disposal infrastructure, necessitating robust Sustainable Waste Management administration, financing and planning.

The average household size in the county is 3.8, compared to the national average of 3.9, with Nyando and Nyakach having sizes of 4.2 each, and Kisumu Central being the lowest at 3.3. Variations in household size across sub–counties influence per capita waste generation patterns and require tailored collection strategies. The County's average population density, according to the 2019 Kenya Population and Housing Census, stands at 554 per sq. kilometre against the national average of 82 per sq. kilometre. The most densely populated Sub–County is Kisumu Central at 4,737 persons per square km, while Muhoroni Sub-County is the least at 234 persons per square km. According to the 2019 Kenya Population and Housing Census, the population of street persons was 451, of which 315 were males and 136 were females. The county’s 2019 population structure is typical of a population dominated by young persons, with the categories between 0-9, 10-19, and 20-29 age groups having the largest populations of 288,735, 299,427, and 209,826 respectively. The cohort with the lowest population is 70-79 and 80+ years as shown in the Table below. While a large young population can contribute to higher consumption and waste generation, it also presents both a challenge and an opportunity for solid waste management and also indicates a significant potential workforce for green jobs in the waste value chain and a receptive audience for public awareness and behavioral change campaigns.

Table 1: Kisumu County Population Distribution by Age

S/No	**Age Category (years)**	**Population**
1	0–9	288,735
2	10–19	299,427
3	20–29	209,826
4	30–39	153,081
5	40–49	85,557
6	50–59	52,613
7	60–69	38,263
8	70–79	19,419
9	80+	8,603

Source: Kenya National Bureau of Statistics (2019) Kenya Population and Housing Census; Volume IV Distribution of Population by Socio-Economic Characteristics, December 2019

Pursuant to the 2019 Kenya Population and Housing Census, there were a total of 39,929 persons with disability, of whom 23,580 were female and 16,349 were males. The presence of a significant population with disabilities underscores the need for inclusive SWM services, ensuring accessibility of waste collection points and participation opportunities in waste management initiatives. Table 2 below shows the distribution of the population aged 5 years and above by type of disability.

Table 2: Distribution of Population Aged 5 Years and Above by type of Disability.

S/No	**Type of Disability**	**Number**

1	Visual	17,606
2	Mobility	16,196
3	Cognitive	8,190
4	Hearing	7,291
5	Self–care	4,288
6	Communication	3,409

Source: Kenya National Bureau of Statistics (2019) 2019 Kenya Population and Housing Census: Volume IV Distribution of Population by Socio-Economic Characteristics, December 2019

2.3 Education and Literacy.

The Kisumu County literacy levels are fairly high, with 90.8% of the population aged 15+ able to read and 83.4% able to write, while 81.1% of the population are able to read & write. High literacy levels, particularly in urban areas, provide a strong foundation for effective public awareness campaigns on waste segregation, reduction, and recycling, which are crucial for the success of this policy. Table 4 below shows the distribution of population age 3 years and above by highest level of education reached in Kisumu County.

Table 3: Distribution of Population Age 3 Years and Above by Highest Level of Education Reached and Sex in Kisumu County.

Level of Education	Total	Male	Female
Pre–primary	104,468	52,242	52,226
Primary	492,849	234,090	258,748
Secondary	258,761	127,868	130,889
TVET	73,246	36,108	37,137
University	45,701	26,912	18,787
Adult Education	741	365	376

Madrasa / Duksi	48	28	20
Don't Know	1,989	1,12	861
Not Stated	302	148	154
Total	**978,105**	**478,889**	**499,198**

Source: Kenya National Bureau of Statistics (2019) 2019 Kenya Population and Housing Census: Volume IV Distribution of Population by Socio-Economic Characteristics, December 2019

2.4 Information Communication and Technology

According to the 2019 Kenya Population and Housing Census, a total of 524,515 (49.4%) of individuals aged 3 years and above owned a mobile phone. More females (271,786) than males (252,715) owned a mobile phone. Generally, mobile phone penetration is high, and the coverage by the major service providers (Safaricom, Airtel and Telkom) is basically reliable. The use of internet and computers is, however, low with only 253,426 (23.9%) using the internet and 133,434 (12.6%) using computers. The high mobile phone penetration offers a valuable channel for disseminating SWM information, facilitating waste collection requests, and engaging citizens in digital waste management initiatives, while the lower internet and computer usage in rural areas highlights the need for diversified communication strategies. The ownership and usage of selected ICT equipment and services in Kisumu County is presented in Table 5 below.

Table 4: Distribution of Population Age 3 Years and Above Owning a Mobile Phone and Using Internet and Computers by County and Sub County

Sub County	**Mobile Phone Ownership**		**Internet Use**		**Tablet / Computer Use**	
	Total	%	**Total**	%	**Total**	%
Kisumu East	109,698	54.2	58,879	29.1	29,987	14.8
Kisumu Central	97,762	61.6	69,939	44.2	41,096	26.0
Kisumu West	78,440	49.6	37,566	23.9	21,037	13.4
Seme	48,931	43.5	16,203	14.4	7,583	6.7
Muhoroni	61,248	43.4	21,854	15.5	10,428	7.4

Nyando	67,104	44.9	26,699	17.9	12,813	8.6
Nyakach	61,332	43.8	22,286	15.9	10,49	7.5
County	**524,515**	**49.4**	**253,426**	**23.9**	**133,434**	**12.6**

Source: Kenya National Bureau of Statistics (2019) 2019 Kenya Population and Housing Census: Volume IV Distribution of Population by Socio-Economic Characteristics, December 2019

Radio was the popular household asset owned by 65% of households, with households in rural sub counties accounting for a larger share of an average 68.9% (Seme (68.8%, Muhoroni (70.9%), Nyando (65.2%), Nyakach (70.7%)) compared to those in the city sub counties accounting for an average of 61.8% (Kisumu East 58.4%, Kisumu Central (63.8%) and Kisumu West (63.2%)). Other important ICT related assets owned by the households were Computers (9.8%), functional TV (45.1%), Analogue TV (6.5%) and internet (20.0%).

Table 5: Percentage Distribution of Conventional Households by Ownership of Selected Household Assets by Area of County and Sub County.

Sub–County	Stand–alone Radio	Computers/ Laptop / Tablet	Functional TV	Analogue TV	Internet
Kisumu East	58.4	11.3	53.8	7.2	23.5
Kisumu Central	63.8	23.6	66.8	9.6	45.7
Kisumu West	63.2	8.9	44.0	6.6	18.5
Seme	68.8	3.5	27.3	4.1	7.3
Muhoroni	70.9	4.0	35.6	5.3	9.9
Nyando	65.2	5.3	36.8	5.6	11.3
Nyakach	70.7	4.2	32.7	5.2	8.6
County	**65**	**9.8**	**45.1**	**6.5**	**20.0**

Source: Kenya National Bureau of Statistics (2019) 2019 Kenya Population and Housing Census: Volume IV Distribution of Population by Socio-Economic Characteristics, December 2019

Rapid urbanization has accelerated solid waste generation, creating a growing demand for efficient and sustainable waste management services. Urban centers concentrate most of the economic activities—including manufacturing, processing, tourism, hospitality, and fishing industries—which produce large quantities of diverse waste streams, from organic and fishery waste to plastics and industrial by–products, thereby complicating disposal and recycling efforts. While agriculture also contributes organic waste, the majority of high-volume, complex waste originates from urban economic hubs. The low education levels among many residents, with nearly 40% having only primary or no formal education, further emphasize the necessity of targeted interventions to improve waste management practices.

2.5 Legal and Policy Context

Kisumu County's Sustainable Waste Management Policy is anchored in Kenya's constitutional and devolved governance framework. Article 42 of the Constitution guarantees every person the right to a clean and healthy environment, while Articles 69–70 impose duties on the state and provide enforcement mechanisms to protect that right. Under the Fourth Schedule, counties are assigned refuse removal, solid waste disposal, and sanitation services, making Kisumu the primary duty bearer for day-to-day waste service delivery. This mandate operates within national framework laws and standards, notably the Environmental Management and Coordination Act (EMCA) and its subsidiary instruments, including the Environmental Management and Coordination (Waste Management) Regulations, 2024, which codify the waste hierarchy, segregation at source, licensing, tracking, and environmentally sound management of diverse waste streams. Complementary governance statutes—the Urban Areas and Cities Act, the County Governments Act, the Public Health Act, the Water Act, the Occupational Safety and Health Act, and the Public Finance Management Act—collectively shape service design, permitting, public participation, occupational safety, effluent and leachate control, and ring-fenced financing for county waste systems.

At the core of the national policy and legislative regime is the Sustainable Waste Management Act, 2022, which operationalizes Kenya's transition to a circular economy. It requires source segregation, progressive elimination of open dumping and burning, development of materials recovery facilities and engineered sanitary landfills, county integrated waste management plans, and extended producer responsibility (EPR) for priority products in tandem with the EMCA Extended Producer Responsibility Regulations, 2022. The National Sustainable Waste Management Policy (2021) and the National Solid Waste Management Strategy (2015) further set out the waste hierarchy, 7Rs, and practical pathways for resource recovery, composting, and formal integration of the informal sector. Market-shaping measures such as the plastics carrier bag ban (2017) complement these instruments. Kisumu's policy gives effect to this framework by legislating mandatory segregation, regulated transport and MRFs, phased closure and rehabilitation of illegal dumpsites, sanitary landfill development with leachate and gas capture, formalization and protection of informal workers, and ring-fencing of revenues into a Sustainable Waste Management Fund in line with the PFM Act and through PPPs consistent with the PPP Act.

The County's approach is also aligned with Kenya's climate, health, and international obligations, applying a One Health lens given Kisumu's proximity to Lake Victoria and the dependence of people, livestock, wildlife, and aquatic ecosystems on clean environments. The Climate Change Act and Kenya's NDCs recognize methane mitigation from organic waste through composting, biogas, and landfill gas recovery; EMCA requires EIAs for facilities; and the Water Act governs effluent and leachate protection of water bodies. Internationally, Kenya is party to the Basel Convention (including its plastic amendments), the Bamako Convention, the Stockholm and Minamata Conventions, and it has committed to SDGs 11 and 12—together requiring hazardous waste controls, sound transboundary movement procedures, and reduction of waste generation through prevention, reuse, and recycling. Within this context, Kisumu will domesticate national provisions through a Kisumu County Sustainable Waste Management Act, establish clear roles with NEMA and other agencies, adopt EPR-linked collection systems, and implement robust monitoring and reporting—ensuring legal coherence, environmental integrity, and public health protection across the full waste value chain.

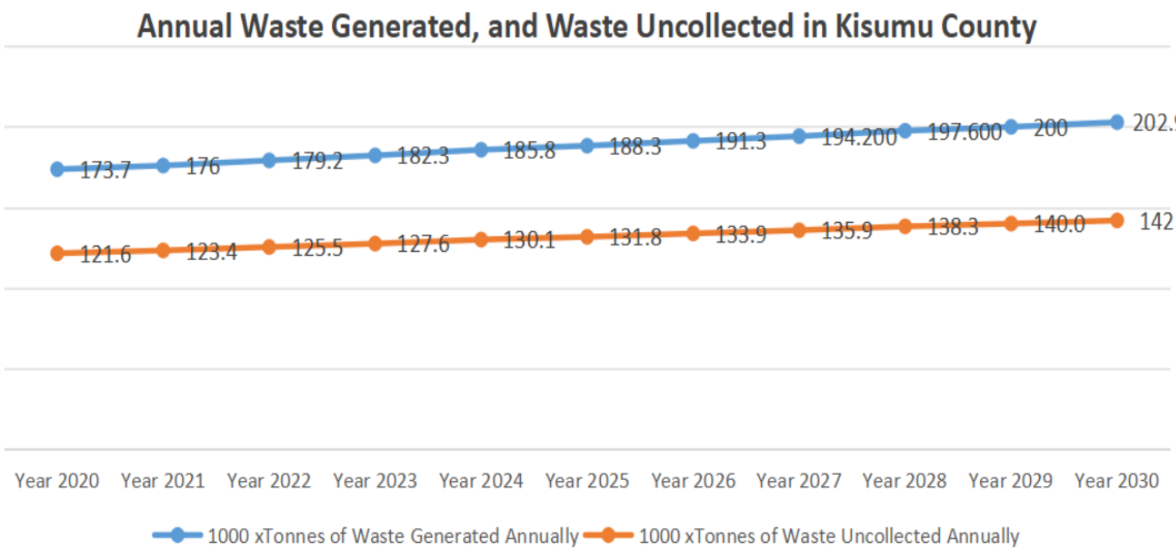
2.6 Topographic and Climatic Profile

The county's physical and topographic features also present unique challenges for solid waste management. The undulating terrain includes the Kano Plains, a flat stretch lying on the floor of the Rift Valley, the Nyabondo plateau, and large granite rock formations at Riat Hills, Maseno, and Seme areas. The Kano Plains, characterized by rich alluvial soils, are prone to flash flooding, which frequently spreads unmanaged waste into waterways and farmlands. Conversely, steep and rugged areas pose considerable difficulties for accessing and conducting waste collection and disposal operations. The county's abundant water resources, including Lake Victoria and several major rivers, are highly vulnerable to pollution from unmanaged solid waste, threatening public health, aquatic ecosystems, and the region's potential for a sustainable blue economy.

Kisumu's climatic conditions further complicate waste management efforts. The county experiences a warm climate with minimal monthly temperature variations and two distinct rainy seasons: long rains from March to May and short rains from September to November. These periods of high rainfall frequently lead to overflowing waste bins, blocked drainage systems, and increased waste runoff into rivers and Lake Victoria. The combination of heavy rainfall and poorly drained soil types, particularly the black cotton soils prevalent in the Kano Plains, exacerbates the spread of waste-related pollutants. This makes waste collection and disposal challenging during wet seasons, as access roads can become impassable and waste is easily washed into open fields and water bodies, contributing significantly to environmental pollution. Additionally, high temperatures and prolonged dry spells, such as those typically experienced in January, accelerate the decomposition of uncollected waste, resulting in foul odors, pest infestations, and heightened health risks, particularly in densely populated urban settlements. These climatic and ecological realities underscore the critical need for season-sensitive and terrain-specific solid waste management strategies in Kisumu.

2.6 Current Practices on Solid Waste Management in Kisumu County

Kisumu County, a vital urban, commercial, and transportation hub situated on the shores of Lake Victoria, is currently grappling with escalating challenges in solid waste management (SWM). Rapid urbanization, continuous population growth, evolving consumption patterns, and industrial development have collectively led to a significant increase in both the volume and complexity of waste generated across the county. Current estimates indicate that Kisumu generates between 400 to 500 metric tonnes of solid waste daily. However, a substantial portion, approximately 60-70% of this waste, remains uncollected or is improperly disposed of in open spaces, drainage channels, and near water bodies. This deficiency in formal collection and disposal results in heightened public health risks, pervasive environmental pollution, urban flooding, and the degradation of the delicate Lake Victoria ecosystem.



Source: Directorate of Environment and Natural Resources, Unpublished data (2025) (A county per capital waste generation of 0.4 kgs was adopted in this computation with a collection efficiency 30%)

The composition of waste in Kisumu County is predominantly organic, accounting for over 60% of the total waste generated, with the remainder comprising plastics, paper, glass, metals, and hazardous materials. Despite this composition, which presents significant opportunities for resource recovery, the county lacks an effective and efficient system for waste management, including segregation at source, recycling, composting, or conversion into energy or other valuable resources. Consequently, valuable materials are routinely lost to landfilling and informal dumping, representing a missed economic opportunity.

In rural areas of the county, solid waste is primarily disposed of by households through traditional methods such as pits or open burning. Biodegradable waste, including agricultural or food waste, is often repurposed as animal feed or composted to produce manure for agricultural production. Non-biodegradable waste, such as containers, is frequently reused for various household purposes. In contrast, urban areas, characterized by high population density, generate the majority of municipal and industrial waste in substantial quantities. Most of this urban solid waste is disposed of in open grounds, without any form of recycling, reuse, or recovery. This open disposal practice has a continuous negative impact on environmental health through leachate contamination and direct flow into water sources, in addition to contributing to general public health nuisances. Furthermore, there is limited investment in solid waste recycling and recovery systems across the county.

Waste collection and transportation from households, commercial establishments, and industrial sites within the county are mainly undertaken by the private sector. While the county government provides some solid waste collection and transportation services in public areas and has strategically placed waste collection bins and containers in urban centers, these efforts are currently below the desired optimal level. The county government also manages the Kasese dumpsite, which operates as an open ground dumpsite.

Although some improvements have been made, the dumpsite remains poorly managed and does not meet prescribed environmental health standards. Despite budgetary allocations through the annual county budget for solid waste collection, these allocations have consistently been below the necessary financial investment required for effective solid waste management. Overall, the county's waste management practices are fragmented and largely informal, leading to pervasive environmental degradation, significant public health risks, and economic inefficiencies.

Other important waste streams that pose challenges in Kisumu include industrial effluent, waste water, dignitary waste, industrial hazardous waste, Hospital waste, aggro–veterinary waste, asbestos amongst others.

2.7 Status of Waste Streams and the Integrated Solid Waste Management (ISWM) Framework in Kisumu County

Effective solid waste management fundamentally relies on a clear understanding of the various types of waste generated (waste streams), their origins (sources), and the full spectrum of activities involved in managing them. Waste is typically classified to facilitate effective management, and a single source, such as a household, can produce multiple waste streams, including food and kitchen waste, agricultural waste, papers, and e-waste. Distinct methods are employed for collecting, recovering, processing, treating, and disposing of different waste streams. Broadly, waste is categorized into hazardous and non-hazardous, with their management differing significantly due to potential health risks and environmental impacts. Additionally, waste can be classified as municipal solid waste, industrial waste, or post-consumer waste. The waste streams identified in Kisumu County are classified based on their characteristics and sources :

I. **Organic/Biodegradable Waste** This constitutes the predominant waste stream, estimated at over 60% of the total waste generated, primarily originating from households, agricultural produce/food markets, hotels, and restaurants.

II. **Recyclable Materials** - These include paper (12.2%), plastics (10.2%), glass (3.2%), and scrap metal (1.3%).

III. **Hazardous Materials:** - These are waste types that pose potential health risks due to their inherent hazardous nature.

IV. **Electronic Waste (e-waste):**- This specialized waste stream is increasingly managed by dedicated collectors.

V. **Healthcare Waste:** - Generated specifically from health facilities.

VI. **Construction and Demolition Waste:**- Derived from construction and demolition activities.

VII. **Residual Waste:**- Materials that cannot be reused, recycled, or otherwise processed, destined for final disposal.

VIII. **Municipal Solid Waste:** - Primarily generated in urban areas from households, markets, institutions, and commercial establishments.

IX. **Industrial Waste:** - Generated from manufacturing, processing, tourism, hospitality, and fishing industries.

X. **Post–consumer Waste:** A broad classification encompassing waste generated after product consumption.

The modern approach to effective and sustainable waste management is widely known as Integrated Solid Waste Management (ISWM) which adheres to principles such as Equity, Effectiveness, Efficiency, and Sustainability for its successful implementation. Equity ensures all citizens are entitled to appropriate waste management for environmental health. Effectiveness means the chosen model leads to safe waste removal. Efficiency involves maximizing benefits, minimizing costs, and optimizing resource use while considering equity, effectiveness, and sustainability. Sustainability ensures the system is appropriate to local conditions and feasible from technical, environmental, social, economic, financial, institutional, and political perspectives, maintaining itself over time without exhausting resources. The Directorate will create resource recovery parks with cooperatives and private investors, integrating material recovery, composting, recycling, and repair facilities while formalising the role of informal waste workers.

2.8 Challenges and Gaps in Solid Waste Management in Kisumu County

Effective waste handling and storage at the point of generation are foundational to the efficiency of the entire solid waste management system. This initial stage necessitates the adoption of stringent public and environmental health standards. To facilitate the reduction, recycling, and recovery of solid waste, waste separation or segregation at the source is considered essential. Currently, Kisumu County struggles with poor solid waste handling, storage, and separation practices at the source, particularly in urban areas due to high population density and limited awareness of sustainable waste handling, separation, and storage processes. Common challenges include the co-mingling of organic and inorganic waste in the same containers, open storage of waste, or disposal in outdoor open places directly from the point of generation, which poses significant threats to public and environmental health.

Beyond mixed municipal waste, Kisumu faces acute gaps in the safe handling of electronic waste (e–waste), hazardous waste, and industrial waste. Despite the presence of some dedicated e-waste collectors, large volumes of small electronics, batteries, cables, and appliances still enter mixed household and market streams, where informal storage, dismantling, or burning releases heavy metals and persistent pollutants. Hazardous wastes—including healthcare and agroveterinary wastes, used oils and solvents, pesticides, contaminated packaging, asbestos from demolition, and expired chemicals—are frequently co-mingled with general refuse, stored without secondary containment, or transported without manifests, heightening risks of occupational exposure and environmental release. Industrial activities across manufacturing, processing, hospitality, and fisheries generate sludges, by-products, and process residues that are often uncharacterized and lack dedicated collection and treatment pathways. These practices undermine source segregation, overwhelm downstream recovery, and enable illegal dumping and open burning. From a One Health perspective, leachate and runoff during rains can mobilize toxic constituents into drains, wetlands, and Lake Victoria, with potential bioaccumulation in fish, contamination of livestock feed and soils, and elevated community health risks (respiratory and dermal exposures, vector proliferation). The absence of a comprehensive hazardous waste inventory, limited licensed treatment capacity, weak chain-of-custody and tracking, and insufficient public awareness together constitute a systemic gap that requires urgent, county-specific protocols for classification, segregated storage, licensed transport, and environmentally sound treatment and disposal.

The various stages of Solid Waste Management, their current situation, existing gaps, and areas requiring policy intervention are as follows:

I. Waste Generation

Kisumu City generates approximately 400 to 500 tonnes of solid waste daily. However, only about 20% to 25% of this waste is collected and transported to designated disposal sites like the Kasese dumpsite. The remaining 75% to 80% accumulates in open spaces, along roadsides, and in informal settlements, leading to pervasive environmental degradation and public health risks. The composition of waste in Kisumu is predominantly organic, accounting for about 63%, followed by paper (12.2%), plastics (10.2%), glass (3.2%), scrap metal (1.3%), and other materials (9.5%). The inadequate waste collection infrastructure, coupled with limited financial resources and a general lack of public awareness, contribute significantly to the prevalence of open dumping and burning practices. These practices not only pollute the environment but also pose serious health hazards to residents. Despite efforts by the county government to collect and dispose of waste, systemic issues such as insufficient enforcement of waste management practices, inadequate technical capacity, and limited public participation continue to impede progress.

II. Solid Waste Collection

Waste collection represents the point at which generated waste (from residential, industrial, commercial/markets, and institutional sources) is transferred, often unsegregated, to a point of treatment, recovery, or disposal. Uncollected waste inevitably leads to public and environmental health hazards, including the spread of diseases, public nuisance, blockage of drainage systems, and seepage of waste into water and soil. Within Kisumu City, waste collection is primarily undertaken by private waste collectors who are assigned specific zones, typically categorized by income levels (low, middle, and upper income areas). In all these zones, waste is generally not separated at the point of collection. Waste within major and minor markets is aggregated in skips and refuse chambers, usually located within the markets, awaiting transportation. Individual informal hand pickers play a crucial role in collecting "fly–away" waste within the city, which may then be directed to skips or directly to Material Recovery Facilities (MRFs). However, some urban localities lack organized waste collection services, leading to environmental and health challenges associated with open disposal. Other persistent challenges include inadequate waste collection points and containers or bins, as well as funding for waste collection services. The Directorate will lead in the development of resource recovery parks in concert with cooperatives and private investors, integrating material recovery, composting, recycling, and repair facilities while formalising the role of informal waste workers.

III. Solid Waste Transfer and Transportation

This stage is a critical component of the SWM value chain, involving the efficient movement of waste from local collection points to treatment or final disposal sites such as landfills, recycling plants, or waste-to-energy facilities. This stage acts as a crucial link between primary collection and downstream waste management processes, ensuring continuity, cost-effectiveness, and environmental safety. However, Kisumu County faces several factors contributing to inefficiencies in waste transportation. Firstly, the county's waste collection infrastructure is inadequate, with many areas, particularly informal settlements, being inaccessible to waste collection vehicles due to poor road networks. This forces waste collectors to often rely on less efficient handcarts that cannot handle large volumes of waste. Secondly, the county's waste management department faces financial constraints, limiting its ability to acquire and maintain a sufficient fleet of waste collection vehicles. This shortage disrupts regular waste collection schedules, resulting in irregular or almost non-existent services in some areas. Lastly, weak regulation enforcement often leads to unlicensed operators, improper handling, or even illegal dumping, further complicating transportation efforts. To address these challenges, Kisumu County has initiated interventions, including the establishment of the Maendeleo Waste Recovery Center to enhance recycling and reduce the volume of waste requiring transportation. Additionally, the county has engaged private waste collectors through public-private partnerships, issuing permits for door-to-door waste collection to improve transportation efficiency. Municipal waste within the city is transported using handcarts and open canters by private collectors, while the county government uses open trucks. Approximately 30% of collected materials are transferred to material recovery facilities within the county, of which six exist, with two being fully operational. Despite these efforts, systemic issues like insufficient policy enforcement, inadequate technical capacity, and limited public participation continue to hinder progress.

IV. Solid Waste Separation, Processing, and Transformation

This stage is among the most vital segments of the SWM value chain, focusing on extracting value from waste through sorting, treating, and converting materials into usable resources or safer forms for disposal. It plays a central role in advancing circular economy principles by promoting resource recovery, reducing landfill volumes, and minimizing environmental harm. Kisumu County faces significant challenges in waste segregation and collection due to rapid urbanization, inadequate infrastructure, and limited public awareness. As noted, the county generates substantial daily waste, but a large portion remains uncollected and unsegregated. A 2024 survey revealed that approximately 60% of households do not separate their trash, impeding recycling efforts and contributing to environmental accumulation. To counter this, Kisumu County has launched several initiatives, including the Maendeleo Waste Recovery Center, which focuses on recycling and

selling plastic waste. Pilot projects in areas like Ondiek Estate promote household waste segregation, composting, and recycling, aiming to reduce waste sent to dumpsites. Community- based organizations (CBOs) are crucial, with the Kisumu Zero Waste Project partnering with local CBOs to promote segregation, leading to the formation of the Miya Ywech Association, which operates a Material Recovery Facility (MRF). Private waste collectors also utilize MRFs, separating waste into organic, plastic, glass, metals, wood, boxes, and paper, with about 20% of materials finding their way to these facilities. Specialized e-waste collectors have their own dedicated streams, and various technologies like Black Soldier Fly (BSF) larvae processing and composting are adopted at MRFs. However, challenges persist, including inadequate funding, a shortage of skilled personnel, and poor public attitudes towards waste management. The county also lacks a structured system for the comprehensive separation, processing, and transformation of solid waste into useful materials, leading to most urban waste being disposed of in open dumpsites.

V. Solid Waste Disposal

The disposal stage represents the final step in the solid waste management value chain, involving the permanent placement of waste materials that cannot be reused, recycled, or otherwise processed. While it is the least preferred option in the waste management hierarchy, safe and efficient waste disposal remains essential to protect public health and the environment, ensuring that residual waste does not cause pollution or pose risks to communities and ecosystems. In Kisumu County, approximately 70% of unrecovered waste is directed to the Kasese landfill. However, most solid waste generated in the county is disposed of through uncontrolled dumping in open grounds within public areas, posing significant threats to public and environmental health. The existing landfills in the county are poorly sited, particularly in relation to residential areas, and do not meet appropriate environmental standards. The county currently lacks a sanitary landfill, meaning that disposed waste directly impacts the environment and water resources. Other challenges include limited land availability, especially in urban areas; weak regulatory enforcement, which contributes to illegal dumping and poorly managed sites; insufficient funding for disposal facilities, which require substantial capital and operational investments; and a lack of comprehensive data, leading to poor waste characterization and inadequate record-keeping, thereby hindering effective planning and monitoring of waste quantities and types.

2.9 Cross–Cutting Issues

Effective solid waste management is not merely a technical challenge but a complex developmental issue intertwined with various cross–cutting aspects of governance, finance, land use, and social inclusion.

I. Solid Waste Management Financing

The mobilization, allocation, and management of financial resources are critical for the effective planning, implementation, and sustainability of waste management services, encompassing collection, transfer, treatment, recycling, and final disposal. Adequate and predictable financing is essential for ensuring continuous service delivery, developing and maintaining crucial infrastructure (such as landfills, transfer stations, and recycling facilities), procuring necessary equipment and vehicles, promoting innovation in waste treatment and resource recovery, supporting public education and behavior change campaigns, and enforcing policies and regulations. However, Kisumu County faces significant financial barriers, including inadequate municipal revenue generation, underpriced services where fees do not cover actual costs, poor cost recovery due to weak billing systems or low willingness to pay, a lack of investment–ready projects that deters private and donor financing, and weak financial management leading to inefficiencies and a lack of accountability in the use of SWM funds. To ensure sustainable funding, the policy introduces ring–fencing of SWM revenue through conservancy levies and other lawful streams, guaranteeing reinvestment into waste infrastructure, circular economy initiatives, and innovation such as CWIS digital systems.

II. Institutional Landscape of Solid Waste Management

This refers to the intricate network of public, private, and community-based institutions responsible for planning, financing, regulating, delivering, and monitoring solid waste services. A well-structured and coordinated institutional framework is paramount for ensuring that SWM is efficient, inclusive, environmentally sound, and aligned with national development goals and international commitments like the Sustainable Development Goals (SDGs). Kisumu County's SWM system is currently hindered by a fragmented institutional framework, resulting in inefficiencies in policy implementation, service delivery, and stakeholder coordination. The legal and institutional landscape involves multiple entities with overlapping mandates; for instance, while the National Environment Management Authority (NEMA) sets overarching environmental guidelines, county governments are responsible for local waste collection, disposal, and regulation. The absence of a cohesive strategy and clear delineation of roles among these bodies leads to duplication of efforts and significant gaps in service provision. Furthermore, the county's SWM policies are often not effectively integrated into broader urban planning and development initiatives, resulting in inadequate infrastructure, particularly in rapidly growing informal settlements. Limited coordination between departments responsible for health, environment, and urban planning exacerbates these challenges, leading to inefficient resource allocation and delayed project implementation. Community participation in waste management is also limited, partly due to the absence of structured frameworks that facilitate collaboration between the county government and local organizations.

To strengthen governance, all references to a County Corporation are replaced with a Directorate of Sustainable Waste Management, in full compliance with the PFM Act, PPP Act, EMCA, SWM Act, and Cities & Urban Areas Act. This Directorate formalises engagement with informal waste actors through cooperatives and PPP frameworks, with potential to establish SPVs for end-to-end value chain management.

III. Solid Waste Management and Land Use Planning

These are closely interconnected disciplines that are critical for achieving sustainable urban development. Effective land use planning ensures that essential waste management infrastructure, such as collection centers, transfer stations, recycling facilities, and landfills, is optimally located, accessible, and seamlessly integrated into broader urban systems. Conversely, poor coordination between SWM and land use planning leads to environmental degradation, public health risks, land conflicts, and inefficient service delivery. Kisumu County currently lacks a dedicated solid waste management spatial plan to guide various SWM interventions. This absence contributes to rapid, unplanned urban expansion, making it difficult to reserve adequate land for SWM infrastructure. The high demand for residential, commercial, or industrial land often displaces waste management needs, and poor enforcement or outdated land use plans fail to incorporate modern SWM requirements. Public resistance to locating waste facilities near neighborhoods, coupled with the encroachment of informal settlements near disposal sites, creates additional health and safety risks.

IV. Solid Waste Management and Informal Sector

The informal sector plays a vital, though often under-recognized, role in solid waste management, particularly in waste collection, separation, and recycling. Informal waste workers, including waste pickers, recyclers, and small-scale collectors, operate without formal recognition, regulation, or social protection. Despite their precarious conditions, they contribute significantly to waste recovery, recycling, and environmental sustainability by diverting large amounts of waste from landfills and generating livelihoods for thousands of low-income urban residents of Kisumu. In Kisumu County, both informal and formal waste collectors exist, with a waste collectors' network and a waste pickers association being registered and recognized. These groups obtain recognition letters to facilitate their operations and regulation within the city, where informal waste collection is prevalent. While the county department of environment oversees the entire waste management sector, fragmented operational structures connect the county with the private and informal sectors. Despite their valuable contributions, informal waste workers face numerous challenges, including a lack of formal recognition, poor working conditions that expose them to hazardous waste due to a lack of protective equipment, social stigma and discrimination, and legal harassment from enforcement agencies. An updated hazardous waste inventory will guide safe collection systems for e–waste, medical waste, fishing net waste, and other regulated streams to prevent harmful disposal into water bodies and the environment.

V. Kisumu County Solid Waste Actors

Solid Waste Management involves a wide array of actors operating across the entire waste value chain, from generation, collection, transportation, and processing to recycling and final disposal. These actors include public institutions, private sector entities, community-based organizations (CBOs), informal sector workers, and households. Understanding their respective roles, responsibilities, and interactions is crucial for designing effective, inclusive, and sustainable waste management systems. The County Government of

Kisumu, through its department of environment, holds the primary responsibility for overseeing SWM services, including policy formulation, regulation, and coordination of waste collection and disposal activities. However, limited technical capacity and financial constraints have hindered the department's ability to manage waste effectively across the county. Informal waste pickers often operate outside formal waste structures, primarily along streets and at dumpsites, undertaking waste separation as trucks arrive. CBOs, typically operating at the grassroots level, engage in activities such as waste segregation, composting, and public awareness campaigns, playing a vital role in enhancing recycling rates and promoting community participation. Private entities and micro-enterprises have emerged to fill gaps in waste collection services, particularly in peri-urban and informal settlements, often operating under county–issued permits. Organizations like the Kisumu Waste Actors Network (KIWAN) and Kisumu Waste Pickers Association (KIWAPWA) serve as collaborative platforms, facilitating coordination, capacity building, and advocacy. Non-Governmental Organizations (NGOs) and Development Partners also support Kisumu's SWM through funding, technical assistance, and capacity-building initiatives, such as the Kisumu Integrated Solid Waste Management Plan (KISWAMP). Despite this diverse array of actors, challenges persist due to institutional weaknesses, resource constraints, regulatory gaps, technological limitations, and socio–economic barriers. To strengthen governance, the Directorate of Sustainable Waste Management, in full compliance with the PFM Act, PPP Act, EMCA, SWM Act, and Cities & Urban Areas Act, will formalise engagement with informal waste actors through cooperatives and PPP frameworks, with potential to establish SPVs for end–to–end value chain management.

CHAPTER 3 – POLICY STATEMENTS AND STRATEGIES

Kisumu County has been grappling with significant challenges in solid waste management that have impeded its planning and development. These challenges are interlinked, stemming from rapid urbanization, population growth, limited infrastructure, weak institutional coordination, and inadequate financing. The key issues include the uncontrolled increase in waste generation, inefficient collection and transportation systems, a lack of source separation and recycling infrastructure, improper disposal practices, and limited inclusion of the informal sector. Additionally, land use conflicts, poor public awareness, and insufficient policy enforcement further complicate efforts to manage waste sustainably. An effective SWM policy must address this range of interconnected challenges, which are reflected in the complexity and scope of waste generation, handling, and disposal in both urban and rural contexts. Overcoming these challenges requires a comprehensive, multi-sectoral policy that strengthens each thematic area by fostering collaboration among stakeholders to build resilient and sustainable SWM systems.

3.1 Waste Streams, Sources, and Scope of Solid Waste Management

Effective solid waste management necessitates a clear understanding of the types of waste generated (waste streams), their origins (sources), and the full range of activities involved in their management (scope). This includes municipal, industrial, agricultural, hazardous, healthcare, e- waste, and construction and demolition wastes. Without a clearly defined policy framework, interventions remain fragmented, inefficient, and environmentally unsustainable.

Policy Objective

The objective of this policy area is to provide a strategic foundation for managing solid waste streams and sources through an integrated and inclusive approach, aiming to protect public health, safeguard the environment, and promote sustainable resource use in line with county and national development goals and international obligations provided for under the Sustainable Development Goals (SDGs).

Policy Statement

The County Government of Kisumu will adopt a comprehensive, inclusive, and sustainable solid waste management framework that recognizes the diverse waste streams and sources and provides clear scope and responsibilities for waste management across all sectors. This policy will guide the identification, categorization, and regulation of waste types and their sources, ensuring safe handling, reduction at source, recycling, resource recovery, and environmentally sound final disposal.

Policy Strategy

To achieve this policy statement, the County Government will implement the following actions:

I. *Classification of Waste Streams & Waste Stream Protocols*: The Department will classify waste into key streams such as organic/biodegradable, recyclable, hazardous, electronic, healthcare, construction & demolition, and residual waste. Each stream will have specific handling, treatment, and disposal guidelines based on its characteristics and potential impacts. An updated hazardous waste inventory will guide safe collection systems for e–waste, medical waste, fishing net waste, and other regulated streams to prevent harmful disposal into water bodies and the environment.

Additionally, the County shall publish standard operating procedures (SOPs) for each waste stream detailing segregation, safe storage, transport, treatment, recovery, quality control, and final disposal.

II. *Identification of Waste Sources:* The Department will identify primary sources of waste, including households, commercial establishments, industries, institutions, and public spaces, and develop source–specific strategies for waste minimization, segregation, and extended producer responsibility.

III. *Ban on Uncontrolled Dumping and Burning:* Uncontrolled dumping and open burning of solid waste will be prohibited county–wide. Enforcement measures and penalties shall be applied consistently, with community reporting channels integrated into mobile platforms.

IV. *Identify the Scope of Solid Waste Management:* SWM will encompass the entire value chain, including generation, source segregation, collection, storage, transfer, transportation, treatment, recycling, recovery, and final disposal, based on the 7Rs (Refuse, Reduce, Reuse, Repair, Recycle, Rethink, Recover) to promote circular economy principles.

V. *Identify and Integrate Stakeholder Roles:* The County Government will recognize the roles of national, the private sector, informal sector, civil society, and citizens in managing different waste streams and mechanisms for integrating informal waste actors and supporting community-led initiatives.

VI. *Develop Data and Information Systems:* A County waste information system and digital tracking will document generation, movement, treatment, and final disposal, enabling regulatory compliance and transparent reporting.

VII.

VIII. *Harmonize Regulatory and Institutional Framework:* The County Government will harmonize existing laws and regulations to align with the identified waste streams and scope of management and establish mechanisms for identifying institutional roles and strengthen coordination mechanisms for streamlined implementation.

3.2 Solid Waste Generation

The uncontrolled growth in solid waste generation in Kisumu County, driven by population increase, urbanization, and changing consumption habits, poses significant challenges to environmental sustainability, public health, and service delivery efficiency. Addressing waste generation at the source is recognized as the most cost-effective and sustainable strategy within the solid waste management hierarchy.

Policy Objective

The objective of this policy area is to provide a proactive and preventive approach to managing waste challenges by addressing the root cause; excessive and unmanaged waste production—by fostering a culture of responsibility and efficiency in resource use. This policy will contribute to a cleaner, healthier, and more sustainable environment, aligned with the county's and the national government's development agenda and global commitments under the Sustainable Development Goals (SDGs).

Policy Statement

The County Government will promote sustainable consumption and production patterns to minimize the generation of solid waste at the source. This will be achieved through regulatory, economic, and educational interventions aimed at waste prevention, reduction, and behavioral change across all sectors of the county, thereby reducing the environmental and public health burden of growing waste volumes in Kisumu County.

Policy Strategy

To achieve this policy statement, the county government of Kisumu will implement the following actions:

I. *Promote Waste Prevention and Minimization:* This will involve encouraging industries, households, and institutions to adopt cleaner production methods, packaging reduction, and eco-design to reduce waste at the source, as well as promoting sustainable procurement practices within county government and corporate sectors.

II. *Provide Incentives for Waste Reduction:* The county will introduce fiscal and non-fiscal incentives to support businesses and individuals that adopt low-waste technologies and behaviors, and penalize excessive waste generation through polluter-pays and extended producer responsibility (EPR) mechanisms.

III. *Promote Behavioral Change and Public Awareness:* The County Government will implement countywide public education campaigns to promote responsible consumption, waste reduction, and zero-waste lifestyles, and integrating solid waste education into community development programs.

IV. *Streamline Data Collection and Monitoring:* The county will establish systems for regular monitoring, reporting, and auditing waste generation patterns across different sectors and regions to inform evidence-based county planning, and require waste generators, especially from the commercial and industrial sectors, to maintain records and report on quantities and types of waste produced.

V. *Reuse and Repair Markets:* The County shall promote reuse and repair markets (such as textiles, electronics, fishing gear) and develop compost markets linked to agricultural value chains, improving livelihoods while diverting waste from disposal

VI. *Segregation at Source:* Mandatory source segregation will be legislated county–wide, adapted to community capacities and inclusive of rural areas. Landlords in multi–tenant properties will be accountable for ensuring that segregation and proper collection within premises

VII. *Integrate Waste Management into Urban and Industrial Planning:* This will involve embedding waste minimization objectives into urban planning, industrial licensing, and environmental impact assessments, and encouraging green building codes and circular economy principles in development projects to reduce construction and demolition waste. The policy promotes reuse and repair markets for textiles, electronics, and fishing gear, develops compost markets for agriculture, and enforces producer responsibility for packaging and plastics.

VIII. *Initiate Capacity Building and Innovation Programs*: The county will support research, innovation, and technology transfer on waste minimization techniques and alternative materials, and strengthen institutional capacity to enforce waste generation regulations and support community-driven initiatives.

3.3 Solid Waste Transfer and Transportation

Efficient transfer and transportation systems are fundamental to the success of the entire solid waste management value chain. Without well-coordinated and adequately resourced logistics, collected waste may not reach disposal or recovery sites in a timely, safe, or cost-efficient manner, leading to illegal dumping, increased greenhouse gas emissions, and public health hazards.

Policy Objective

The objective of this policy area is to improve the reliability, safety, and sustainability of solid waste transfer and transportation systems. By modernizing infrastructure, enforcing standards, and fostering inclusive partnerships, this policy aims to enhance waste service delivery, reduce environmental and health risks, and support the broader goal of an efficient and circular solid waste management system, aligned with county development goals and national and global environmental standards.

Policy Statement

The County Government of Kisumu will establish and enforce efficient, safe, and environmentally sound systems for the transfer and transportation of solid waste from points of generation to treatment or disposal facilities. This will include the development of well-located transfer stations, regulated transportation systems, and streamlined logistics that minimize environmental impact, reduce operational costs, and ensure reliable service delivery.

Policy Actions

To achieve this policy statement, the county government will implement the following actions:

I. *Develop and Regulate Transfer Stations*: This will involve facilitating strategic siting and construction of modern, environmentally compliant waste transfer stations in the city and residential areas, and ensuring transfer stations are designed to allow for waste sorting, consolidation, and temporary storage before final transportation.

II. *Standardize Waste Transport Systems:* The Department will establish technical standards and guidelines for waste transportation vehicles, including requirements for closed bodies, leakage prevention, and real–time digital monitoring, and mandating the licensing and regulation of waste transporters to ensure safety, accountability, and environmental compliance.

III. *Seasonal and Terrain–adapted Logistics:* Transport plans shall be adapted to rainy seasons, floods, and difficult terrain, including use of mechanized handcarts and non–motorized means to maintain service continuity in informal settlements and peri–urban areas.

IV. *Integrate Informal Transporters:* The county government will recognize and support the integration of small–scale informal waste transporters into the formal waste system through training, licensing, and participation in service contracts, to improve access in informal and underserved areas.

V. *Ensure Route Optimization and Efficiency*: This involves developing route optimization systems to reduce fuel use, operational costs, and service disruptions, and promoting the use of digital technologies and real-time tracking systems to improve service monitoring and scheduling.

VI. *Ensure Health, Safety, and Environmental Protection:* The County Government will focus on enforcing occupational health and safety standards for waste transport workers, including protective equipment and hygiene training, and ensuring that all transfer and transport activities minimize nuisances such as odor, spillage, traffic disruption, and emissions.

VII. *Provide Institutional and Financial Support:* This includes allocating adequate funding to the Directorate responsible for Solid Waste Management, the City Board and Municipalities for the procurement, maintenance, and upgrading of waste transport fleets and facilities, and developing public-private partnership (PPP) frameworks to attract private investment in transport infrastructure and services.

3.4 Solid Waste Separation, Processing, and Transformation

A significant proportion of solid waste generated in Kisumu County possesses the potential for reuse, recycling, or transformation into valuable products if properly separated and processed. However, the current absence of structured waste separation practices and limited processing capacity leads to the overburdening of landfills, increased greenhouse gas emissions, and the loss of recoverable materials. Addressing this critical gap is essential for achieving sustainable development, fostering job creation, and promoting environmental conservation within the county.

Policy Objective

The objective of this policy area is to provide a foundation for transforming waste into a valuable resource by emphasizing separation at the source, developing local processing capacity, and encouraging innovation. By effectively "closing the loop" between waste generation and resource use, this policy aims to contribute significantly to job creation, particularly for the youth, protect the environment, and foster sustainable economic growth, aligning with the county and national goals of Kenya Vision 2030, the Bottom-Up Economic Transformation Agenda (BETA), and the Sustainable Development Goals (SDGs).

Policy Statement

The County Government of Kisumu will promote and enforce systematic separation, processing, and transformation of solid waste to maximize resource recovery, minimize landfill use, and advance circular economy principles. This will be achieved through mandatory source separation, investment in waste processing infrastructure, support for recycling and composting industries, and the promotion of innovative technologies that convert waste into useful products and energy.

Policy Strategy

To achieve this policy statement, the county government of Kisumu will implement the following actions:

I. *Ensure Mandatory Source Separation:* This will involve enforcing mandatory separation of waste at the household, institutional, and commercial levels into key streams (organic, recyclable, hazardous, and residual waste). It also includes supporting awareness campaigns and providing color-coded bins and sorting infrastructure to facilitate compliance.

II. *Invest in Resource Recovery Parks:* The County will establish Resource Recovery Parks (RRPs) through PPPs, integrating MRFs, composting, repair, and innovative treatment technologies (including BSF, biogas, and, where appropriate, waste-to-energy), observing the waste hierarchy.

III.

IV. *Support for Recycling and Composting***:** This will involve creating a favorable policy environment for recycling enterprises through tax incentives, among other financial and non financial incentives, as well as promoting composting of organic waste for use in agriculture, landscaping, and land rehabilitation. The County will ring–fence SWM revenue for reinvestment, provide incentives for sustained segregation compliance, and mobilise public–private partnerships for recycling and waste–to–energy solutions.

V. *Decentralized MRFs and Composting Centres:* Decentralized MRFs and composting centres will be incentivized at sub–county and community level to improve segregation compliance and reduce transport distances. MRF licensing will allocate designated proportions for CBOs and organized informal waste workers, with the remainder licensed to private operators, to foster inclusive participation. SOPs and quality standards will govern MRF operations (environmental controls, product quality of recyclates/compost), with periodic audits and public reporting.

VI. *Encourage Innovation and Technology Adoption:* This action will facilitate the adoption of clean and efficient technologies for the transformation of waste into energy, construction materials, fuel, and other products, and supports research and development in sustainable waste conversion techniques and materials substitution.

VII. *Integrate the Informal Sector in the SWM Value Chain:* This will involve recognizing and integrating informal waste workers into formal processing systems through cooperatives, contracts, and training, and providing infrastructure and safety gear to improve working conditions and boost productivity.

VIII. *Ensure Quality Standards and Market Development:* This action will focus on enforcing standards for recycled and transformed products to ensure safety and market competitiveness, and facilitating linkages between waste processors and industries to strengthen demand for secondary raw materials.

IX. *Strengthen Monitoring and Reporting:* This involves establishing systems to track and report quantities of waste separated, processed, and transformed to inform policy and investment decisions, and requiring licensed waste processors to submit regular performance data to local and national authorities.

X. *Dedicated Collection for Specified Waste Streams:* Policies will prescribe dedicated collection, treatment, and environmentally sound management for e–waste, hazardous waste (including asbestos, oils, pesticides, batteries), agroveterinary waste, and industrial streams, with licensed operators and traceable chains of custody.

XI. *Onsite Controlled Disposal:* Onsite controlled disposal of certain hazardous wastes (e.g., asbestos) will be mandated where appropriate and compliant with national guidelines to minimize transportation risk.

3.5 Solid Waste Disposal

Improper disposal of solid waste poses severe risks to human health, the environment, and urban aesthetics in Kisumu County. Practices such as open dumping, uncontrolled burning, and poorly managed disposal sites lead to soil and water contamination, increased greenhouse gas emissions, and various public health hazards. To mitigate these risks and align with international best practices, solid waste disposal in Kisumu must be rigorously regulated, modernized, and minimized through integrated waste management systems.

Policy Objective

The objective of this policy area is to ensure that the disposal of solid waste is considered the last resort in the waste management hierarchy, utilized only when waste cannot be effectively reused, recycled, or recovered. By modernizing disposal practices and significantly reducing reliance on uncontrolled dumping, Kisumu County can safeguard public health, protect vital ecosystems, and fulfill its commitments to environmental sustainability, climate action, and the Sustainable Development Goals (SDGs).

Policy Statement

The County Government of Kisumu will ensure that the final disposal of solid waste is conducted in a safe, environmentally sound, and health–conscious manner through the development and enforcement of standards for engineered sanitary landfills, closure of illegal dumpsites, and promotion of waste reduction strategies that reduce dependency on landfilling.

Policy Strategy

To achieve this policy statement, the county government of Kisumu will implement the following actions:

I. *Develop Sanitary Landfills:* This policy commits to the construction and operation of engineered sanitary landfills as the preferred final disposal option, equipped with proper leachate collection and treatment systems, gas capture infrastructure, continuous environmental monitoring, and the establishment of centralized regional landfill sites to efficiently serve clusters of sub–counties or residential centers in an environmentally compliant and sustainable manner.

II. *Close and Ensure Rehabilitation of Illegal Dumpsites:* Illegal dumpsites will be closed and rehabilitated through a phased approach, mandating planned remediation and restoration activities to prevent ongoing environmental degradation and prepare the land for future use. Concurrently, progressive diversion of organic, recyclable, and hazardous wastes will be enforced to minimize reliance on open dumping and promote sustainable waste management practices.

III. *Prioritize Diversion of Organic, Recyclable, and Hazardous Waste from Disposal Sites:* This will be achieved through mandatory separation, reuse, recycling, and recovery programs, and by setting progressive waste reduction targets at the county levels to minimize landfill dependency.

IV. *Safeguard Health and Environment:* This involves implementing strict environmental impact assessments (EIAs) and public consultation processes before any waste disposal, and enforcing health and safety protocols for waste transport, workers and nearby communities to reduce exposure to hazardous substances. Additionally, the policy incorporates explicit provisions for hazardous waste management, including asbestos handling, greenhouse gas emissions reduction, and phased strategies for safe diaper disposal. The policy will prioritize , where practicable, onsite disposal of asbestos in strict compliance with asbestos disposal guidelines. The policy will invoke the polluter pay principles and extended producer responsibility to manage intended and accidental effluent discharge into the receiving environment as the national guidelines.

V. *Provide Institutional and Financial Support*: This entails allocating funding for the development and maintenance of disposal infrastructure, including through public–private partnerships, and building the capacity of county staff to operate disposal sites in compliance with national environmental standards.

VI. *Ensure Monitoring and Compliance:* This involves strengthening the regulatory role of the National Environment Management Authority (NEMA) and County Environmental Agencies to ensure disposal facilities meet operational and environmental standards, and introducing waste tracking systems to monitor the movement and final destination of waste.

VII. *Integrate Climate Resilience and Land Use Planning:* This action will incorporate climate risk assessments into the location and design of waste disposal facilities and encourage landfill gas capture for energy generation where feasible.

VIII. *Reduce Proportion of Waste in Landfills:* The target of this policy is to progressively reduce the proportion of waste sent to landfills from the current approximate level of 70% down to 5%. This will be achieved through comprehensive expansion of strategies focused on waste reduction at the source, increased reuse of materials, enhanced recycling programs, and effective recovery activities that divert waste towards value-added uses. These efforts will collectively decrease landfill dependency, minimize environmental impacts, promote resource efficiency, and support the transition to a circular economy within Kisumu County.

IX.

3.6 Solid Waste Management Financing

Sustainable solid waste management requires consistent and adequate financing to support collection, transportation, processing, recycling, and safe disposal. However, many counties, including Kisumu, and urban authorities in Kenya face significant budget constraints, low-cost recovery, and limited private sector participation. Addressing these financing gaps is critical to achieving environmentally sound and efficient SWM services and aligning with county, national, and global development goals. To ensure sustainable funding, the policy will introduce ring–fencing of SWM revenue through conservancy levies and other lawful streams, guaranteeing reinvestment into waste infrastructure, circular economy initiatives, and innovation such as CWIS digital systems.

Policy Objective

The objective of this thematic area is to ensure that solid waste management is financially viable, socially equitable, and environmentally sustainable. Through diversified financing sources, strong governance, and private sector collaboration, Kisumu County will build a resilient waste management system that contributes to public health, job creation, circular economy advancement, and national climate targets.

Policy Statement

The County Government of Kisumu will establish a sustainable, inclusive, and transparent financing framework for solid waste management (SWM) that leverages public, private, and community resources to ensure effective service delivery, infrastructure development, and circular economy growth. This will involve diversified funding mechanisms, cost recovery systems, and incentives to promote investment in waste management across the entire value chain.

Policy Strategies

To achieve this policy statement, the county government of Kisumu will implement the following actions:

I. *Commit to Allocating Public Budget:* The Sustainable Waste Management Fund will be legally ring-fenced through incorporation into the Kisumu County Sustainable Waste Management Act to ensure dedicated and protected financing. Fund allocations will be proportionate to the shares of different waste streams, prioritizing approximately 60% toward organic waste management due to its high volume and significant recovery potential. This Fund will support the integration of sustainable waste management into county, city, and sub-county development and environmental funding frameworks, fostering coordinated and sustained investment across all administrative levels.*Implement Mechanisms for Equitable User Charges and Service Fee*s: The diversified financing strategy will include introducing user charges and service fees for households, institutions, and businesses to recover operational costs, with differentiated tariffs based on waste type, volume, and income levels to promote fairness and incentivize waste reduction. This approach will also integrate Pay-As-You-Throw (PAYT) schemes, green bonds, carbon credits, grants, annual leasing fees for Material Recovery Facilities (MRFs), and revolving funds to support community waste enterprises and strengthen sustainable waste management financing.

II. *Encourage Private Sector Participation:* This policy promotes comprehensive private sector participation across the entire waste value chain, utilizing public–private partnerships, service contracts, and other contracting models. To reduce the county's financial burden, clear guidelines will direct decisions on appropriate and innovative partnership frameworks throughout the value chain.

III. *Provide Incentives and Fiscal Instruments:* To encourage private investment, the policy will offer financial support mechanisms such as guarantees, subsidies, and co-financing to reduce risks for private sector actors. Additionally, various fiscal and innovative funding instruments may be employed to generate resources for sustainable waste management, including mechanisms that support green businesses, both in the private sector and with informal waste pickers and community waste management groups that are engaged in the waste value chain.

IV. *Build the Capacity of County Government and SWM Entities*: This entails enhancing capacity in budgeting, financial planning, revenue collection, and transparent reporting, and promoting digital tools and systems for billing, revenue tracking, and expenditure monitoring.

V. *Facilitate Access to International Funding Mechanisms (through the national government)*: This includes accessing funds such as the Green Climate Fund, Global Environment Facility, and bilateral donors for climate-resilient waste management projects, and aligning SWM financing strategies with Kenya's Nationally Determined Contributions (NDCs) and Sustainable Development Goals (SDGs).

VI. *Strong Billing and Revenue Management Systems:* Robust billing and revenue management systems will be institutionalized to ensure transparent, accurate, and timely collection of funds. These systems will incorporate modern technologies and real-time tracking to improve financial accountability, reduce leaks, and support continuous, sustainable funding for waste management services.

3.7 Institutional Landscape of Solid Waste Management

The fragmented institutional landscape of Kisumu County's solid waste management sector, involving multiple stakeholders with overlapping responsibilities, often leads to inefficiencies, regulatory conflicts, and gaps in service delivery. A streamlined and well-coordinated institutional framework is essential to ensure clarity of roles, effective enforcement of standards, efficient mobilization of resources, and the achievement of county environmental and public health goals. To enhance governance, the Directorate of Sustainable Waste Management, ensuring full compliance with the PFM Act, PPP Act, EMCA, SWM Act, and Cities and Urban Areas Act, will formalise collaboration with informal waste actors through cooperatives and PPP frameworks, and may establish Special Purpose Vehicles (SPVs) to manage the entire waste value chain.

Policy Objective

The objective of this policy area is to establish a coherent, responsive, and well-resourced county system for solid waste management. By enhancing coordination, building capacity, and formalizing stakeholder roles, the county will be better positioned to deliver inclusive, sustainable, and efficient waste services that support public health, environmental protection, and county and national development objectives, including those under the Kenya Vision 2030 and the Sustainable Development Goals (SDGs).

Policy Statement

The County Government of Kisumu will strengthen and harmonize the institutional landscape of solid waste management (SWM) by establishing the Directorate of Solid Waste Management with clearly defined mandates and enhancing coordination among actors, and building institutional capacity across the county, regulatory bodies, the private sector, and communities. A coherent institutional framework will ensure accountability, efficiency, inclusivity, and sustainability in waste management planning and service delivery.

Policy Strategy

To achieve this policy statement, the county government of Kisumu will implement the following

actions:

I. *Clearly Delineate Roles and Responsibilities:* This will involve defining the roles and responsibilities of the Directorate, County entities, national entities, regulatory authorities (e.g., NEMA) and aligning institutional functions with relevant legislation including the Environmental Management and Coordination Act (EMCA), Urban Areas and Cities Act,and devolved governance structures.

II. *Support the Empowerment of County Officials:* The policy aims to empower county officials to develop and implement County Integrated Waste Management Plans (CIWMPs), and enhance the technical and financial capacity of the county and the City Municipal to manage waste services, enforce regulations, and engage the private sector.

III. *Strengthen Coordination:* This action involves establishing a County Solid Waste Management Corporation, or an inter–agency coordination body to harmonize policies, standards, and funding, and promoting vertical and horizontal collaboration among key stakeholders.

IV. *Create and Develop a Conducive Environment for Non–State Actor Participation:* The County will create a conducive environment for non–state actors' participation by implementing robust performance contract systems, ensuring all waste collection operators are registered and licensed, with strict enforcement against unlicensed operators. At the same time, the policy will actively encourage collaboration with non–state actors to enhance public awareness, capacity building, and innovation. To support this, the County will provide regular training and capacity development for community-based organizations and informal waste workers, focusing on occupational health and safety, business management, and the effective use of technology to strengthen their roles within sustainable waste management.

3.8 Solid Waste Management and Land Use Planning

The absence of proper integration between solid waste management and land use planning has historically led to the inappropriate siting of dumpsites, poor access to waste infrastructure, land–use conflicts, and environmental degradation in Kisumu County.

Policy Objective

To coordinate Solid Waste Management and Land Use Planning Coordinating to ensure that waste facilities are optimally located, resilient to future urban growth, and aligned with broader county development goals.

Policy Statement

The County Government of Kisumu will integrate solid waste management (SWM) into the county land use planning frameworks to ensure the strategic siting of waste facilities, protect environmental and public health, and promote sustainable urban development. This includes incorporating SWM infrastructure into spatial plans, zoning regulations, and environmental safeguards to support efficient service delivery and minimize land–use conflicts.

Policy Actions

To achieve this policy statement, the county government of Kisumu will implement the following actions:

I. *Integrate Spatial and Physical Plans:* Integrated waste management requirements will be mandatory for all building permit applications, enforced collaboratively by the Departments of Lands, Physical Planning, and Environment. This will include the incorporation of sustainable solid waste management infrastructure into county spatial plans and the development of appropriate control frameworks. Moreover, solid waste infrastructure planning will be a required component of urban, industrial, and housing development projects to ensure environmentally sound and coordinated waste management from the planning stage onward.

II. *Incorporate Zoning into Spatial Planning:* Adequate, zoned land will be reserved within spatial plans for all waste management infrastructure. To safeguard environmental and community wellbeing, comprehensive guidelines will be developed to govern the zoning and environmental siting of these facilities. These guidelines will prevent encroachment on residential, agricultural, and ecologically sensitive areas by incorporating scientific site selection methodologies and participatory approaches, alongside thorough environmental and social impact assessments.

III. *Safeguard and Reserve Adequate Land:* This will ensure sufficient land is reserved for current and future SWM infrastructure needs in rapidly urbanizing and high-growth areas in the county, and that waste management land-use provisions are incorporated into County Integrated Development Plans (CIDPs) and urban master plans.

IV. *Support Decentralized and Community–Based Waste Management Solutions:* This will promote solutions like composting hubs and recycling points to reduce transportation burdens and enhance access into informal settlements and peri-urban areas.

V. *Ensure Environmental and Social Safeguards:* This will require that all waste infrastructure developments comply with land use, environmental, and public health regulations to mitigate negative impacts on host communities through inclusive planning, compensation, and benefit-sharing mechanisms.

VI. *Promote Collaboration:* This will foster cooperation between land use planners, urban authorities, environmental regulators, and SWM agencies to harmonize planning processes and reduce bureaucratic delays, and build the capacity of planning authorities to assess SWM needs and incorporate them into land use decisions.

VII. *Incorporate Climate Risk Assessments:* This involves including climate risk assessments into the location and design of waste infrastructure to ensure resilience to flooding, drought, and other climate–related threats.

3.9 Solid Waste Management and Informal Sector

The informal sector plays a vital role in Kisumu County's solid waste management, particularly in waste collection, separation, and recycling. However, these actors often operate without legal recognition, social protection, or adequate support services, exposing them to hazardous conditions and economic exploitation. Integrating the informal sector into formal systems will significantly improve waste recovery rates, create green jobs, and promote inclusive and sustainable urban development. An up–to–date hazardous waste inventory will inform the development of safe collection systems for e–waste, medical waste, fishing gear, and other regulated streams, preventing harmful disposal into water bodies and the wider environment.

Policy Objective

The objective of this policy area is to enhance waste recovery, reduce environmental pollution, and create dignified livelihoods for informal waste workers. This inclusive approach is intended to contribute to a circular economy and support equitable development within Kisumu County.

Policy Statement

The County Government of Kisumu will formally recognize, empower, and integrate informal sector actors into the solid waste management (SWM) system by providing supportive legal, institutional, and economic frameworks that enhance their working conditions, ensure fair compensation, and leverage their contributions to resource recovery, recycling, and environmental sustainability. To strengthen governance, all references to a County Corporation are replaced with a Directorate of Sustainable Waste Management, in full compliance with the PFM Act, PPP Act, EMCA, SWM Act, and Cities & Urban Areas Act. This Directorate formalises engagement with informal waste actors through cooperatives and PPP frameworks, with potential to establish SPVs for end-to-end value chain

Policy Strategy

To achieve this policy statement, the county government of Kisumu will implement the following actions:

I. *Formal Recognition and Legal Inclusion:* The County will formally recognize informal waste workers as legitimate actors within the county's solid waste management system by legally integrating them into relevant policies, laws, and strategic frameworks. This formalization process will encompass registration, formation of cooperatives, licensing, and provision of occupational health and safety training, including access to personal protective equipment. Additionally, mechanisms will be established to facilitate their access to finance and to designate defined operational areas, while Material Recovery Facility (MRF) licensing will reserve a portion of capacity specifically for community–based organizations and informal groups, supported through performance–based incentives to enhance their effectiveness and inclusion.

II. *Training and Upskilling*: In collaboration with partners, the county will provide training and upskilling opportunities for informal waste workers, covering safe handling, sorting, and recycling techniques, as well as financial literacy and business management.

III. *Access to Tools and Equipment:* The County will facilitate access to tools, equipment, and protective gear to enhance the efficiency and occupational health and safety of informal waste workers.

IV. *Promotion of Cooperatives and Associations:* The policy will promote the formation and strengthening of informal waste workers' cooperatives and associations for collective bargaining, service contracting, and representation in policymaking, and support linkages between these groups and county authorities or private companies for inclusive service delivery.

V. *Access to Finance and Market Linkages*: Informal actors will be facilitated with access to revolving funds, and grants to enable them to expand their operations and invest in better technologies, and market linkages for recycled materials will be created through platforms, aggregation centers, and favorable procurement policies.

VI. *Integration into Service Agreements:* The county government and its Municipalities will incorporate informal sector actors into service agreements, collection routes, and material recovery operations through subcontracting or direct partnerships, and equitable payment and performance monitoring mechanisms will be ensured.

VII. *Social Protection and Rights:* The County will work with relevant agencies to extend social security, health insurance, and legal protection to informal workers, and combat child labor and gender-based discrimination within the sector through inclusive policy enforcement and awareness campaigns.

3.10 Solid Waste Actors

Solid waste management involves a diverse set of actors whose roles are essential but often fragmented or under-recognized. Public agencies are responsible for oversight, regulation, and service provision, while private companies offer crucial logistics and processing solutions. Concurrently, community and informal actors contribute significantly to waste collection and recycling efforts. A clear, coordinated approach that enhances the contributions of each actor is necessary for effective waste governance and efficient service delivery.

Policy Objectives

The objective of this policy area is to affirm the county government's commitment to a multi-actor, multi–level approach to solid waste management. By recognizing and empowering all actors—public, private, community, and informal—Kisumu County can build a more inclusive, resource efficient, and resilient waste management system that supports job creation, environmental health, and sustainable development goals.

Policy Statement

The County Government of Kisumu will recognize, empower, and coordinate all actors involved in solid waste management (SWM), including public institutions, private sector entities, community-based organizations, and the informal sector, to promote inclusive, efficient, and sustainable waste services across the entire value chain.

Policy Actions:

To achieve this policy statement, the county government of Kisumu will implement the following actions:

I. *Define and Formalize Roles and Responsibilities:* This involves clearly defining and formalizing the roles and responsibilities of all SWM actors in legal and policy frameworks, ensuring alignment with devolved functions and regulatory mandates, and clarifying inter-governmental coordination mechanisms between national and county levels.

II. *Build Capacity of County Agencies:* The County will build the capacity of its agencies to provide policy direction, enforce regulations, develop infrastructure, and engage stakeholders effectively, and enhance coordination between environment, health, city planning, and infrastructure departments' at all county levels.

III. *Facilitate Private Sector Participation:* This policy will facilitate active private sector participation across the entire solid waste management value chain. Engagement mechanisms will include licensing, public–private partnerships (PPPs), and performance–based contracts, complemented by fiscal and facilitative incentives throughout the SWM value chain. To ensure accountability and service quality, all licensed actors will be subject to performance indicators and regular reporting, with a system of performance–based subsidies to reward compliance and penalties to address non-compliance.

IV. *RIng–Fencing SWM Revenue:* To ensure sustainable funding, the policy introduces ring–fencing of SWM revenue through conservancy levies and other lawful streams, guaranteeing reinvestment into waste infrastructure, circular economy initiatives, and innovation such as CWIS digital systems.

V. *Recognize and Support Informal Waste Collectors:* The county will recognize and support informal waste collectors, sorters, and recyclers by formalizing their operations through registration, training, access to finance, and protective equipment, and promoting cooperatives and associations to improve working conditions and increase economic returns for informal workers.

VI. *Empower Community-Based Organizations and NGOs:* This will involve empowering community-based organizations (CBOs) and Non-Governmental Organizations (NGOs) to participate in awareness campaigns, waste collection, and environmental stewardship initiatives, and encouraging participatory planning and feedback mechanisms for communities to influence waste management decisions and service delivery.

VII. *Support Research Institutions and Universities:* The County will support research institutions and universities to provide innovation, data, and technical expertise for improving SWM systems, and foster academic–industry–county collaboration in waste reduction and resource recovery technologies.

VIII. *Establish Performance Indicators and Reporting Requirements:* This action includes establishing performance indicators and reporting requirements for all licensed actors to enhance transparency and accountability in the SWM sector, and encouraging regular stakeholder dialogues and reviews to assess progress and improve coordination.

CHAPTER 4- POLICY IMPLEMENTATION FRAMEWORK

4.1 Administrative and Institutional Framework

An effective administrative and institutional framework is fundamental to achieving sustainable solid waste management. In Kisumu County, SWM responsibilities are shared across multiple levels of government and institutions, necessitating well–coordinated systems and clearly defined mandates to ensure efficient service delivery, regulatory compliance, and stakeholder participation throughout the waste management value chain.

The SWM Directorate, along with the Special Purpose Vehicle where constituted, will play a central role in coordinating the delivery of services across multiple actors involved in solid waste management. It will maintain an up-to-date registry of all actors, manage public-private partnerships, and ensure transparency by publishing annual lists of licensed operators and facilities. Leveraging mobile technology, the Directorate will enhance public engagement through streamlined service scheduling and real-time reporting of issues, improving responsiveness and efficiency. To maintain consistency and quality across the system, Standard Operating Procedures (SOPs) will be implemented for all stages of the waste management process including segregation, collection, processing, and disposal.

To ensure effective and efficient solid waste management, the following administrative and institutional framework will be established in the County: *(see Appendix I for the Implementation Matrix)*

I. *The Governor:*

The office of the Governor will hold the overall responsibility to oversee the implementation of the solid waste management policy.

II. *The CEC Member for Environment:*

The CEC Member will be responsible for formulating policies on solid waste management and supervising their implementation, as well as overseeing all actors in the solid waste management value chain.

III. *The County Environmental Committee:*

The composition of this committee is outlined in Section 29 of the Environmental Management and Co-ordination Act (EMCA). Its roles include overseeing proper management of the environment within the county, developing a strategic environmental action plan every five years, and performing other functions as prescribed by any Act or assigned by the Governor.

IV. *The Directorate of Solid Waste Management*

A directorate will be established to oversee the management of solid waste within the County and performing any other function as prescribed by the CEC Member.

V. *The City and Municipality*

As established by the Urban Areas and Cities Act, the roles of the city and municipality encompass developing solid waste management infrastructure, formulating and enforcing SWM policies, financing SWM, engaging and educating the community on SWM, promoting public–private partnerships in SWM, and coordinating with county and national governments on SWM. To ensure sustainable funding, the policy introduces ring–fencing of SWM revenue through conservancy levies and other lawful streams, guaranteeing reinvestment into waste infrastructure, circular economy initiatives, and innovation such as CWIS digital systems.

VI. *Proposed Kisumu County Sustainable Waste Management Corporation*

A corporate entity will be established in accordance with the Public Finance Management (County Governments) Regulations. This Corporation will cooperate with CBOs, private waste actors, and NGOs involved in solid waste management to form a unified body. The establishment of such a corporate entity for SWM will offer strategic, operational, and economic advantages to the county, ensuring professionalization and efficiency in solid waste management, financial sustainability, flexibility in procurement and operations, improved service delivery and coverage, accountability and governance, and enabling the county to fulfill its legal and institutional mandate. The mandate of this corporation will include:

- lobbying for resources for policy implementation,
- preparing proposals for resource mobilization,
- making decisions on SWM for consideration by the Department, and
- any other function related to SWM assigned by the county.

County Sustainable Solid Waste Management Committee Members of the Committee • CECM in charge Solid waste Management (Chairperson) • CECM in charge of Urban Planning • CECM Finance and Economic Planning • CECM in charge Public Health • County Director NEMA • County Director Environment (Secretary) • County Commissioner • CECM in Charge of Public Service • City ManagerTown Managers will be incorporated on need basis	• Mobilizes resources for SWM. • Make strategies on collaborations on solid waste management including the engagement with CBOs, Informal Waste Actors, NGOs, and private actors. • Manages procurement and service delivery efficiently. • Advises the Department City and towns on SWM matters.

VII. *Other Actors in the Implementation of Solid Waste Management Policy*

The effective management of solid waste in Kisumu County requires the coordinated participation of various non-state actors. These stakeholders complement the efforts of the county government by filling service gaps, fostering community engagement, and promoting sustainability. The county government will develop regulations to guide the establishment of mechanisms for collaboration, stakeholder engagements, licensing, and supervision of all SWM actors in the County.

4.2 Legal and Regulatory Framework for SWM

A robust legal and regulatory framework is essential for guiding the planning, implementation, and enforcement of solid waste management practices in a manner that is sustainable, inclusive, and protective of public health and the environment. In Kisumu County, the framework for SWM is currently anchored in national laws, sectoral policies, environmental regulations, county legislation, and international commitments. This existing framework provides the legal basis for setting standards, assigning responsibilities, licensing service providers, and ensuring compliance across all levels of the waste management value chain.

In this regard, the county government of Kisumu will enact a specific law, to be known as the Kisumu County Sustainable Waste Management Act, to guide the implementation of this policy. This new law will be meticulously aligned with other existing national, global, and county laws that govern certain aspects of waste management, such as the Environmental Management and Coordination Act (EMCA) and its new 2024 regulations concerning waste management, water quality, air quality, plastic packaging materials, and toxic and hazardous chemicals. This comprehensive alignment will ensure that the policy achieves its objectives effectively and without conflict with broader legal mandates.

County legislation will establish comprehensive regulations to govern solid waste management, mandating source segregation and the licensing or registration of all operators. It will prohibit uncontrolled dumping and open burning to protect public health and the environment. Vehicle standards will be enforced, requiring closed bodies, leak prevention measures, and GPS tracking. The legislation will also mandate digital waste tracking systems and route optimization to enhance operational efficiency. Furthermore, specialized protocols will be implemented for the safe management of hazardous and electronic waste, ensuring environmentally sound handling and disposal throughout the county.

4.3 Funding Arrangements for Sustainable Waste Management

Effective implementation of a sustainable waste management policy requires sustainable, well- structured funding arrangements to support the development, operation, and maintenance of waste services and infrastructure. Solid waste management is a shared responsibility among the national and county governments, the private sector, development partners, and communities. However, limited and inconsistent financing remains one of the key barriers to achieving efficient and sustainable waste management systems in Kisumu County. A clear and diversified funding framework is therefore essential to ensure reliable service delivery, promote innovation, and attract necessary investments in the waste sector.

The Solid Waste Management (SWM) Fund will be capitalized through a diverse range of revenue sources, including levies, user fees, Pay–As–You–Throw (PAYT) schemes, conservancy charges, green bonds, and carbon credits. These lawful income streams will ensure a steady and sustainable flow of funds. Importantly, the Fund will be ring-fenced to guarantee that all resources are reinvested into critical infrastructure development, circular economy initiatives, digital innovation, and empowerment programs targeting the informal waste sector. This approach will enhance financial sustainability while promoting inclusive and innovative waste management solutions.

Sources of funds for Sustainable Waste Management

The CEC Member for Finance in consultation with the Department will establish a public fund which shall be appropriated in accordance with the Public Finance Management Act, 2012. Other sources of funds will include :

- Service fees and levies generated by the county.
- Monies from licensing of waste operations.
- Loans from financial institutions.
- Grants.
- Fines.
- Funding from development partners.
- Any other sources that are legally accepted.

Usage of the Solid Waste Management funds

The usage of the monies from this fund will be guided by the PFM Act regulations that will be developed for this purpose, in line with the objectives of the solid waste management policy.

Chapter 5 – Research, Monitoring, Evaluation and Reporting

5.1 Introduction

Monitoring, Evaluation, Learning, and Reporting (MELR) is a critical component of an effective solid waste management (SWM) system. It provides a structured approach to track progress, assess performance, capture lessons learned, and ensure accountability in the implementation of SWM policies, programs, and projects. An effective MELR framework is essential for guiding progress in solid waste management, as it promotes evidence-based decision-making, accountability, continuous learning, and ongoing improvement by linking data to actionable strategies. Furthermore, a well-designed MELR framework assists stakeholders in making informed decisions, enhancing service delivery, and continually adapting strategies based on collected evidence and feedback. This chapter outlines the mechanisms for implementing, monitoring, and evaluating the solid waste management policy. To ensure effective implementation, there will be continuous monitoring of the implementation and results of the programs and activities undertaken to achieve this policy's objectives. The department responsible for solid waste management will collaborate with national and county stakeholders to design the core outcome indicators for measuring M&E results.

5.2 Monitoring and Evaluation

This policy shall be evaluated in accordance with the overall county monitoring and evaluation framework, standards, and system. The following requirements shall apply in regard to policy monitoring and evaluation: *(see Appendix II for the M & E Matrix)*

I. The County will implement a comprehensive end–to–end waste tracking system that monitors waste generation, movement, treatment, and final disposal.

II. Data gathered will support quarterly progress reviews and the publication of an annual policy effectiveness report involving key stakeholders.

III. A robust monitoring framework will include key performance indicators such as collection coverage, compliance with segregation requirements, recycling and composting rates, facility performance, environmental compliance, closure of illegal dumpsites, emissions, landfill gas capture, and occupational safety incidents.

IV. Real–time dashboards and mobile reporting platforms will enable adaptive management and timely response to emerging issues.

V. To address specific data gaps, targeted studies will be conducted in partnership with academia and the private sector, focusing on areas such as sub-county waste composition, vector risk mapping, microplastic contamination in fishery zones, and development of the compost market.

VI. The department responsible for solid waste management shall designate staff to coordinate monitoring and evaluation of policy implementation.

VII. Every three months, the department responsible for solid waste management shall prepare a report on the progress made in implementing the policy, which will be submitted to the county executive committee for consideration and decision-making.

VIII. An annual policy review shall be conducted, involving all solid waste management stakeholders. This review will provide feedback on successes, progress, and challenges related to policy implementation and assess whether policy outcomes have been met each year. The annual policy review report shall be submitted to the county executive committee for consideration and decision making.

IX. The policy shall be evaluated at the end of each three year period to assess the extent to which policy outcomes have been realized, including its overall impact.

X. The department responsible for solid waste management shall disseminate policy evaluation reports to all county solid waste management stakeholders.

5.3 Reporting and Research

The reporting and Research component of the MELR framework is crucial for ensuring that data and findings from monitoring and evaluation activities are effectively communicated and utilized to foster continuous improvement and adaptive management. Regular reporting will provide transparency on progress, challenges, and resource utilization to all stakeholders, including the county executive, citizens, private sector partners, and development agencies. This systematic communication will enable timely adjustments to strategies and interventions. Learning, derived from both successes and failures identified through M&E, will inform future policy refinements, program designs, and capacity-building initiatives. This iterative process of reporting and learning ensures that the solid waste management system in Kisumu County remains responsive to evolving needs and integrates best practices over time.

5.4. Policy Review

This policy will undergo a comprehensive review every three years to ensure its responsiveness to emerging issues in solid waste management, to incorporate reviews of county strategies and frameworks, and to integrate best practices in solid waste management. However, the county may initiate an earlier review of the policy under extraordinary circumstances, such as to align it with new international and regional frameworks, significant changes in other overarching policies and laws, or in response to an emergency that necessitates an immediate policy adjustment.

APPENDICES

5.1 Implementation Matrix for the Kisumu County Sustainable Waste Management Policy

Policy Area	Key Strategies	Activities	Timeline	Responsible Actors	Expected Outputs
1. Waste Streams & Sources	Classification of waste and integration of actors	● Develop county waste classification framework ● Map all major waste sources ● Integrate informal actors	Year 1–2	Directorate of SWM, NEMA, NGOs, CBOs	● Waste stream registry ● Source–specific strategy ● Stakeholder engagement model
2. Waste Generation	Promote waste minimization at source	● Enforce EPR and polluter- pays ● Launch public awareness campaigns ● Promote sustainable packaging	Continuous	County Environment Dept., KEPSA, Retailers, Media	● Reduced per capita waste ● Behavior change campaigns ● Reduced single–use plastic use
3. Collection & Transportation	Upgrade infrastructure and optimize systems	● Procure new vehicles ● Develop waste collection zones ● Build new transfer stations	Year 1–3	City/Municipal Boards, SWM Corporation, Private Collectors	● Improved fleet & collection efficiency ● New transfer stations operational
4. Separation, Processing & Transformation	Expand recycling and composting	● Establish MRFs and composting centers ● Provide sorting bins ● Incentivize recyclers	Year 1–4	SWM SPV (Special Purpose Vehicle), CBOs, Private Sector, KIWAPWA	● 6 MRFs & 3 ● composting plants ● Colour–coded bin distribution Recycling businesses supported
5. Disposal	Establish sanitary landfill & close illegal dumpsites	● Construct engineered landfill ● Identify and rehabilitate open dumpsites ● Install waste tracking system	Year 1–5	County Govt, NEMA, SWM SPV (Special Purpose Vehicle)	● 1 sanitary landfill ● 10 dumpsites closed Functional tracking system
6. Financing	Mobilize diverse funding &	● Create SWM Fund & develop	Year 1–2	CEC Finance, SWM SPV	● SWM Fund operational &

	ensure cost recovery	ring–fencing frameworks ● Implement service fees ● Develop PPP frameworks		(Special Purpose Vehicle), Development Partners	ring–fenced ● User fee policy adopted ● PPP agreements negotiated and signed
7. Institutional Framework	Clarify and operationalize roles and build capacity	● Operationalize SWM ● Directorate ● Set up SWM Corporation ● Train county staff	Year 1–2	CEC Finance, SWM SPV (Special Purpose Vehicle), Development Partners	● SWM Fund operational ● User fee policy adopted ● PPP agreements negotiated and signed
8. Land Use Planning	Source and reserve land & integrate SWM in planning	● Zone land for SWM facilities ● Integrate SWM into urban plans	Year 1–2	County Dept. of Lands, Urban Boards, NEMA	● 8 sites zoned ● SWM included in Spatial Plan & CIDP
9. Informal Sector	Recognize, formalize and empower waste workers	● Formalize engagement with informal sector through SWM SPV (Special Purpose Vehicle) ● Provide PPE and training ● Provide regular support to informal sector	Year 1–3	SWM Directorate, SWM SPV (Special Purpose Vehicle), KIWAN, NGOs	● Formalize and institutionalize 500+ informal actors and 10 cooperatives through SWM SPV (Special Purpose Vehicle)
10. Public Awareness	Build awareness and promote participation	● Roll out IEC materials ● Run school and market campaigns ● Use mobile apps & radio	Continuous	Directorate of SWM, Media, Education Dept., CBOs	● SWM literacy & circular economy principles increased ● Behavioral change observed
11. Legal Framework	Enact County Waste Management Legislation	● Draft and pass SWM Policy & Bill ● Align with national SWM legislation	Year 1	Directorate of SWM, County Assembly, County County Attorney, NEMA	● SWM legislation passed and enacted

5.1 Monitoring and Evaluation Matrix

Thematic Area	Objective	Key Indicators	Baseline	Target (3 Years)	Means of Verification	Responsible Entity
Waste Generation	Reduce per capita waste generated	● Avg. waste per person (kg/day) ● No. of awareness campaigns held	0.4 kg/day	0.3 kg/day	Digital tracking, Surveys, reports,	Directorate of SWM
Collection & Transport	Increase collection coverage	● Percentage of waste collected ● No. of functioning transfer stations	25% 2 stations	60% 5 stations	Field inspections, route logs	City Board, Sub-counties
Processing & Recycling	Enhance waste separation and recovery	● Percentage of waste recycled or composted ● No. of operational MRFs	10% 2 MRFs	40% 6 MRFs	Facility audits, contractor reports	SWM SPV (Special Purpose Vehicle)
Disposal	Reduce reliance on open dumping	● % waste disposed in engineered landfills ● No. of illegal	<10% 0 closed	>50% 10 closed	NEMA audits, field visits	NEMA, Directorate of SWM
Informal Sector	Integrate informal actors into formal systems	● No. of informal workers registered ● No. of cooperatives formed	0 registered 1 group	500+ Registered groups & 10 cooperatives formalized	SWM SPV (Special Purpose Vehicle) records and agreements signed	SWM Directorate, SWM SPV (Special Purpose Vehicle), NGOs
Public Participation	Increase awareness and behavioral change	No. of outreach activities - % households separating waste	<5% household	40% households	Community surveys, bin audits	Sub-county Env. Officers, CBOs
Finance	Ensure SWM circularity finances itself	% budget allocated to SWM Revenue from user fees	0.5% KSh 10M	2% KSh 50M	Budget reports, finance audits, SWM SPV (Special Purpose Vehicle) financial reports	County Directorate of SWM, CEC Finance, SWM Fund Committee
Land Use Planning	Reserve land for SWM infrastructure	No. of sites zoned for SWM use Integration into Spatial Plans	0	8 sites	Urban planning reports	County Directorate of SWM, County Lands Dept.

Regulatory Compliance	Implement legal and institutional framework	No. of licenses issued No. of inspections conducted	Minimal	100+ licenses, quarterly inspections	Licensing records, inspection logs	NEMA, County Directorate of SWM

5.1 Roles and Responsibilities of Key Stakeholders in Implementation of the Kisumu County Sustainable Waste Management Policy

Key Stakeholder	***Roles and Responsibilities***
Governor	• Provides overall leadership and oversight on policy implementation. • Assigns roles to institutions and approves strategies.
CEC Member for Environment	• Oversees and leads in development and implementation of SWM legislation. • Coordinates funding, execution, and legislation.
County Environmental Committee	• Oversees SWM implementation per relevant legislation • Advises the Governor on SWM issues (per Section 29, EMCA).
Directorate of Solid Waste Management	• Manages day–to–day SWM operations in the County. • Implements policy decisions and coordinates stakeholders. • Reports to the CEC Member.
County Sustainable Solid Waste Management Committee	• Mobilizes resources for SWM. • Engages with CBOs, Informal Waste Actors, NGOs, and private actors. • Manages procurement and service delivery efficiently. • Advises the Department on SWM matters.
City and Municipal Boards	• Develop SWM infrastructure. • Enforce SWM policies and engage the public. • Promote PPPs and coordinate with other levels of government.
Kisumu County SWM SPV (Special Purpose Vehicle)	• Mobilizes resources for SWM. • Engages with CBOs, Informal Waste Actors, NGOs, and private actors. • Manages procurement and service delivery efficiently. • Advises the Department on SWM matters.

National Government (e.g., NEMA)	• Sets environmental and waste management standards and regulations. • Licenses and monitors compliance by service providers.
Private Sector (e.g., licensed waste collectors)	• Provides waste collection, transportation, and processing services under contract or license. • Invests in infrastructure and technology. • Participates in recycling and innovation.
Community-Based Organizations (CBOs)	• Mobilize and educate the community on SWM. • Participate in collection, segregation, composting, and recycling. • Support behavior change initiatives.
Informal Sector (e.g., waste pickers)	• Collect, sort, and recycle waste. • Work with CBOs and County for integration, safety, and formalization. • Participate in cooperatives and local recovery efforts.
Development Partners and NGOs	• Provide funding, technical support, and capacity building. • Support innovation, awareness campaigns, and policy implementation. • Facilitate pilot programs and research.
Research Institutions and Universities	• Conduct research and innovation in waste technologies. • Support data systems, training, and capacity building. • Collaborate on monitoring and evaluation.
Households and Residents	• Responsible for source segregation, safe disposal, and payment of user charges. • Participate in awareness and community cleanup activities.

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