

WASTE COLLECTORS' TOOLKIT

1st Edition 2023



| Foreword

In an era where sustainability is not just a passing trend but an urgent necessity, the role of waste collectors has transcended its traditional boundaries. These unsung heroes of our communities are now playing an expanded role, working tirelessly to maintain a clean and habitable environment. Their unwavering dedication is a cornerstone in our journey towards a greener and healthier future for all.

The creation of the Waste Collectors' Toolkit stems from the need to equip these indispensable individuals with the resources required to navigate the ever-evolving landscape of waste management. It stands as a symbol of empowerment and knowledge, instilling an understanding of our shared responsibility to safeguard the environment and recognizing the pivotal role played by waste collectors in fulfilling this mission.

Amidst an era of unprecedented sustainability challenges, waste collectors are at the forefront of the battle against waste generation, promoting recycling, and charting a course towards a more sustainable tomorrow. This toolkit not only imparts practical advice on effective waste collection techniques, but also delves into the significance of waste reduction, recycling practices, and the proper handling of potentially hazardous materials.

It serves as a bridge between the dedication of waste collectors and the expertise needed to usher in lasting transformation.

Within these pages, waste collectors will discover a wealth of information, ranging from safety guidelines and best practices to innovative waste management approaches that are reshaping communities across the globe. This toolkit empowers waste collectors to enhance their skills, stay abreast of emerging trends, and inspire others to join the movement for a cleaner planet by embracing the knowledge encapsulated herein.

Our heartfelt gratitude extends to waste collectors who, often operating quietly and inconspicuously, contribute significantly to preserving our environment. Their efforts drive us all to make conscientious choices and rally behind the crucial role they undertake each day.

The Waste Collectors' Toolkit serves as a platform for inspiration, education, and empowerment. It stands as a guiding light for change, pointing the way towards a more prosperous and sustainable future for our world.

Together, let's champion a greener environment through sustainable waste management.



Together, let's champion a greener environment through sustainable waste management.

Inspiration



Education



Empowerment



**The Waste
Collectors'
Toolkit
serves as a
platform
for**



Preface

Waste collection plays a crucial role in determining the condition of our communities and the health of our planet in this phase of environmental awareness and sustainable practices. The “Waste Collectors’ Toolkit” provides a complete compendium of knowledge, strategies, and resources to empower individuals working on the front lines of waste collection, emerging as a guiding beacon amidst the complexity of contemporary waste management.

This toolkit is more than just a booklet; it is a symbol of our shared commitment to a more sustainable, more environmentally friendly planet. You are the unsung heroes of waste collection, navigating the complexities of recycling, community involvement, and waste disposal. Your commitment is the driving force behind a better community, reduced environmental impact, and an improved prospect for future generations.

The Waste Collectors’ Toolkit is designed to serve as an ally to complete this obligation. Insights from experts, practitioners, and individuals who have devoted countless hours to improving waste management techniques are revealed throughout its pages. Every waste collection practitioner can use this guide to streamline operations, improve strategies, and mitigate challenges that frequently support in the way of effective waste collecting. You will discover safety guidelines that protect you and your community, learn about waste sorting and segregation methodologies, and delve into the

world of innovative technologies that have the potential to revolutionize waste collection in these chapters. The concepts in the toolkit are clarified by examples from real-world situations, showing their applicability and motivating all to start their own forward-thinking pathway.

The toolkit’s essential essence, however, goes beyond its written and visual content. It embodies an unyielding attitude that every waste collection individual has the capacity to significantly alter the world, a common vision, and a call to action. By using the methods described here, one can improve operations while also acting as agents of change, strengthening relationships with the people they serve and having a long-lasting impact on the environment.

Through this Waste Collectors’ Toolkit illuminating journey you are not alone, as you set out. As a member of a global community of people working to build a sustainable world one collection at a time, you are part of this effort. As you manage the difficulties and take advantage of the opportunities that lie ahead, let this toolkit be your compass, friend, and source of inspiration. We can demonstrate that even the simplest efforts may have significant effects by turning waste collectors into a cornerstone of environmental stewardship. Your commitment and persistent work are influencing a future in which waste is no longer considered waste but rather a valuable resource and each collection brings us one step closer to a cleaner, greener world.

Message from the Chairperson

It is with pleasure and enthusiasm that I present to you our latest initiative – the **'Waste Collectors' Toolkit.** This toolkit serves as a testament to our dedication to providing people and organizations with the tools they need to thrive as we continue to work toward excellence in KEPRO's (Kenya Extended Producer Responsibility Organization) mission of collaboration, commitment, circularity, and community inclusion and incorporation towards embracing circularity, accelerating recycling, and closing the loop towards achieving a sustainable ecosystem.

Waste collectors play a vital role in the waste ecosystem and providing them with access to the appropriate tools and information is essential for attaining our objectives in the fast-paced and constantly changing world. We believe that by equipping our waste collectors with valuable insights, innovative strategies, and a platform for knowledge exchange, we are enabling them to be not just collectors, but true stewards of environmental sustainability. This initiative is not just about waste; it is about cultivating a mindset that fosters responsible waste management, propels recycling initiatives, and leads us towards a circular economy.

Meticulously crafted, the Toolkit has been designed to provide a comprehensive array of tools, expert advice, and invaluable insights. It is also strategically curated to empower and enable you to adeptly navigate challenges and effectively seize opportunities that lie ahead. With its wealth of knowledge, this Toolkit equips you not only to tackle obstacles head-on but also to catalyze positive changes in your waste management journey.

The Waste Collectors' Toolkit proves that our organization has always believed in the endless possibilities of collaboration and information sharing. It is a testament to our dedication to providing the community with the knowledge, tools, and support required to excel in their vital roles. It serves as a beacon of empowerment, intended to uplift those who tirelessly work to keep our environment clean and healthy.

As the Chair of the Kenya Extended Producer Responsibility (KEPRO) Board, I am proud of our team's commitment and effort of devotion in establishing this extremely valuable toolset. It is a manifestation of our unified goals and solid commitment to promoting development, innovation, and advancement.

I strongly urge all of you to utilize the Toolkit to its fullest potential. Its broad selection of tools and resources will satisfy the needs of every user, including experienced professionals, prospective entrepreneurs, and passionate learners. Let it influence you as you aspire for ultimate excellence. The transformational outcomes that the Waste Collectors' Toolkit will have on everyone who uses it is something I look forward to seeing.



Akshay Shah
Board Chair
Kenya Extended Producer Responsibility Organization (KEPRO)



Message from DI East Africa

The **Waste Collectors Toolkit** is premised on the recognition of the critical role of waste collectors in Kenya's waste ecosystem who essentially act as the link and are responsible for ensuring that each component of the waste stream reaches its intended recipient and does not leak into the environment. Like in other low- and middle-income countries, waste collectors in Kenya underpin the recycling loop of the circular economy.

Important to note is that for the first time, waste collectors have received formal recognition through Kenya's Sustainable Waste Management Act of 2022. Further, the proposed Extended Producer Responsibility (EPR) regulations offer informal sector workers choices in how they can responsibly and comfortably collect waste materials. This can involve either continuing their traditional waste-picking activities or becoming part of social enterprises or cooperatives. These changes provide opportunities for waste collectors to generate additional income not only from valuable waste materials but also from those with lower market value.

The quest from Denmark's long journey towards a circular economy includes understanding products recyclability, consumer mindset, environmental impact, pollutants they may contain, and which ones require management attention. This understanding underscores the continual need to empower waste collectors and recyclers, as they possess indispensable knowledge about material composition and recyclability. This knowledge is crucial for effectively reusing materials and maximizing the value derived from waste. The existing reliance on waste collectors within the current circular systems is noteworthy, as waste pickers depend on this work for their livelihoods. Given the substantial "circularity gap," exceeding 90%, and the lengthy timeframe for a significant transition, The Confederation of Danish Industry (DI) believes that the circular economy is still evolving, and societal priorities must be integrated at this juncture.

We believe that this document will not only serve as a technical resource for waste collectors in the day-to-day operations but as a tool to embed the principles of just transition as per the ILO R204 in the implementation of the SWMA 2022. The document also provides a breakdown of the business case for engaging in waste picking as a source of livelihood, in a bid to advance our shared commitment of encouraging job creation in the waste value chain, while making recyclers and manufacturers more profitable.

Klaus Lehn Christensen,

Klaus Lehn Christensen,
East Africa Manager,
The Confederation of Danish Industry



List of Acronyms

SWM	Solid Waste Management
SWMA	Sustainable Waste Management Act
NEMA	National Environment Management Authority
IWS	Informal Waste Services
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-Habitat	United Nations Human Settlements Programme (formerly UNCHS (Habitat))
GDP	Gross Domestic Product
SDG	Sustainable Development Goals
KEPRO	Kenya Extended Producer Responsibility Organization
DI	Danish Industry East Africa
PRO	Producer Responsibility Organisation
KPP	Kenya Plastic Pact
ILO	International Labour Organisation
PPP	Public-Private Partnership
PPE	Personal protective equipment
EPR	Extended Producer Responsibility
NGO	Non-Governmental Organisation
MSW	Municipal Solid Waste

Acknowledgements

We extend our heartfelt gratitude and appreciation to [all those who contributed](#) to the creation, writing and development of the Waste Collectors Toolkit. This endeavor would not have been possible without the collaborative efforts, dedication, and expertise of numerous individuals and organizations.

Our appreciation extends to the [designers, developers, and content creators](#) who worked diligently to transform ideas into a visually appealing and user-friendly toolkit. Your creativity and technical prowess have enhanced the accessibility and usability of this resource.

We express our sincere thanks to the [waste management experts, CBOs, environmentalists, and professionals](#) who provided valuable insights and guidance throughout the development process. Your knowledge and passion have played a pivotal role in shaping this toolkit into a comprehensive and effective resource.

Furthermore, we acknowledge the technical and financial support, as well as resources provided by [DI East Africa](#). Your commitment to promoting sustainable waste management practices has been instrumental in bringing this toolkit to fruition.

We are also deeply thankful to the [waste collectors and sanitation workers who shared their frontline experiences and challenges](#). Your firsthand perspectives have been the driving force behind the toolkit's user-centered approach, ensuring its relevance and practicality in real-world situations.

Similarly, we recognize the [larger community of advocates, policymakers, and individuals who have shown interest in improving waste management practices](#). Your enthusiasm and dedication to creating a cleaner and healthier environment have driven us to develop a toolkit that we hope will make a positive impact.

Together, we have created a toolkit that not only addresses the challenges faced by waste collectors but also contributes to a more sustainable and responsible future. Your contributions are deeply valued, and we look forward to the positive change that the Waste Collectors Toolkit will bring about.

Executive Summary

What?



About the Toolkit

The Waste Collectors' Toolkit is a thorough manual created to help waste-collecting specialists handle waste more effectively. Aiming to enhance waste collection procedures and contribute to a more sustainable and environmentally friendly waste management system, this toolkit serves as an invaluable resource and set of tools that address the challenges faced by waste collectors in daily operations.

It is a significant resource for waste-collecting individuals, providing a comprehensive strategy to handle issues and enhance waste management procedures. The toolkit supports the development of more sustainable waste management systems and cleaner, healthier environments by encouraging effective collection, correct sorting, and community involvement.

Who?



Purpose of the Toolkit

The main goal of the Waste Collectors' Toolkit is to give individuals who collect waste the information, techniques, and equipment they need to run their businesses more efficiently. It strives to tackle prevalent issues that might result in higher expenses, environmental impact, and operational inefficiencies, such as improper route planning, insufficient waste sorting procedures, and inadequate availability of appropriate equipment. The toolkit assists waste collectors in improving their operations, minimizing their negative environmental effects, and promoting cleaner and healthier communities by providing useful ideas and recommendations. Further, the toolkit is supposed to equip the reader with information on the SWMA 2022 and the resulting EPR regulations



Why?

Users of the Toolkit

The toolkit is designed to be used by a wide range of people, including trash collection businesses, municipal waste management teams, non-governmental organizations (NGOs), waste collectors, organizations engaged in waste management, and individual waste collectors. It considers the various contexts in which waste collection occurs and provides solutions for both urban and rural environments. The toolkit provides customizable solutions to address various targets, to show an organization aims to improve collection planning, put in place better waste segregation techniques, or increase worker safety.

Structure of the Toolkit



Introduction and Overview: Describes the toolkit's goal and its importance in sustainable waste management.



Best Practices in Waste Collection: Provides a compilation of tried-and-true tactics for successful waste collection, such as route optimization, time management, and community involvement.



Waste Sorting and Segregation Guidelines: Outlines comprehensive recommendations for efficient waste sorting and segregation at the point of generation, with a focus on lowering contamination and fostering recycling.



Safety Protocols and Equipment Guidelines: This section focuses on worker safety by providing recommendations for using appropriate equipment, handling potentially hazardous items, and putting safety protocols into practice in garbage collecting activities.



Technological Solutions: Examines tech-driven strategies that can improve data-driven decision-making and collection efficiency, such as waste-collecting apps, GPS monitoring systems, and data analytics.



Community Engagement and Education: Offers techniques for encouraging neighborhood's involvement in waste management initiatives via awareness campaigns, workshops, and instructional resources.



Case Studies and Success Stories: Highlights quantifiable changes and beneficial effects by highlighting real-world instances of how garbage collection experts have effectively applied the toolkit's tactics.



Resource Library: Provides waste collectors with editable templates, checklists, posters, and other useful materials that they might use in their operations.



References and Further Reading: Provides sources for more information on laws, rules, and related subjects pertaining to waste management.

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01

Introduction

1.1 Introduction

Proper Waste Management is critical in safeguarding sanitation and public health, improving resource efficiency and protecting the environment. In developing countries, solid waste management is more often the responsibility of local governments and most of the time the government's single largest projects. Effective waste management, however, remains a challenge due to scarce human, financial and physical resources. In communities, cities, and nations where there is underdeveloped formal waste management, informal waste pickers have majorly played a key role in the collection, sorting and recycling of waste.

According to World Bank 2018 report, "What a Waste: A Global Review of Solid Waste Management 2050", Every year, the globe produces 2.01 billion tons of municipal solid waste, of which, at the very least, 33% isn't disposed of in a way that protects the environment. The amount of garbage produced per person per day varies greatly over the world, from 0.11 to 4.54 kilos, with an average of 0.74 kilograms. High-income nations produce around 34%, or 683 million tons, of the world's waste despite having just 16% of its population. By 2050, it is anticipated to be approximately 3.40 billion tons of waste generated globally.

Waste production and income level typically have a positive relationship. Compared to low- and middle-income countries, where it is estimated to rise by roughly 40% or more, daily per capita waste generation is expected to rise by 19% in high-income countries by 2050. In general, it was discovered that waste generation increased more quickly at lower income levels than at higher income levels for incremental income changes. By 2050, it is anticipated that low-income nations would produce waste more than three times the amount that it currently produces according to the World Bank report in 2018.



Figure 1: Overview of global waste generation (according to the World Bank report in 2018)

2 Billion Tonnes

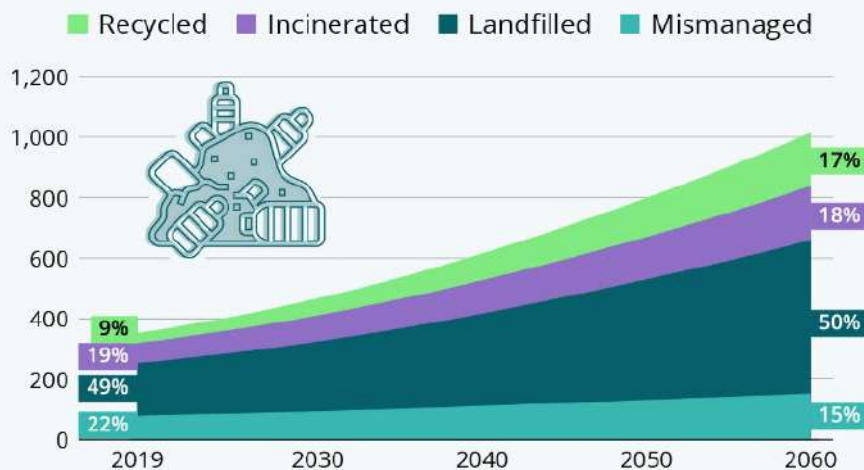
of municipal solid
waste were
generated in 2015



Global Perspective of plastic waste generation

Recycling Efforts Not Enough to Solve Plastic Waste Problem

Estimated global plastic waste by waste management category (in million tonnes)*



* after disposal of recycling residues and litter collection

Source: OECD Global Plastics Outlook



statista

Figure 2: Global plastic waste is on the rise Image: Statista (Source: <https://www.weforum.org/>)

NOTE: The plastic waste generation and overview is comparable to all the other waste fractions and can be managed using the same mechanism as plastics but with the focus of the specific waste being addressed.

Africa produced 125 million tonnes of MSW in 2012; by 2025, that amount is anticipated to treble. Africa is forecast to generate more rubbish than any other region in the world. Many African nations offer insufficient waste collection services. Only 55% of MSW is typically collected on average. More than 90% of the waste produced in Africa is disposed of in uncontrolled landfills and dumpsites, usually associated open burning.

Africa, specifically Sub-Saharan Africa, is home to 19 of the top 50 largest landfills in the world. The majority of MSW created in Africa is currently dumped,

yet 13% of it is typically plastic and 57% of it is organic waste, which could provide significant socioeconomic potential for nations Africa is seeing a rise in recycling, driven more by socioeconomic needs, poverty, and unemployment than by public or private sector design. Only 4% of MSW is now recycled, even though 70–80% of MSW produced in Africa is recyclable. By actively recovering valuable materials from waste, informal waste pickers help municipalities and private businesses do so for little to no expense (UN-Environment & Council for Scientific and Industrial Research (CSIR) 2012, Africa

waste management Outlook, The state of waste management in Africa).

Kenya as any other developing country faces this waste management problem. According to the Integrated Solid Waste Management in Nairobi County, Kenya Plastic Action Plan, 2015, waste generation is close to 3,000 metric tonnes per day where 70% of the waste is collected and 30% constitutes the uncollected waste. Of the 70% collected only 20% ends up to the recycling companies for recycling, 50% ends up into the dumpsites while the rest low unknown volumes are then collected from these dumpsites by waste pickers for an income (JICA 2010).

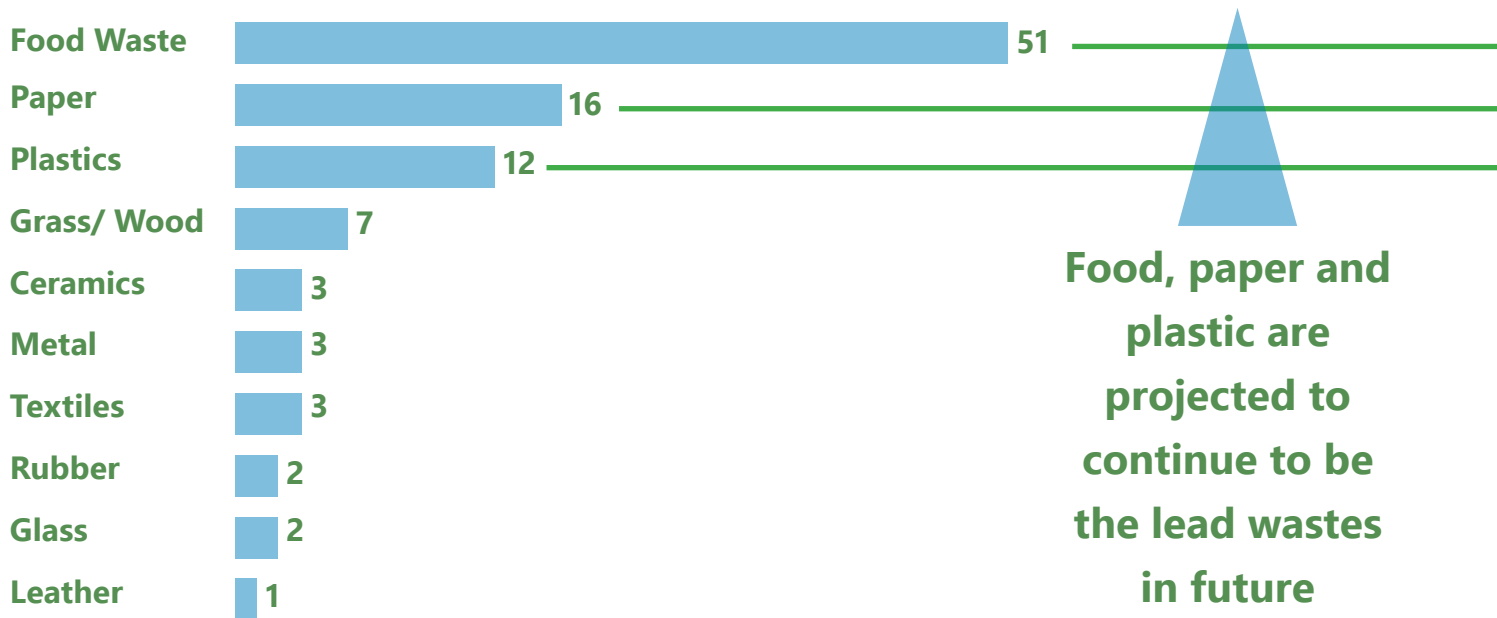


Figure 2: Composition (in percentage) of Kenya's solid waste (Kenya Vision 2030)

According to estimates from Nairobi City Council 2010, In the capital, Nairobi, an estimated 3,000 tons close to 0.5kg per capital solid waste is generated every day, 66% of this is Organic

12% paper, 10% plastic, 3% textile and rubber, 2% glass, 2% metal and 5% other wastes. Approximately 70% waste is collected, 30% is uncollected, 50% ends up being dumped

into the dumpsites or landfills. Only 50% of this total is collected, and 25% of the garbage produced ends up in the municipal landfill in the city (JICA, 2010).

Municipal Solid Waste Streams in Nairobi

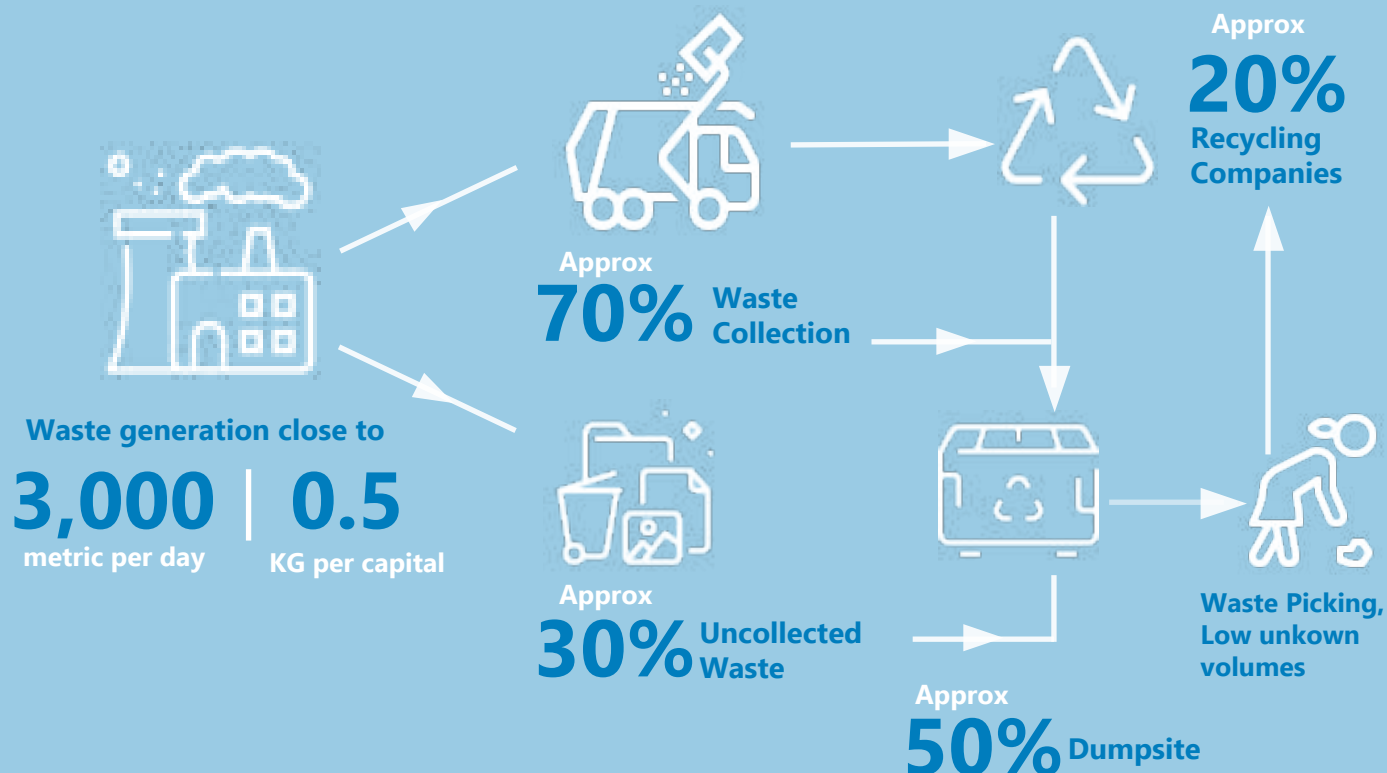


Figure 3: Nairobi waste generation (JICA 2010)

The Waste Problem in Kenya

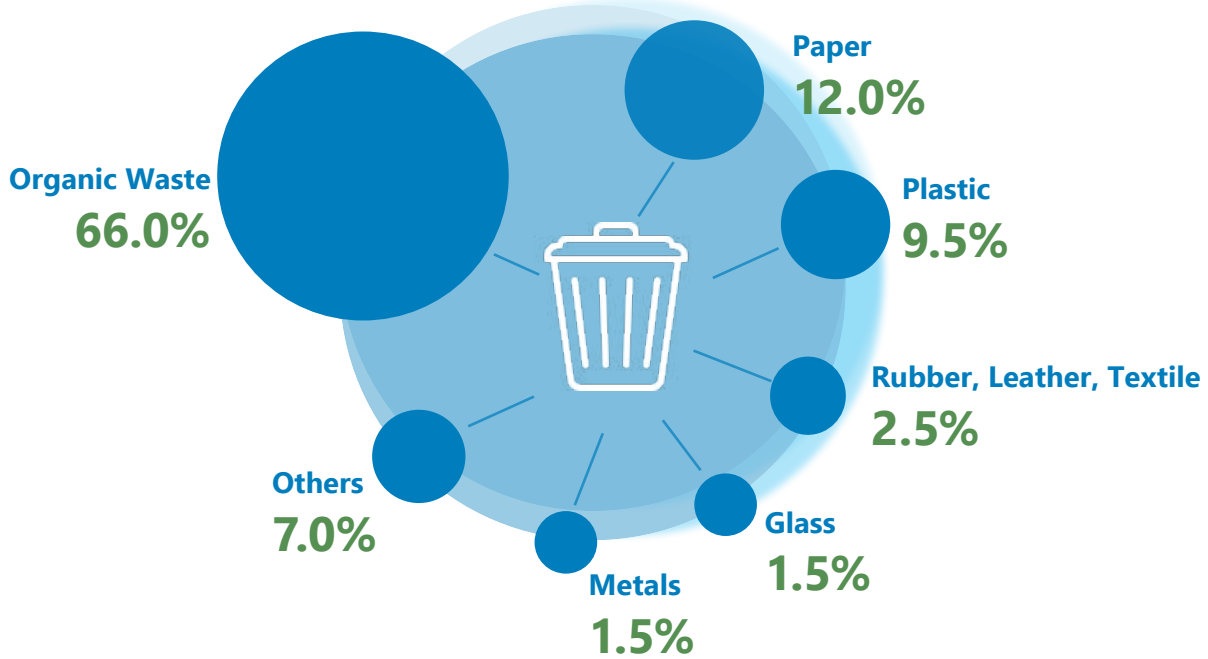


Figure 4: Nairobi Waste Generation (JICA 2010)

Waste management relies heavily on global collaboration and technical breakthroughs. Innovative waste-to-energy technologies, enhanced recycling techniques, and trash tracking systems have the potential to revolutionize

waste management practices worldwide. Sharing best practices, expertise, and technologies across boundaries can help waste management advance. Countries must share their expertise, experiences, and best practices to improve

waste management globally. International conferences, workshops, and partnerships serve as platforms for the exchange of ideas and skills. Initiatives to increase capacity help countries strengthen their waste management systems, policies, and infrastructure.

State of the Environmental Economy in Kenya

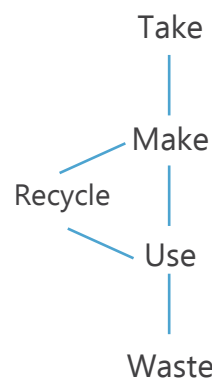
Current environment is largely **linear**. Main challenges in Kenya’s waste recycling value chain:

1. Segregation
2. Logistics
3. Licensing/ Regulatory framework
4. Product Design
5. Secondary Market
6. Awareness/ Education

Linear Economy



Recycling Economy



Circular Economy

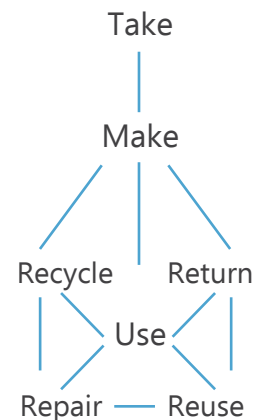


Figure 5 Waste management and environmental economy state in Kenya

Waste management is a key issue in many developing countries, like Kenya, where increasing urbanization, population increase, and inadequate infrastructure pose substantial challenges. Kenya's Waste production is increasing as its population and urbanization rise. Major

Kenya faces infrastructure under development in waste management, including collection, transportation, and disposal facilities. Many communities lack effective garbage collection services, which leads to open dumping and waste burning, releasing dangerous pollutants into the

To address waste management, the Kenyan government has enacted several rules and regulations. Waste management regulations and enforcement are the responsibility of the National Environmental Management Authority (NEMA). The Sustainable Waste

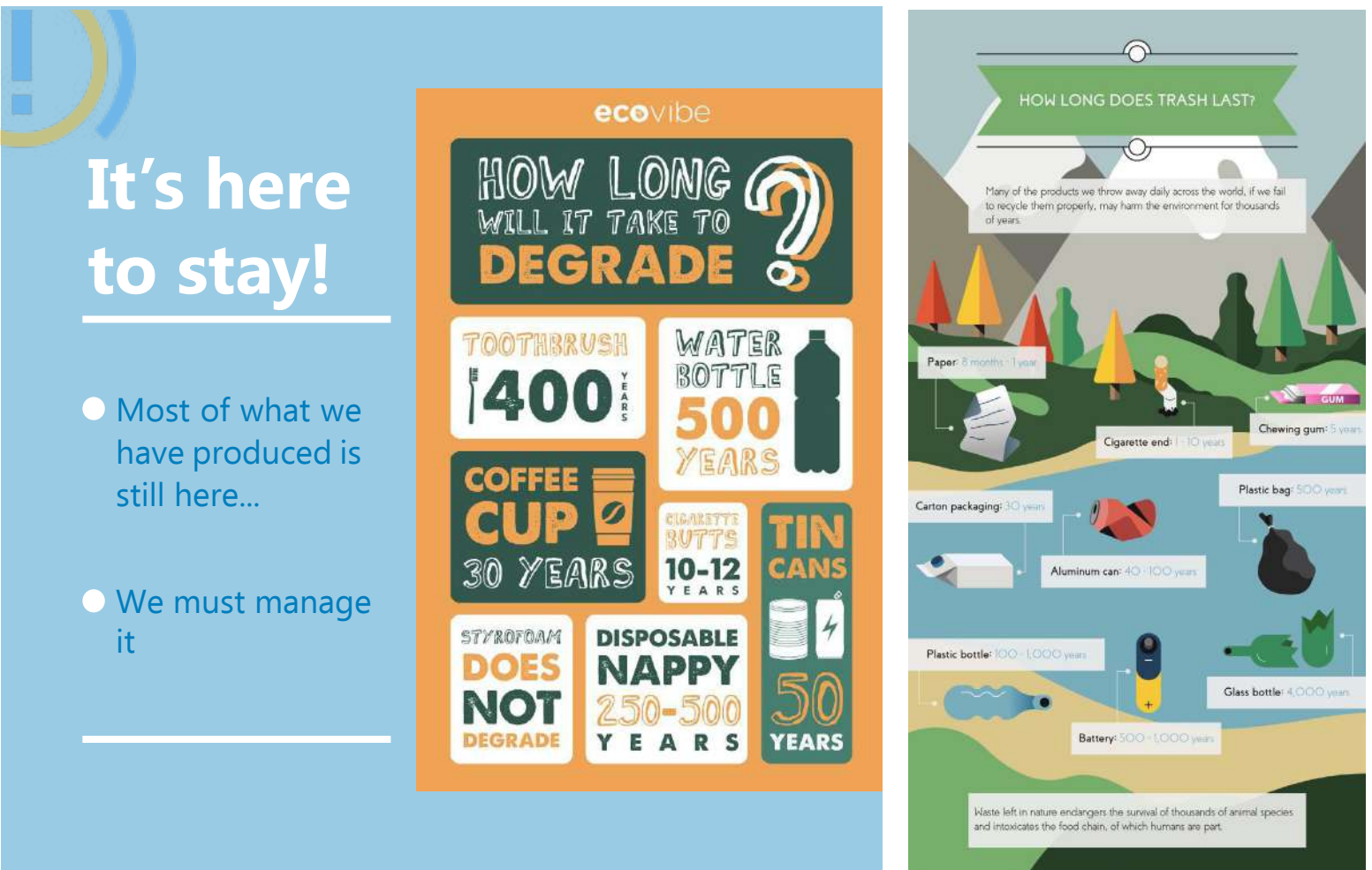


Figure 6: How long waste take to decay? (Source: Eco vibe)

contributors are municipal solid waste, agricultural waste, industrial waste, and plastic waste. Improper waste disposal causes environmental pollution, health risks, and ecological degradation. Waste is still here with us, and it will take a lot of time to decay or for us to eradicate it, thus, we need to

manage it to achieve Sustainable Circular economy (<https://www.activesustainability.com/environment/waste-planet-digest-how-long-it-takes-to-decay/> [ecovibe](https://www.ecovibe.com/)) air, land, and water.

In Kenya, the informal waste sector plays a key role in

garbage management. Waste pickers, sometimes known as "scavengers," collect and sort recyclables from waste streams. They contribute significantly to recycling initiatives, but they frequently operate in hazardous situations with minimal resources and experience social and economic marginalization.

Table 1: Solution to improper waste management

Governments need to:	Businesses have mastered:
<ul style="list-style-type: none"> ● Follow what works globally but implement what works locally... ● Start shutting down Landfills and mandate segregation at source policies with waste going to MRF's. ● Put policy in place mandatory PRO structures to allow for waste management. ● Allow Private sector to operate PRO's. ● Manage it vs ban it... many times the alternatives are worse. ● Set targets & hold the PROs accountable. 	<ul style="list-style-type: none"> ● The company's tendency of production in relation to the economics of supply chain from Land into hands ● Sales, marketing & advertising strategies to consumer awareness and consumption of the products. <p>Why can't we do the reverse?</p> <ul style="list-style-type: none"> ● Hold Environmental responsibility of Hand to Hand? ● Create Awareness and change consumer habits towards segregation of waste at source. ● Designing products and supply chains to reverse the waste production and management.

The Sustainable Management Act of 2022 provides a legal and administrative framework for sustainable waste management to ensure the realization of the constitutional (Section 42) provision of the right to a clean and healthy environment, and other related goals. To improve waste management in Kenya, investments in infrastructure development, policy implementation and enforcement, recycling and waste reduction initiatives, public awareness and education, and support for the integration of the informal waste sector into formal waste management systems are all necessary.

Collaboration between the government, non-governmental organizations (NGOs), the business community, and communities is

also essential for developing a sustainable and effective waste management system in Kenya.

Note: Waste pickers and collectors play a vital role in managing and recycling waste, contributing to environmental sustainability and public health. This guide aims to provide essential information and tips for waste pickers and waste collectors in Kenya. By following these guidelines, waste management professionals can enhance their efficiency, safety, and overall effectiveness.

The waste value chain consists of various actors involved in the management and handling of waste at various stages. These actors can vary depending on the region, waste type, and local regulations.



The Waste Value Chain

1. Waste Generators: These are individuals, households, businesses, industries, or institutions that produce waste. Waste generators can be categorized as residential, commercial, institutional, or industrial.

2. Collectors: Waste collectors are responsible for collecting waste from the waste generators. They can be private companies, municipal departments, or informal waste pickers.

3. Transporters: Transporters are responsible for transporting collected waste to various facilities, such as transfer stations, recycling centres, composting sites, or landfills.

4. Transfer Stations: Material recovery facilities: Transfer stations are intermediate facilities where waste from collection vehicles is temporarily stored and consolidated before being transported to final disposal or processing sites.

5. Recycling Centres: These facilities sort, process, and recycle materials from the waste stream, such as paper, plastic, glass, metal, and electronic waste.

6. Composting Facilities: Composting facilities process organic waste, like food scraps and yard waste, into compost, a valuable soil amendment.

7. Waste-to-Energy Facilities: These facilities convert non-recyclable waste into energy through processes like incineration or anaerobic digestion.

8. Landfills: Landfills are sites where waste is disposed of and buried. Modern landfills are designed with environmental protection measures to minimize pollution.

9. Regulatory Bodies: Government agencies and local authorities play a crucial role in regulating and monitoring waste management practices, setting policies, and ensuring compliance with environmental laws.

10. Non-Governmental Organizations (NGOs): NGOs often work alongside governments and other stakeholders to raise awareness, promote sustainable waste management practices, and advocate for better waste management policies.

11. Manufacturers and Producers: Producers of goods are increasingly taking responsibility for their products' end-of-life, participating in extended producer responsibility (EPR) programs, and designing products with recyclability in mind.

12. Consumers: Consumers also play a role in the waste value chain by making choices that affect waste generation, recycling behavior, and product disposal.

13. Researchers and Innovators: Scientists, researchers, and innovators contribute to the waste value chain by developing innovative technologies and processes for waste management, recycling, and waste reduction.

14. Waste Consultants and Experts: Waste management consultants and experts provide specialized knowledge and advice to various stakeholders on efficient waste management practices.

15. Financial Institutions: Financial institutions may invest in waste management projects, providing funding and support for waste infrastructure development.



Effective waste management requires collaboration and coordination among these various actors to optimize waste reduction, recycling, and disposal practices, leading to a more sustainable approach to waste handling.

In this handbook the focus will be on the 'waste collectors' as the main actors in the waste value chain as highlighted in the Sustainable Waste Management Act 2022.



In this Handbook, we will use the term "Waste Collectors" to replace "waste pickers" in the definitions derived by other organizations.

Image Source: pexels.com

1.2 Who are waste pickers and collectors?

Waste picker refers to a group of persons, or a person involved in collection and recovery of reusable and recyclable solid waste from the source of waste generation, the streets, bins, material recovery facilities, processing, and waste disposal facilities for sale to recyclers through intermediaries or directly to earn their livelihood.

The International Labour Organization (ILO) posits that Waste pickers range from people rummaging through garbage in search of food, clothing, and other basic, daily needs to informal private collectors of recyclables for sale to middlemen or businesses, as well as organized collectors and sorters of recyclables.

“Waste picker” means a person who collects identified products from residential and commercial waste bins, landfill sites and open spaces to revalue them and generate an income; National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).

Waste-pickers, also known as ‘scavengers,’ are men, women and children that make their living by selling or using valuables from materials that households and commerce discard. Sarka (2003) described them as those who make a living by collecting and selling recyclable materials out of municipal solid waste.

‘Waste pickers’ are people who make a living on waste in an informal way. Informal means that they have no contract, no regular income, rather simple equipment to work with, little recognition and high vulnerability (GIZ 2011, report Recovering resources, creating opportunities Integrating the informal sector into solid waste management).

Informal waste workers are “individuals or small and micro-enterprises that intervene in waste management without being registered and without being formally charged with providing waste management services,” according to the International Labor Organization (ILO 2015).

Waste pickers

Individuals/workers who pick items and materials from public spaces, open dumpsites, or landfills, and/or waste bags and bins on streets, and sell recyclables to intermediate or apex traders (SWMA 2022).

Informal waste collectors’

- Individuals/workers who collect mixed, or source segregated solid waste from waste generators, mostly for a fee, and either drop it at formal or informal collection points or sell recyclables to intermediate or apex traders. These include individuals/workers often referred to as itinerant buyers, who buy or barter recyclables from waste generators (SWMA 2022).



Image Source: pexels.com

In Kenya, the Sustainable Waste Management Act 2022 integrates informal waste actors into one and defines them as “waste Collectors”. Therefore, in this Handbook, we will use the term “Waste Collectors” to replace “waste pickers” in the definitions derived by other organizations.

‘Informal collectors’ charge a pickup fee to residents. Collectors use pushcarts, donkey carts, horse carts and motorized vehicles to transport the waste. Collectors recover the recyclables in the waste and sell them for reuse or recycling. In most cities, informal waste collectors serve a significant part of the population. Most urban areas lack municipal waste collection, and informal collectors provide this service to most of the population.

1.3 What is the contribution of waste collectors in the waste value chain?

The informal waste sector “waste collectors” is thought to provide a living for up to 2% of the urban population in developing nations. As a result, at least 15 million people around the world receive income from the informal waste services “waste collectors”. Numerous billions of dollars in economic impact are caused by the Informal Waste Services each year (Medina, 2007).

By encouraging resource rotation and minimizing disposal, waste pickers significantly improve public health, sanitation, and the

environment at the local, national, and worldwide levels. According to UN Habitat research 2010, rubbish pickers handle most continuous waste collection at no cost to municipalities in many cities in poor countries. Similarly, the UN Habitat 2007 research, waste pickers in three of the six cities looked at recovered about 20% of all waste.

Despite their positive effects on the environment and society, waste pickers frequently lack legal status as employees. Poor working conditions and a lack of social protection affect them.

MRFs (Material Recovery Facility)

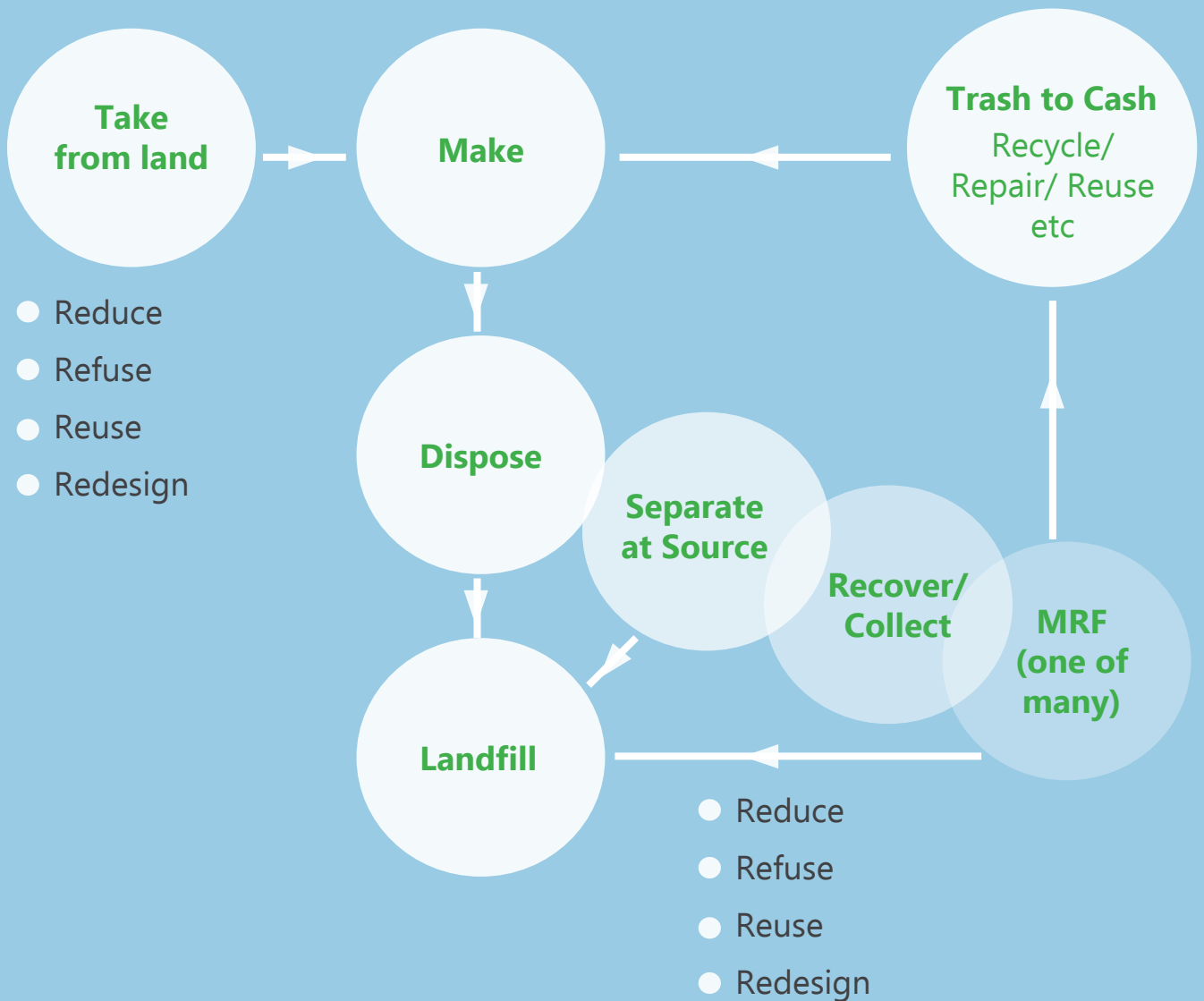


Figure 7: Link of waste collection and the recycling ecosystem

Roles of waste collectors

The efficient operation of the waste value chain and the promotion of ecologically responsible waste disposal methods depend on waste collectors. **The primary link between the linear and circular economies is the waste collector.** The value chain's key players, the collectors, guarantee that newly generated waste is

collected to keep it from becoming legacy waste. Additionally, collectors support source separation of waste since it strengthens the connection between waste collectors and the recycling ecosystem, promoting the circular economy and sustainable waste management.



Waste collectors provide a significant contribution to the waste value chain by simplifying waste collection, sorting, transportation, and resource recovery. They seek to develop environmentally friendly waste management practices, resource conservation, and environmental protection. The waste value chain would be insufficient without their active participation, preventing

the creation of efficient and robust waste management systems. Waste pickers and collectors give raw materials to the industrial sector, contribute preserve space at landfills, and, if they manage organic waste, produce compost and biogas. They also lower the cost of managing and transporting waste.

1.4 How to integrate waste collectors in the waste value chain

It takes a coordinated strategy involving many stakeholders to integrate garbage collectors into the waste value chain effectively. Following are some crucial actions to support their integration:

Integration of Waste Collectors in the Waste Value Chain



1. Collaboration and Partnerships:

Encourage cooperation between waste management organizations, recycling facilities, local government entities, and other pertinent stakeholders. Create alliances that support communication, cooperation, and coordinated action along the whole waste value chain.



2. Training and Capacity Building:

Offer programs that will help waste collectors develop their skills and expertise in waste management. This covers instruction on trash segregation, recycling techniques, safety procedures, and environmental laws. Waste collectors will be able to carry out their duties more successfully and effectively if they invest in their professional development.



3. Standardization and Guidelines:

Create uniform processes and rules for collecting, classifying, and transporting garbage. These rules should be in accordance with regional laws and industry standards. It is simpler to integrate garbage collectors into the larger waste value chain when waste management techniques are standardized to maintain consistency and uniformity.



4. Support for facilities and Equipment:

Ensure that waste collectors have access to the equipment and facilities required for effective waste collection and transportation. The provision of disposal bins, trucks, sorting facilities, and personal protective equipment may fall under this category. The total efficiency and efficacy of garbage collecting activities are increased with adequate infrastructure and equipment support.



5. Information Management and Technology:

Implement systems for managing information and technological solutions to improve waste collection routes, track activities, and assess performance. Operations can be streamlined with the aid of these technologies, which can also help with scheduling and give information for ongoing performance evaluation.



6. Public Awareness and Engagement:

Involve the community and educate people about the value of properly disposing of waste and the function of waste collectors. Inform locals on effective waste separation, recycling techniques, and the importance of their participation. Encourage people to support waste collectors by recycling regularly and adhering to waste management guidelines.

7. Incentives and Recognition:

Honor and commend waste collectors for their contributions to the waste value chain. Offer rewards like performance-based bonuses, recognition programs, or chances for professional promotion. Recognizing their efforts and successes increases motivation and promotes excellence in waste management procedures.

Waste collectors can be successfully incorporated into waste value chain through executing these procedures, ensuring their active involvement and commitment to sustainable waste management methods. To effectively recover resources, reduce waste, and safeguard the environment, they must be involved.



Image Source: pexels.com

1.5 Just transition in waste management

A just transition to a circular economy for waste management could be described as the process of developing, advocating for, and putting into practise measures to transition to sustainable waste management in a way that is equitable and inclusive of everyone involved,

including waste pickers and other workers in the waste value chain, creating decent employment opportunities, and leaving no one behind. In simple terms, “just transition” in waste management refers to the process of transitioning from traditional waste management practices, such

as landfilling and incineration, to more sustainable and environmentally friendly approaches. Just transition emphasizes the need to ensure fairness, equity, and social inclusiveness during this transition for all stakeholders involved, including waste workers, affected communities, and industries.

Current environment is largely **linear**. Main challenges in Kenya’s waste recycling value chain:



1. Segregation
2. Logistics
3. Licensing/ Regulatory framework
4. Product Design
5. Secondary Market
6. Awareness/ Education

Figure 8: A just transition initiative (UNEP, 2020)

A just transition in waste management is vital for achieving global sustainability goals and minimizing the environmental and social impacts of waste generation.

It requires a coordinated effort from various stakeholders to ensure that waste management practices become more sustainable, inclusive, and supportive of local communities and workers.

United Nations Environment Programme (UNEP). (2020). Advancing a just transition to a circular economy for waste management. United Nations Environment Programme.

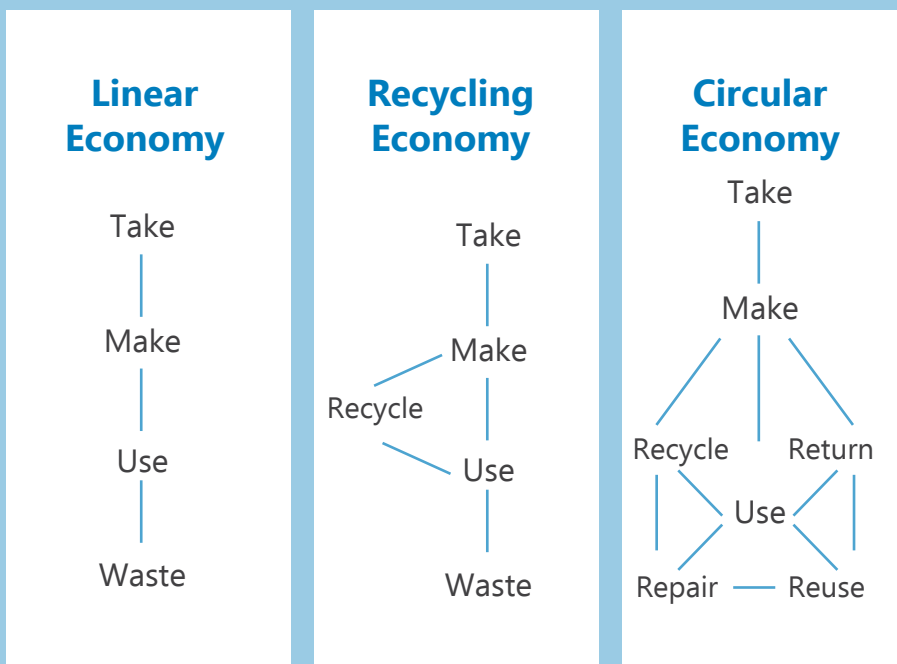
1.6 Role of waste collectors in the circular economy

By gathering and managing waste in a way that encourages recycling, reusing, and recovering valuable resources, waste collectors play a critical role in the development of

a circular economy. They are primarily responsible for collecting and transporting waste from residences, businesses, and other sources to specific processing facilities.

They are primarily responsible for collecting and transporting waste from residences, businesses, and other sources to specific processing facilities.

Definition of the key concepts related to waste management and the broader economic framework:



a focus on gathering, classifying, processing, and converting waste resources into fresh goods or starting materials for production. Recycling minimizes garbage transported to landfills or incineration, conserves energy, and helps cut down on the usage of virgin resources.

3. Circular Economy:

A circular economy is an economic model intended to increase the value and usefulness of resources while reducing waste and environmental damage. It uses tactics including reuse, recycling, remanufacturing, and resource recovery to keep goods, materials, and resources in use for as long as feasible. To reduce the need for extracting fresh raw materials, a closed-loop system must be established where resources are consumed, recovered, and then reused.

1. Linear Economy:

A linear economy, commonly referred to as a conventional or “take-make-dispose” economy, is one in which resources flow in a straight line. When a resource reaches the end of its useful life, it is extracted, processed, turned into a product, used, and disposed away as waste. This

strategy frequently results in the depletion of resources, a rise in waste production, and environmental degradation.

2. Recycling Economy:

The recovery and reuse of resources from waste is the main emphasis of the recycling economy, which is a subset of the circular economy. It places

Waste collectors assist in the shift and transition from a linear economy towards the circular economy through accelerating the recycling ecosystem by

making sure that valuable resources found in waste streams are efficiently collected and delivered to facilities for recycling and recovery.

Their initiatives aid in resource conservation, trash disposal reduction, and the advancement of ethical resource management techniques.

Waste management transition Model to circularity

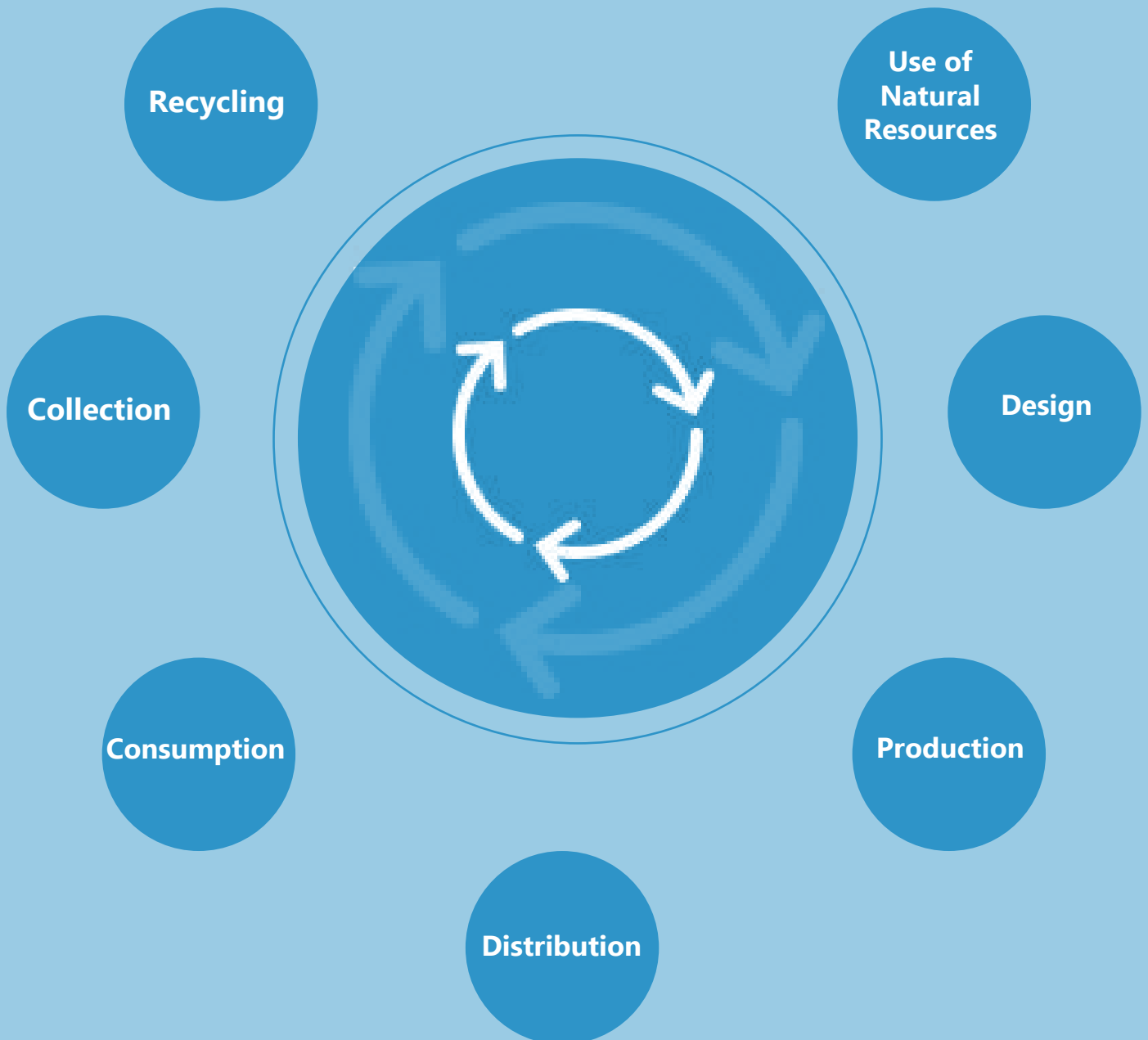
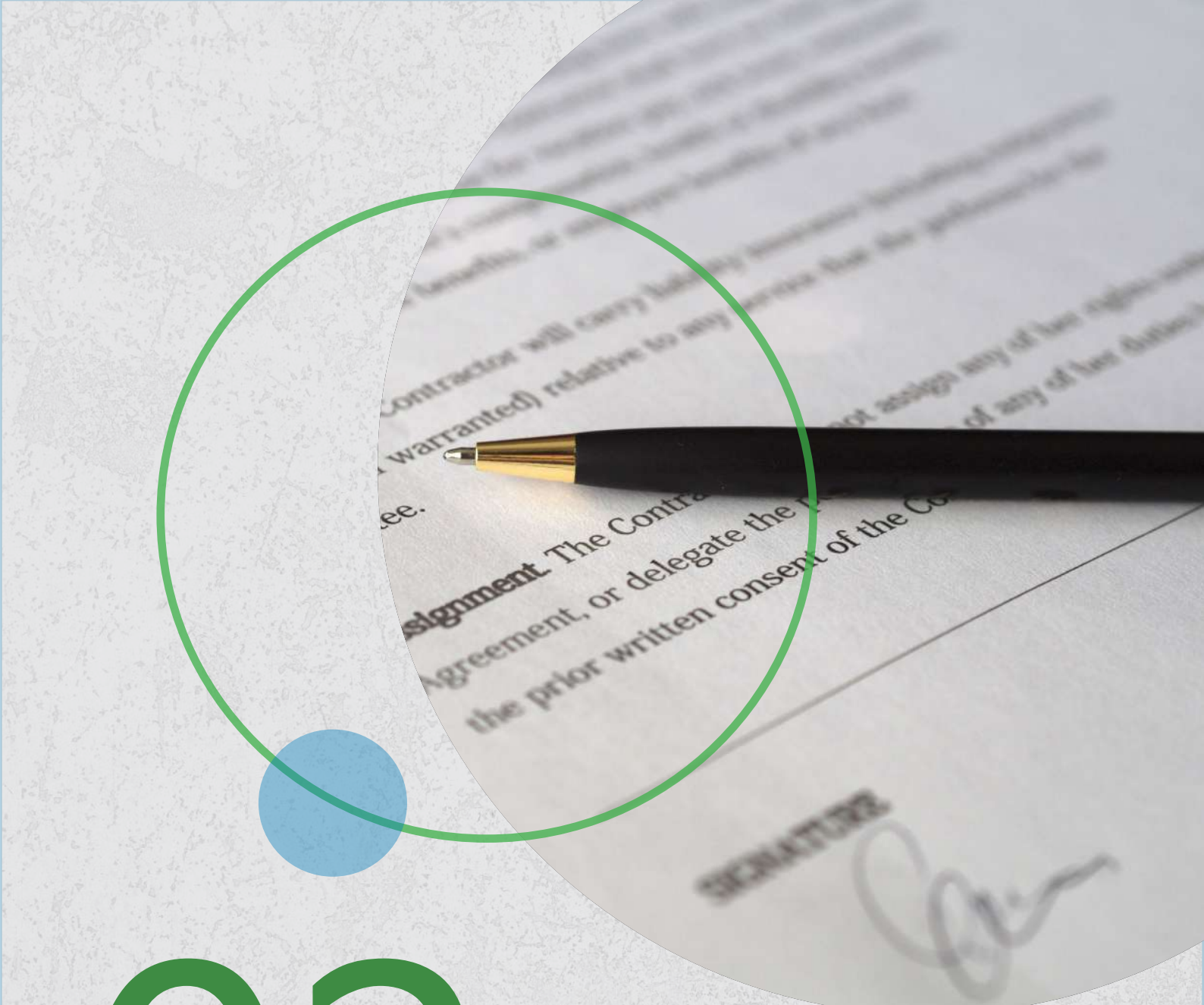


Figure 9: Waste management transition Model to circularity



02

Regulatory framework for waste collection in Kenya

Regulatory provisions to waste management

Waste pickers and waste collectors should be aware of the legal regulations and requirements governing their activities.

2.1 Kenyan Constitution - Section 42

The Kenyan constitution, section 42 states that every person has the right to a clean and healthy environment, which includes the right:

a) To have the environment protected for the benefit of present and future generations through legislative and other measures, particularly those

contemplated in Article 69; and

b) To have obligations relating to the environment fulfilled under Article 70.

2.2 Sustainable Waste Management Act (SWMA) 2022

This is an act of parliament to establish the legal and institutional framework for the sustainable management of waste and ensure realization of the constitutional provision on the right to a clean and healthy environment and for connected purposes.

Recently published and Gazetted, the Sustainable Waste Management Act, 2022 aims to establish sustainable waste management. It calls for the development of extended producer responsibility programs and a circular economy to cut down on waste. It offers the for the construction of recycling facilities and the provision of financial incentives in each county. The Act's primary goals are to encourage environmentally friendly waste management practices, lower pollution, and promote circular economy principles.

"Sustainable waste management" means using material resources efficiently as prioritized by waste hierarchy, circular economy, and clean production to reduce the amount of waste that is generated, deposited, or discarded in the environment including the management of materials that would otherwise have been dumped or wasted in a way that contributes to environmental, social, and economic goals of sustainable development.

"Waste management facility" means a site or premises licensed in accordance with this Act for the purposes of receiving, accumulation, depositing, recovery, recycling, treatment, storage, and disposal of waste and includes waste processing areas, transfer stations, reusing areas, materials recovery facilities,

recycling plants, food waste treatment facilities, composting plants, waste disposal areas, waste - to-energy facilities and sanitary landfills

"Waste management activity" administrative or operation activity for the:

a) importation or exportation of waste as prescribed by regulations.

b) segregation of waste including any activity or process that is likely to result in generation of waste.

c) accumulation and storage of waste.

d) collection and handling of waste.

e) reduction, reusing, recycling and recovery of waste.

f) trading in waste.

g) transportation of waste.

h) transfer of waste.

i) treatment of waste.

j) disposal of waste.

“Waste minimization programme” or “waste reduction programme” means a programme that is intended to promote reduction in generation and disposal of waste.

“Waste service providers” includes collectors, transporters, waste processors, material recovery operators, recyclers, and landfill operators.

“Waste valorization” means any activity aimed at converting waste, including materials, chemicals, and sources of energy, into useful products by reusing, recycling, or composting the waste.

2.2.1 Objectives of the Sustainable Waste Management Act, 2022

The Objectives of the Sustainable Waste Management Act of 2022 are:

- a) To promote sustainable waste management.
- b) To improve the health of all Kenyans by ensuring a clean and healthy environment.
- c) To reduce air, land, fresh water, and marine pollution.
- d) To promote and ensure the effective delivery of waste services.
- e) To create an enabling environment for employment in the green economy, in waste management, recycling, and recovery.
- f) To establish an environmentally sound infrastructure and system for sustainable waste management.
- g) To promote circular economy practices for green growth.
- h) To mainstream resource efficiency principles in sustainable consumption and production practices.
- i) To inculcate responsible public behavior on waste and environment.

Waste pickers and collectors should be familiar with these local regulations and ensure compliance:



Image Source: KEPRO

2.2.2 General Principles of the Sustainable Waste Management Act, 2022

The General Principles of the Sustainable Waste Management Act of 2022 are:

- (a) Promoting the right to a clean and healthy environment.
- (b) The precautionary principle where the lack of scientific certainty shall not be used to postpone measures to prevent environmental degradation where there are threats of damage to the environment.
- (c) The polluter pays principle in which the cost of cleaning up any element of the environment that has been damaged by pollution, the cost of the beneficial uses of the environment that have been lost because of the pollution, and any other costs associated with or incidental to the pollution shall be paid by the polluter.
- (d) Payment for ecosystem services or payment for ecological services in which payments are made to farmers or landowners who have agreed to take certain actions to manage land or watersheds to provide ecological services (as an incentive to conserve natural resources).
- (e) Zero waste principle in which products and processes are designed and managed to reduce the volume and toxicity of waste and materials, and to conserve and recover all resources, and to prevent the burning or burying of resources, to treat waste as a resource that can be harnessed for wealth creation, employment, and the reduction of pollution.
- (f) Achieving sustainable waste management goals

2.2.3 Functions of county governments according to the SWMA of 2022

County governments in Kenya may have specific by-laws and regulations related to waste management and collection within their authorities. Waste pickers and collectors should be familiar with these local regulations and ensure compliance:

- i. County governments shall be responsible for implementing the devolved function of waste management and establishing the financial and operational conditions for the effective performance of this function.
- ii. County governments shall ensure that county waste management legislation conforms with this Act within one year of its coming into operation.
- iii. County governments shall ensure that the disposal of waste generated within the county is done within the county's boundaries except where there is an agreed framework for inter-county transportation and disposal of waste, No. 31 Functions of county governments.
- iv. County governments should provide central collection centers for materials that can be recycled.
- v. County governments shall establish waste management infrastructure to promote source segregation, collection, reuse, and set up for materials recovery.
- vi. County governments shall maintain data on waste management activities and share the information with the Authority.
- vii. County governments shall mainstream waste management into county planning and budgeting.
- viii. County governments shall develop, manage, and maintain designated disposal sites and landfills.
- ix. County governments shall maintain a register of all waste service providers operating within their boundaries.

2.3 Urban Areas and Cities Act 2012 (Amended 2019)

2.3.1 Rights and duties of residents

- a. **Contribute to the decision-making processes of the city or urban area by submitting written or oral presentations or complaints to a board or town committee through the city or municipal manager or town administrator.**
- b. **Prompt responses to their written or oral communications.**
- c. **Be informed of decisions of a board or town committee, affecting their rights, property, and reasonable expectations.**
- d. **Regular disclosure of the situation of the city or urban area, including its finances.**
- e. **Demand that the proceedings of a board or town committee and its committees or sub committees be:**
 - i. Conducted impartially and without prejudice; and
 - ii. Untainted by personal self-interest.
- f. **The use and enjoyment of public facilities; and**
- g. **Have access to services which the city or urban area provides.**

2.3.2 Participation by residents

A city or urban area shall develop a system of governance that encourages participation by residents in its affairs and shall for that purpose:

- a. **Create appropriate conditions for participation in:**
 - i. **The preparation, implementation, and review of the integrated development plan.**
 - ii. **The establishment, implementation, and review of its performance management system.**
 - iii. **The monitoring and review of its performance, including the outcomes and impact of its performance.**
 - iv. **The preparation of its budget; and**
 - v. **Making strategic decisions relating to delivery of service.**
- b. **Contribute to building the capacity of:**
 - i. **The residents to enable them to participate in the affairs of the city or urban area; and**
 - ii. **Members of the board or town committee and staff to foster community participation.**
- c. **Apply its resources, and allocate funds annually as may be appropriate for the implementation of paragraphs (a) and (b); and**
- d. **Establish appropriate mechanisms, processes, and procedures for:**
 - i. **The receipt, processing and consideration of petitions and complaints lodged by residents.**
 - ii. **Petitions and public comments procedures, when appropriate; No. 13 of 2011 Urban Areas and Cities [Rev. 2016]**
 - iii. **Notification of public meetings and hearings organized by a board or town committee.**
 - iv. **Consultative sessions with locally recognized resident organizations; and**
 - v. **reporting to the residents.**

EPR Regulations

Kenya has been in the process of developing Extended Producer Responsibility (EPR) regulations, however the regulations are still in draft stages and have not been enacted as of October 2023.

NEMA issued a public notice to all producers dated 30th August 2023 for compliance within 2-months.

These regulations will be a useful training and awareness creating tool across Kenya's key stakeholders to address the effects that various products have on the environment, human health, and their packaging. The law is envisioned to operationalize the concept of the polluter pays principle, extend producers responsibility across the life cycle of their products, and promote sustainable waste management.

The proposed regulation indicates the goals of these regulations, which include boosting resource mobilization for waste management, supporting a collaborative approach, and optimizing the life cycle management of products. Additionally, it states that producer responsibility organizations, individual EPR compliance plans, and producers are all subject to the rule. Likewise, it specifies the products that will be covered while considering their detrimental effects on the environment and human health.

Extended producer responsibility obligations must be met by producers (manufacturers, importers, donors) who introduce specific items and their packaging into the Kenyan market to lessen pollution and environmental effects. They are required to set up post-consumer collection programs, participate in compliance programs, register with the Authority, and develop goods that guarantee reuse, recycling, and recovery easy. Additionally, producers oversee managing end-of-life waste and post-consumer products on a financial, administrative, and physical level. They must increase awareness of and support circular economy projects, as well as provide information on quantities, recyclability, and market traceability.

EPR implementation depends on Producer Responsibility Organizations (PROs). Each product category mentioned in the First Schedule must have a PRO, according to the proposed regulation. Each product category management strategy for PROs must be developed, together with an application for registration and an annual operating license. Executing EPR commitments, organizing collection and disposal plans, and creating stakeholder agreements are their responsibilities of the PROs. Upon compliance, the Authority shall issue registration certificates and licenses.

For anyone who feel wronged by the Authority's decisions, the proposed regulation includes an appeals process. It also lists fines and punishments for violations including failing to comply with EPR duties, giving incorrect information, and putting unregistered products on the market. Fines, jail time, or waste management fees could be imposed on offenders. The Authority works with county governments and recommends national objectives while monitoring and auditing PROs.

The list of goods and packaging that must use EPR systems can be found in the First Schedule of the draft regulation. It comprises electrical and electronic equipment, end-of-life vehicles, and a variety of non-packaging commodities like furniture, rubber, textiles, and diapers in addition to packaging for both non-hazardous and hazardous products.

A thorough framework for holding producers responsible for their products' complete life cycle is presented in Kenya's draft EPR regulation. It stresses the significance of resource mobilization, collaborative efforts, and sustainable waste management. Kenya wants to solve environmental issues, encourage recycling and recovery, and build a more sustainable future by putting these policies into effect.



03

Waste Management



Figure 10: Proper Waste Management

The Waste Management Regulations 2006 in Kenya are part of the broader framework established under the Environmental Management and Coordination Act (EMCA) of 1999. These regulations provide specific guidelines and requirements for the management, handling, and disposal of diverse types of waste in Kenya. Some key provisions of the Waste Management Regulations 2006 include:

- **Waste Classification:** The regulations classify waste into various categories, such as hazardous waste, healthcare waste, industrial waste, and general waste. Each category has specific requirements and procedures for collection, transportation, treatment, and disposal.
- **Waste Collection and Transportation:** The regulations outline the procedures and standards for the collection and transportation of waste. They require waste generators to properly package and label waste for safe transport and

specify the use of authorized waste transporters.

- **Waste Treatment and Disposal:** The regulations establish standards and procedures for the treatment and disposal of several types of waste. They encourage waste minimization, recycling, and re-use wherever possible. For hazardous waste, the regulations require proper treatment and disposal methods to prevent harm to human health and the environment.
- **Waste Storage:** The regulations provide guidelines for the storage of waste, including the use of appropriate containers, labeling requirements, and storage period limits. They emphasize the need for secure storage facilities to prevent pollution and protect public health.
- **Licensing and Permits:** The regulations require waste management facilities, such as treatment plants and disposal sites, to obtain licenses from the National Environment Management Authority (NEMA)

The licensing process ensures that waste management facilities meet the necessary standards and regulations.

- **Reporting and Record-Keeping:** Waste generators, transporters, and facilities are required to maintain records of waste generation, collection, treatment, and disposal. They must submit periodic reports to NEMA on their waste management activities to ensure compliance with the regulations.
- **Enforcement and Penalties:** The regulations empower NEMA and other authorized agencies to enforce compliance with waste management regulations. They prescribe penalties for non-compliance, which may include fines, closure of facilities, or legal action. These regulations aim to promote proper waste management practices, reduce environmental pollution, protect public health, and encourage the adoption of sustainable waste management strategies in Kenya.

3.1 Occupational Safety and Health Act (OSHA) 2007:

The Occupational Safety and Health Act (OSHA) 2007 is an important legislation that addresses occupational safety and health issues in the workplace. It was enacted to promote and regulate the safety, health, and welfare of employees, as well as to ensure the prevention of occupational accidents and diseases.

The key features of the OSHA, 2007 include:

- Workplace Safety and Health Standards: The Act sets out general safety and health standards that employers must comply with to provide a safe and healthy working environment for their employees. It covers a wide range of areas such as the prevention of accidents, provision of protective equipment, control of hazardous substances, and ergonomics.

- Occupational Safety and Health Committees: OSHA mandates the establishment of workplace safety and health committees in organizations with more than 20 employees.

These committees are responsible for promoting safety and health, identifying workplace hazards, and advising both employers and employees on safety measures.

- Occupational Safety and Health Inspectors: The Act authorizes the appointment of Occupational Safety and Health Inspectors who have the authority to conduct inspections in workplaces to ensure compliance with safety and health standards. Inspectors have the power to issue improvement notices, prohibition orders, and take legal action against non-compliant employers.

- Occupational Health Services: OSHA emphasizes the importance of occupational health services in the workplace. Employers must provide access to qualified occupational health practitioners and establish programs for occupational health promotion, prevention, and rehabilitation.

- Duties and Responsibilities of Employers and Employees: The Act outlines the duties and

responsibilities of employers, employees, and other stakeholders in ensuring occupational safety and health. Employers are responsible for providing a safe working environment, conducting risk assessments, and providing necessary training and supervision. Employees, however, must comply with safety and health regulations and report any hazards or accidents.

- Offenses and Penalties: OSHA establishes penalties for non-compliance with its provisions. These penalties include fines, imprisonment, or both, depending on the nature and severity of the offense.

The Occupational Safety and Health Act (OSHA) 2007 aims to protect the rights and well-being of employees by establishing comprehensive safety and health regulations in the workplace. It provides a legal framework for promoting occupational safety and health, reducing workplace hazards, and improving the overall working conditions in the country.



Image Source: pexels.com

3.2 Safety Precautions Guide

Some of the **safety precautions Waste collectors** should adhere to include:

a. Personal Protective Equipment (PPE):

- Always wear appropriate PPE, including gloves, masks, safety goggles, and boots, to protect yourself from physical and chemical hazards.
- Ensure that your PPE is in good condition and fits properly to provide maximum protection.

c. Safe Lifting and Carrying Techniques:

- When lifting heavy or bulky waste, use proper lifting techniques to avoid strains and injuries.
- Bend your knees, keep your back straight, and lift with your legs.
- If a waste item is too heavy to handle alone, seek assistance or use mechanical aids like trolleys or carts.

e. Chemical Safety:

- Familiarize yourself with common chemicals and their hazards.
- Observe traffic rules and practice defensive driving techniques.
- Handle chemicals with care and use appropriate containers for storage and transportation.
- Follow safety data sheets (SDS) and guidelines for the proper use, storage, and disposal of chemicals.



Figure 11 People in PPEs (Source: <https://www.the-star.co.ke/>)

b. Hazardous Waste Handling:

- Identify and separate hazardous waste from other types of waste.
- Learn about the specific handling requirements for hazardous materials and follow them.
- Use designated containers and labels for hazardous waste to prevent accidental exposure.

d. Needlestick and Sharps Safety:

- Be cautious when handling discarded needles, syringes, or other sharps.
- Use puncture-resistant gloves and appropriate containers for safe disposal of sharps.
- Never recap or bend needles by hand.

f. Vehicle Safety:

- If you use a vehicle for waste collection, ensure it is well-maintained and in good working condition.
- Observe traffic rules and practice defensive driving techniques.
- Secure waste properly during transportation to prevent spills and accidents.

g. Fire Safety:

- Be aware of potential fire hazards, such as flammable materials or improperly stored chemicals.
- Have fire extinguishers readily available and know how to use them.
- Follow fire safety protocols and report any fire hazards to the appropriate authorities.

h. Hygiene and Sanitation:

- Wash your hands thoroughly with soap and water before and after waste collection activities.
- Use hand sanitizers if soap and water are not readily available.
- Keep a clean work environment and dispose of waste materials appropriately.

i. Emergency Preparedness:

- Be prepared for emergencies and know the location of nearby emergency services.
- Have a communication plan in place to contact emergency services or report incidents promptly.

j. Training and Education:

- Stay updated with safety training programs specific to waste management.
- Attend workshops, seminars, or safety courses to enhance your knowledge and skills.
- Share safety information and experiences with fellow waste pickers and collectors.
- Remember, safety should always be a top priority in waste management activities. By following these safety precautions, you can protect yourself and others while effectively managing waste in a responsible and sustainable manner.



Image Source: KEPRO

3.3 Compliance with Health and Sanitation Standards:

Compliance with Health and Sanitation Standards for waste management according to OSHA 2007 involves following regulations to handle and dispose of waste in a safe and environmentally responsible manner. This includes:

- **Proper waste segregation, storage, labelling, and transportation.**

- **Establish procedures for waste handling, employee training, and emergency response to prevent health hazards and environmental contamination.** Adhering to these standards ensures the proper management of waste, reduces potential risks, and contributes to a healthier workplace and ecosystem.

3.4 Licensing and Permitting:

Depending on the specific activities and scale of waste collection and recycling, waste pickers and collectors may need to obtain licenses or permits from relevant authorities NEMA and the County Government either as an individual or a Community Based Organizations (CBOs) for easy access of these licenses.

Collectors can individually or as a group (CBO) contact NEMA or the local county government offices they are affiliated with to inquire about the necessary licenses and permits for waste management operations.



Image Source: pexels.com



04

Waste Categorization

4.1 Waste Categorization Guide

4.1.1 Sources of wastes

In Kenya, there are many different waste streams that can be divided into domestic, municipal, industrial, and hazardous wastes. Other new waste streams, such as e-waste, and discarded tires, are a result of increasing industrialisation and ICT development. Between homes, businesses, and industries, overall waste content varies significantly.

The classification and characterization of solid waste is critical to plan for the long term and create efficient and cost-effective solid waste management systems. Such systems include the selection and operation of waste treatment and handling equipment, as well as the sorts of disposal facilities that will allow for energy generation and resource recovery.

Solid wastes are organic and inorganic waste products that contain both heterogeneous urban and rural wastes plus a more homogeneous accumulation. Waste is classified according to its generation source and type. The sources and types of solid waste, together with their composition and rate of generation/disposal, are critical for the design and operation of the functional aspects used in waste management systems. The source-based classification, which includes domestic/residential, environment, Industry, and commercial wastes.

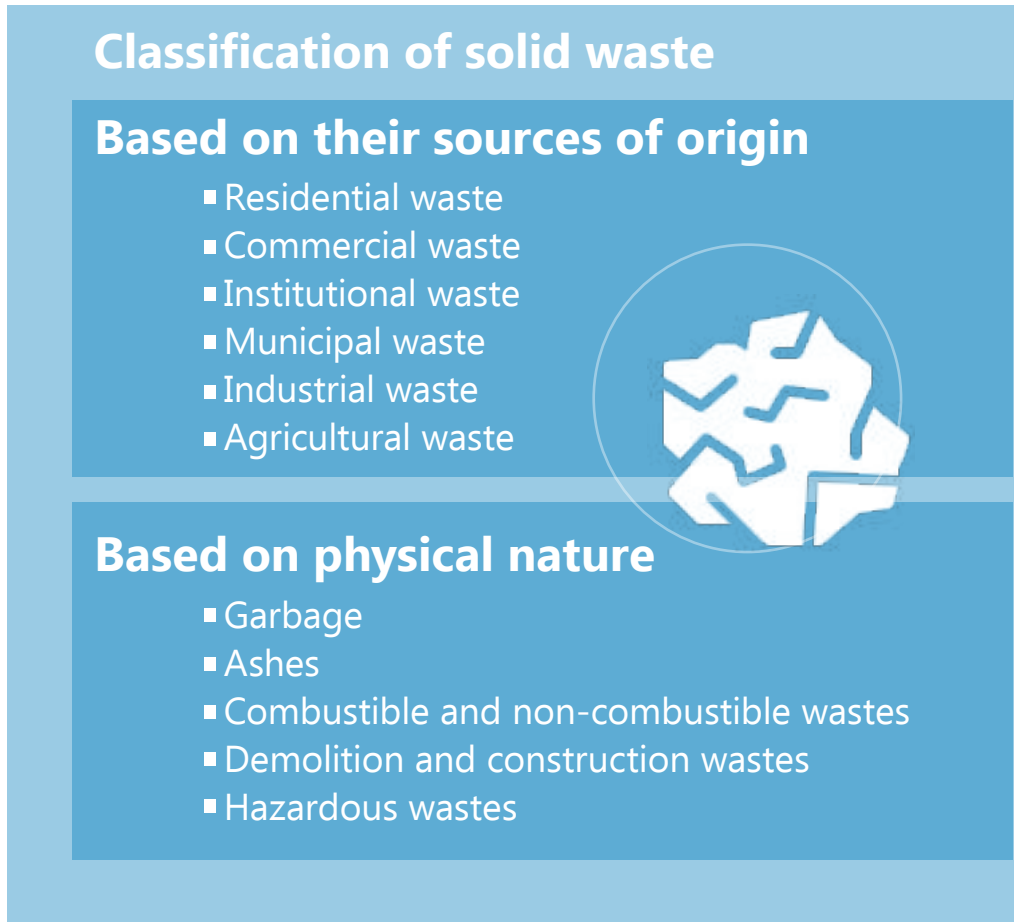


Figure 12: Sources of waste

Domestic waste

Refuse, garbage, and trash are other terms for household waste. Food and kitchen garbage, green wastepaper, and non-biodegradable items such as plastics, glass bottles, cans, metals, and packaging materials make up most of this waste. The Income, consumption habits, and recycling options all influence how household waste is composed. Domestic garbage is not effectively managed on a national level and is disposed of at the landfills with little sorting or classification.

Commercial wastes

Waste from stores, restaurants, markets, hotels, motels, shops, and supermarkets, as well as offices, hotels, shops, lodges, restaurants, business centres, warehouses, markets, slaughterhouses, and other commercial establishments. The waste was physically segregated and packed in polythene bags according to its category or type. The weight of each of the sorted waste can be determined, and the average calculated. These wastes have the potential for recycling if they are separated at the source, as is done in affluent countries.

Industrial Waste

Any substance that is rendered unusable during a production process is included in industrial waste, which is the waste generated by industrial activities. Both hazardous and non-hazardous trash are produced by industries. They include chemical solvents, products of paper, paints, sandpaper, municipal solid wastes, industrial by products and radio-active wastes. Most hazardous industrial waste is

not currently treated before being reused, recycled, or disposed. This harms the environment and puts the handlers' health at risk. At the municipal disposal sites, dangerous industrial waste is unlawfully disposed.

Demolition and Construction Waste

This waste is produced during new building, remodelling, or demolition projects.

Debris, steel, wood, iron sheets, tiles, and ceramics are among the materials that make up construction trash. Despite not being considered hazardous waste, building and demolition debris is a mixed waste source that needs to be separated into its component elements to be recycled.

Currently, these wastes are either disposed of in landfills or used as road backfill.

4.2 Waste categorization

Proper waste categorization is crucial for effective waste management and recycling. Waste pickers and waste collectors should be familiar with waste categorization methods to ensure the correct handling and disposal of diverse types of waste. From numerous studies and research done, we have several categorization and broad classifications of waste as defined by the UNEP, UN-Nations, UNEP, and other international studies.

In this handbook we will focus on the broad definitions and categorizations of waste as indicated on the Kenyan Sustainable Waste Management Act 2022, Waste is broadly categorized as:

- **Hazardous**
- **Non-hazardous**

More so, the non-hazardous wastes should be segregated further by all public and private sector entities into:



1. Organic (wet waste)

Figure 13: Types of organic waste

2) Non-organic fractions (dry waste)

Image Source: pexels.com



Figure 14: Types of dry/ recyclable waste

4.2.1 Definition of Waste Categories:

- **Organic Waste:** This includes food waste, yard waste, and other biodegradable materials.
- **Inorganic or Recyclable Waste:** This category includes cardboard, plastics, paper, glass, metals, and certain types of packaging materials.

- **Hazardous Waste:** This includes chemicals, batteries, electronic waste (e-waste), fluorescent bulbs, medical waste and other materials containing toxic substances.

- **Inert or Construction and Demolition Waste:** This includes materials such as

concrete, bricks, wood, metals, and rubble generated from construction and demolition activities.

- **Special Waste:** This category encompasses waste that requires specific handling and disposal, such as asbestos, radioactive waste, and contaminated soil.

4.3 Waste Composition & Management

This phase outlines how to evaluate average household waste composition and per capita household solid waste generation. If there are no current statistics on the generation and composition

of Municipal Solid Waste (MSW), use this step. One will have a better idea of the percentages of recyclables in the household waste in your city through waste characterisation, that will be carried out in conjunction

with waste sampling from homeowners. This knowledge is crucial, particularly for stepping up resource recovery activities and starting the transition to a circular economy in cities.

Day 0

- Distribute bags for day 1, 2, 3 and 4 to households. Ask the number of people staying at households. Provide the number of people staying at household.

- Give houses the bags for days 1, 2, 3, and 4. Find out how many individuals

Day 1

- Survey non-household garbage during this day. Fill the day 1 bag.

Day 2

- Fill the day 2 bag, then keep the day 1 bag. Are residing in each home. Indicate how many people live in the household.

Day 3

- Fill the day three bag. Organize the day 1 and day 2 bag.

Day 4

- Assemble the garbage bags from days 1, 2, and 3. Give out bare bags for days 5 and 6. Do not weigh or include the waste bag from Day 1 in the composition survey and throw it away. Weigh and analyze the makeup of waste bags from days two and three. Add information to the reporting sheet. Give the waste from days 1, 2, and 3. Fill the day four bags.

Day 5

- Use the day for non-household waste survey. Fill the bag of day 5. Store the bag of day.

Day 6

- Gather the garbage bags from days 4 and 5. For days 7 and 8, distribute empty bags. Weigh the garbage bags from days four and five and analyze the waste content. Fill out the reporting form with data. the day 4 and day 5 waste samples. Complete the day six bag

Day 7

- Use the day to collect non-household garbage. Fill the day 7 bag and put it away

Day 8

- Fill the bag of day 8 and store the bags from days 6 and 7 of the non-household trash survey.

Day 9

- Gather day 6, day 7, and day 8's bags. Weigh the garbage in the day 6, day 7, and day 8 bags, then analyze its composition. sample garbage from days 6, 7, and 8.

Note:

If the climate does not allow households to store the waste for three days, arrange more frequent waste collection to obtain the 8 days waste samples. Make sure to discard the 1st sample. Important: Remind households not to sell or take out recyclables so that the genuine total waste generation in the household can be properly captured.

4.4 Waste Sorting

Sorting is a crucial stage in the responsible management and disposal of waste. Typically, waste is classified based on its composition, ability to be recycled, or any other specific requirements. Paper, cardboard, glass, and plastic are frequently sorted materials.

This makes sure recyclable materials are appropriately processed to lessen their impact on the environment. It also helps to distinguish between hazardous and non-hazardous materials so that they can be securely disposed of. Depending on the kind and quantity of material being

handled, the waste sorting procedure may change. For instance, before paper and cardboard can be recycled, they often need to be shredded, while glass needs to be broken down into smaller pieces to fit into the recycling bins or containers that local governments supply for collection.

4.4.1 Waste sorting procedures

Waste pickers should be familiar with the legal regulations and first understand the waste management policies and guidelines.

Some of the procedures to be considered while sorting several types of waste may include:

Categorizing waste:

Typically, waste is sorted into various categories such as recyclables, organic waste, hazardous waste, and general waste. The specific categories may vary depending on the location, but commonly recycled materials include paper, cardboard, plastic, glass, and metal.

Recyclables:

Separate recyclable materials from other waste. Rinse containers like plastic bottles, cans, and glass jars to remove any residue. Remove any non-recyclable components such as plastic lids or wrappers, as these may need to be disposed of separately.

Organic waste:

Food scraps, yard trimmings, and other organic waste



Figure 15: Common types of household waste

should be collected separately. Composting is an environmentally friendly way to manage organic waste and can be done in a home composting system or through municipal composting programs.

Hazardous waste:

Hazardous materials like batteries, electronics, chemicals, paints, and certain types of light bulbs should be handled as hazardous waste. Waste pickers should contact the local waste management facility or recycling centre for proper disposal methods for these items, as they require special handling due to their potentially harmful nature.

General waste:

Anything that cannot be

recycled, composted, or classified as hazardous waste can be considered general waste. It should be bagged and disposed of according to the local waste management guidelines, which may include using designated bins or bags for general waste.

Waste Storage:

Different storage facility requirements will apply based on the type of trash. It is crucial to store waste in accordance with its properties because it might take either a solid or liquid form. Hazardous waste needs to be kept in a reliable, leak-proof container that is kept shut when no waste is being put in or taken out. Different waste types could call for various sorts of storage containers.

Waste Labelling:

Non-hazardous waste does not require any labelling. On the other hand, labelling for hazardous waste is frequently mandated by law, and in most nations, an organization may require a license just to produce specific types of hazardous waste. Transport and dispose waste properly.

Train personnel

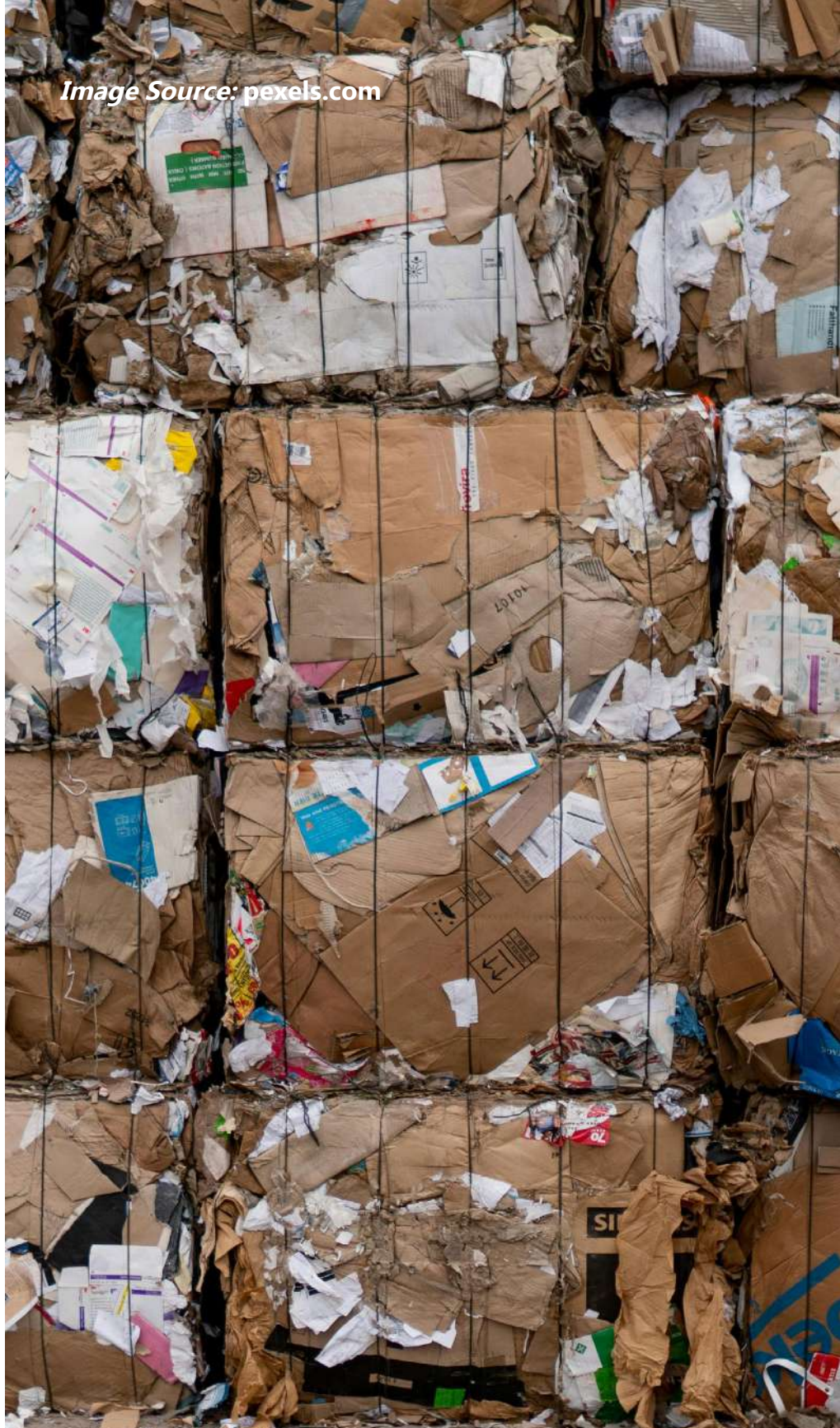
To ensure compliance with waste regulations, it is essential to train all employees who handle, store, or manage hazardous waste in any other way. Each waste's dangers, relevant safety measures, and all requirements for compliance must be understood by staff members. It is essential to offer each employee who will work in any aspect of the waste management system the proper training and working conditions such as:

i. Proper waste categorization is crucial for effective waste management and recycling. Waste pickers and waste collectors should be familiar with waste categorization methods to ensure the correct handling and disposal of diverse types of waste.

ii. Waste Segregation:

- Encourage households, businesses, and institutions to segregate their waste at the source.
- Provide separate bins or containers for different waste categories to facilitate proper waste segregation.
- Train community members on the importance of waste segregation and its positive impact on recycling and waste management.

Image Source: pexels.com



Train community members on the importance of waste segregation and its positive impact on recycling and waste management.

iii. Sorting Techniques:

- Implement sorting techniques to separate diverse types of waste during collection or at recycling centers.
- Use manual sorting methods or invest in sorting equipment, such as conveyor belts or trommel screens, to improve efficiency.
- Train waste pickers and collectors on proper sorting techniques to minimize cross-contamination and maximize recyclable recovery.

iv. Recyclable Waste Identification:

- Familiarize yourself with the diverse types of recyclable materials and their identification methods.
- Learn about the characteristics, markings, and symbols used to identify recyclable items, such as plastic resin codes or recycling logos.

v. Hazardous Waste Identification:

- Educate yourself about the characteristics and properties of hazardous waste.
- Learn to recognize warning signs, labels, and specific markings used to identify hazardous materials.
- Understand the risks associated with diverse types of hazardous waste and the precautions to be taken during handling and disposal.

vi. Collaborate with Recycling Facilities:

- Establish partnerships with local recycling facilities that accept specific types of recyclable waste.
- Understand their requirements for waste acceptance, sorting, and packaging.
- Coordinate with these facilities to ensure proper disposal and recycling of collected materials.

vii. Comply with Regulatory Guidelines:

- Familiarize yourself with waste management regulations and guidelines, including those related to waste categorization, handling, and disposal.
- Stay updated with any changes or updates in waste management regulations and ensure compliance.

viii. Continuous Education and Training:

- Stay informed about advancements in waste categorization techniques, recycling technologies, and waste management practices.
- Participate in training programs, workshops, and seminars to enhance your knowledge and skills in waste categorization.
- Understanding waste categorization is essential for waste pickers and collectors to ensure proper handling, recycling, and disposal of diverse types of waste. By effectively categorizing waste, you contribute to a more efficient waste management system and promote sustainable practices for a cleaner and healthier environment.



Image Source: pexels.com

Implement sorting techniques to separate diverse types of waste during collection or at recycling centers.

4.4.2 Sorting and Segregation of Wastes Guide

According to the Sustainable Waste Management Act of 2022, it is the duty of each person who generates wastes in Kenya to:

a) Segregate the waste at source following the provisions of this Act.

b) Dispose the waste to only licensed waste service providers or at collection points designated in accordance with the provisions of this Act.

The act also stipulates that a person who does not manage

waste in accordance with subsection (1) commits an offence and shall, on conviction, be liable to a fine not exceeding twenty thousand shillings or imprisonment for a term not exceeding six months or both.

4.4.3 Duties of waste service providers

According to the Sustainable Waste Management Act of 2022:

1) A waste service provider shall handle segregated waste in accordance with this Act.

2) A waste service provider shall deliver segregated waste

collected to facilities licensed and designated in accordance with this Act.

3) A waste service provider who fails to handle or manage waste in accordance with this Act commits an offence and shall,

on conviction, be liable to a fine not exceeding fifty thousand shilling or imprisonment for a term of six months or both.

4.4.4 Tips to conduct proper segregation of wastes

Proper sorting and segregation of waste is essential for efficient waste management and recycling. Waste collectors should note the below tips to conduct proper segregation of wastes:

a. Self-education

- Understand the various categories of waste, including organic waste, recyclable materials, hazardous waste, and non-recyclable waste.
- Learn about the characteristics and proper handling of each waste category.

b. Source Segregation:

- Encourage residents, businesses, and institutions to segregate waste at the source.
- Provide clear and easily identifiable containers or bins for different waste types.
- Educate the community about the benefits of source segregation and the importance of responsible waste disposal.

c. Recyclable Materials:

- Identify and separate recyclable materials, such as plastics, paper, glass, metals, and electronic waste (e-waste).
- Clean and dry recyclable materials before sorting to avoid contamination.

- Ensure that recyclables are not mixed with other waste categories during collection.

Identify and separate recyclable materials, such as plastics, paper, glass, metals, and electronic waste (e-waste).



Image Source: pexels.com

d. Organic Waste:

- Separate organic waste, including food waste, yard waste, and agricultural waste.
- Encourage composting initiatives for organic waste to promote soil enrichment and reduce landfill waste.
- Inform residents and businesses about composting methods and the importance of separating organic waste from other waste streams.

e. Hazardous Waste:

- Identify and separate hazardous waste, including batteries, chemicals, paints, fluorescent bulbs, and medical waste.
- Provide appropriate storage containers for hazardous waste, ensuring they are clearly labeled and securely sealed.
- Educate the community about the dangers of improper disposal of hazardous waste and the importance of responsible handling.

f. Non-Recyclable Waste:

- Collect non-recyclable waste separately, including materials that cannot be recycled or composted.
- Ensure that non-recyclable waste is properly bagged or contained to prevent littering and the spread of waste during collection.

g. Sorting Techniques:

- Develop a systematic approach for sorting waste efficiently.
- Use different-colored bins or containers to differentiate waste categories visually.
- Train waste collection teams on effective sorting techniques to minimize errors and ensure accurate segregation.

h. Quality Control:

- Conduct regular quality checks to ensure proper sorting and segregation.
- Inspect waste collected to identify any mixed or contaminated waste items and provide feedback to the waste collection team.
- Implement corrective measures and provide ongoing training to maintain high sorting standards.



i. Partnerships and Recycling Facilities:

- Establish partnerships with recycling facilities and organizations that accept specific types of recyclable waste.
- Collaborate with local recycling initiatives to ensure collected recyclables are effectively processed.
- Stay updated with recycling guidelines and inform residents about recycling centers and drop-off points.

j. Community Awareness:

- Conduct awareness campaigns on waste segregation, emphasizing the importance of responsible waste disposal and recycling.
 - Distribute educational materials, organize workshops, and engage with schools, community groups, and local authorities.
 - Encourage community participation and provide incentives to promote waste segregation practices.
- These guidelines can help waste pickers and collectors contribute to efficient waste management, recycling, and a cleaner environment. Remember, your efforts play a significant role in conserving resources, reducing pollution, and promoting sustainable development.

Inspect waste collected to identify any mixed or contaminated waste items and provide feedback to the waste collection team.

4.5 Collection and Disposal Techniques

Waste collection is part of the process of waste management. It is the transfer of solid waste from the point of use and disposal to the point of treatment or landfill. Waste collection also includes the on-street side collection of recyclable materials that technically are not waste, as part of a municipal landfill diversion program.

Waste collectors are expected to transport the collected waste to the material recovery facility (MRF) or to the closest aggregation point. In either case, the collector will receive a set payment based on the amount of waste recovered. For example, in MRFs, a collector is likely to receive a higher value for the waste they collect, but volume, with a minimum of 1 tonne, is crucial for a higher value. On the other side, waste collectors can also receive payment for the waste they have gathered from the aggregation points. The minimum weight required is 10kg, and the clerk at the aggregation stations will weigh and pay it.

Additionally, using material recovery facilities enables recyclers to acquire volume from current informal waste pickers for formal jobs that create value and the development of standardized recovery, segregation, sorting, and value creation chains like recycling, reuse, repair, and waste to energy. The highest level of recovery from segregated waste is also possible, as well as the highest level of quality since the waste is not contaminated. Jobs are created when waste is separated at the point of generation, and as the volume of raw materials used by recyclers increases, they can increase the price and quality of the waste they are recycling.

As a waste collector, it is important to keep in mind that hazardous waste must be disposed of properly at a licensed facility, dry waste must be disposed of at an MRF or an Aggregation Point, and wet waste must be disposed of at a composting facility.

Some collection techniques that can be adopted by waste pickers to optimize their operations and ensure effective waste management include:

a. Route Planning:

- Plan collection routes in advance to minimize travel time and fuel consumption.
- Consider the proximity of waste collection points, traffic patterns, and the volume of waste generated in different areas.
- Optimize routes to cover the maximum number of collection points in the shortest possible time.

b. Scheduled Collection:

- Establish a regular collection schedule to ensure timely waste pickup.
- Communicate the collection schedule to residents, businesses, and institutions to promote compliance and facilitate waste segregation at the source.
- Adhere to the schedule consistently to maintain efficiency and reliability.

c. Segregated Collection:

- Emphasize the importance of waste segregation at the source to residents and businesses.
- Collect different waste streams separately to facilitate recycling and proper disposal.
- Use separate bins or containers for recyclable materials, organic waste, hazardous waste, and non-recyclable waste.



Image Source: pexels.com

Waste collection is part of the process of waste management. It is the transfer of solid waste from the point of use and disposal to the point of treatment or landfill.

Image Source: pexels.com



d. Efficient Loading and Unloading:

- Train collection teams on proper lifting techniques to minimize injuries and strains.
- Use trolleys, carts, or other mechanical aids to help load and unload heavy or bulky waste items.
- Ensure that waste collection vehicles are equipped with appropriate lifting mechanisms for efficient waste handling.

e. Communication and Education:

- Communicate with residents and businesses to provide information and updates on collection procedures, schedules, and any changes.
- Conduct awareness campaigns to educate the community about waste management practices, including waste reduction, recycling, and proper disposal methods.
- Encourage residents to report any issues or concerns related to waste collection promptly.

f. Technology Adoption:

- Explore the use of technology for route optimization, real-time tracking of collection activities, and data management.
- Utilize mobile applications or software to streamline communication, record collection data, and monitor collection progress.
- Implement barcode or RFID systems to track waste containers or bins and ensure accurate tracking and reporting.

g. Community Participation:

- Encourage community participation in waste management efforts.
- Organize cleanup drives and recycling events in collaboration with local community groups, schools, and businesses.
- Foster a sense of ownership and responsibility among residents by involving them in waste collection and recycling initiatives.

h. Collection Vehicle Maintenance:

- Regularly maintain waste collection vehicles to ensure optimal performance and minimize breakdowns.
- Conduct routine inspections, servicing, and repairs to keep the vehicles in good working condition.
- Monitor fuel consumption and implement fuel-efficient practices, such as avoiding unnecessary idling and maintaining proper tire pressure.

i. Data Collection and Analysis:

- Collect and analyze data on waste generation patterns, collection efficiency, and recycling rates.
- Use the data to identify areas for improvement, adjust collection schedules, and enhance waste management strategies.
- Monitor and report progress towards waste management goals, such as increased recycling rates or waste diversion targets.

j. Collaboration with Stakeholders:

- Establish partnerships with local authorities, recycling facilities, NGOs, and other waste management stakeholders.
- Collaborate on waste management projects, share resources, and exchange best practices.
- Participate in industry associations or networks to stay informed about new developments and initiatives in waste management.

Waste pickers and collectors can enhance their efficiency, promote waste segregation, and contribute to sustainable waste management practices by adopting the above collection techniques.



05

Recycling and Reusing Guide

Introduction

Recycling and reusing waste materials are essential components of sustainable waste management. Waste pickers and collectors can play a significant role in promoting recycling and reusing practices.

5.1 To improve recycling and reusing as a waste collector, you should:

a. Educate Yourself:

- Stay informed about the diverse types of recyclable materials and their recycling processes.
- Learn about local recycling facilities, their requirements, and the materials they accept.
- Familiarize yourself with innovative recycling and upcycling techniques.

b. Segregate Recyclable Materials:

- Separate recyclable materials, such as plastics, paper, glass, metals, and electronic waste (e-waste), from other waste streams during collection.
- Ensure proper sorting and segregation to maintain the quality of recyclables.

c. Establish Recycling Partnerships:

- Develop partnerships with local recycling facilities, organizations, or cooperatives that accept specific types of recyclable waste.
- Coordinate with these entities to arrange for the proper disposal and processing of collected recyclable materials.

d. Promote Reuse:

- Encourage residents, businesses, and institutions to consider reusing items before discarding them.
- Promote the concept of donating, sharing, or repairing usable items instead of throwing them away.
- Educate the community about the environmental and economic benefits of reusing.

e. Community Awareness:

- Conduct awareness campaigns to educate the public about the importance of recycling and reusing.
- Share information about local recycling centers, drop-off points, and collection events.
- Emphasize the positive impact of recycling and reusing on the environment and local economy.

f. Innovate with Recyclable Materials:

- Explore opportunities to create innovative products or crafts from recycled materials.
- Encourage creativity and entrepreneurship by supporting initiatives that transform waste into marketable products.
- Promote the use of recycled materials in construction, art, and other sectors.

g. Implement Recycling Collection Points:

- Collaborate with local authorities or businesses to set up recycling collection points in strategic locations.
- Ensure proper signage and instructions for residents to deposit recyclable materials.
- Regularly collect and transport the collected recyclables to the appropriate recycling facilities.

Image Source: pexels.com



h. Encourage Waste Reduction:

- Promote waste reduction practices, such as encouraging residents and businesses to minimize packaging, practice composting, or adopt zero waste lifestyles.
- Advocate for policies that incentivize waste reduction at the source.

i. Continuous Improvement:

- Stay updated with new recycling technologies, techniques, and best practices
- Participate in training programs, workshops, and seminars related to recycling and waste management.

- Share knowledge and experiences with other waste pickers, collectors, and recycling stakeholders.

j. Collaboration and Networking:

- Collaborate with community-based organizations, NGOs, and other waste management stakeholders to exchange ideas, resources, and best practices.
- Join or establish networks or associations that focus on waste management and recycling initiatives.
- Engage with policymakers and local authorities to advocate for improved waste management practices.

These activities if adhered to properly, both individual and grouped waste collectors can contribute to a circular economy, reduce environmental impact, and create economic opportunities. Waste collectors should keep in mind that their efforts are vital in promoting sustainable waste management and building a greener future.

Involving the public in handling waste gives people a sense of agency and promotes environmental ownership.



5.2 Community Involvement and Education

Engaging with the community is important for waste pickers and collectors to create awareness, foster cooperation, and build a sustainable waste management system. Two interconnected strategies, community involvement and education, are used to include and enlighten people about waste management and its effects on their health and well-being.

Participating in the design, implementation, and assessment of waste management operations is referred to as community participation. Raising awareness, disseminating knowledge, and fostering attitudes and abilities connected to waste management are all part of community education. Both strategies have the potential to help community members feel a feeling of empowerment, accountability, and ownership.

5.3 Importance of community engagement in Waste Management

Community engagement plays a crucial role in waste management for several reasons:

1. Education and awareness: Community involvement offers a chance to inform and increase community members' understanding of the significance of effective waste management methods. Community members can make decisions that support sustainable waste management if trash reduction, recycling, and responsible disposal are promoted.

2. Behavioural Change: Successful community engagement can bring about a change in behavior. Individuals are more likely to adopt ecologically friendly practices in their daily life by actively integrating community members in waste management activities, such as recycling programs or composting seminars. The community's garbage generation and recycling rates may be significantly impacted by this behavioral shift.

3. Public Participation and Ownership: Involving the public in handling waste gives people a sense of agency and promotes environmental ownership. Community people that actively participate in waste management decision-making processes have a stronger sense of responsibility for the results and are more driven to support successful waste reduction and recycling initiatives.

4. Collaborative Solutions: Community engagement promotes cooperation amongst a variety of stakeholders, including local government officials, waste management businesses, and nonprofit organizations. Together, these parties can create creative answers that deal with community needs and problems. This cooperative strategy guarantees that waste management plans are customized to the distinctive qualities of the community, improving efficiency and effectiveness.

5. Social and Economic Benefits: Waste management can have positive social and economic effects on the community. Initiatives for recycling and waste reduction can boost local economies by developing recycling industries, increase opportunities for employment locally, and improve community life in general. Additionally, community-led trash management initiatives can promote a sense of pride and unity among the community.

Effective waste management depends on community involvement. It makes it possible for education, change in habits, and public involvement, which improves trash reduction, recycling rates, and environmental sustainability in general. Waste management techniques can be adapted to local demands and produce social, economic, and environmental advantages for the community by involving and empowering community members.

5.4 Recommendations and Tips for Community participation and Involvement by waste collectors

a. Understand the Community:

- Get to know the demographics, cultural practices, and waste management challenges specific to the community you serve.
- Identify key stakeholders, such as community leaders, residents' associations, local businesses, schools, and NGOs working in the area.

b. Education and Awareness:

- Conduct community awareness campaigns to educate residents about proper waste management practices, including waste segregation, recycling, and the importance of reducing waste.
- Organize workshops, seminars, and interactive sessions to explain the benefits and the role of waste pickers and collectors in the process of responsible waste disposal

c. Language and Communication:

- Communicate with the community in local languages and ensure that information is easily understandable.
- Use various communication channels, including community meetings, posters, flyers, social media, and local radio stations, to reach a wider audience.

d. Door-to-Door Engagement:

- Visit households and businesses to provide information about waste management practices.
- Explain the importance of waste segregation, encourage participation, and answer any questions or concerns raised by community members.

e. Collaboration with Local Leaders:

- Engage with community leaders, including chiefs, elders, and religious leaders, to gain their support and endorsement.
- Seek their guidance in mobilizing the community and establishing effective waste management practices.

f. Partnerships with Schools and Educational Institutions:

- Collaborate with schools and educational institutions to integrate waste management education into their curriculum.



- Organize recycling competitions, environmental awareness campaigns, and other activities to engage students and their families.





Effective waste management depends on community involvement.

Image Source: pexels.com

g. Community Clean-up Drives:

- Organize community clean-up events in collaboration with residents, businesses, and organizations.
- Highlight the impact of waste pollution on the community and environment and emphasize the need for collective action.

h. Incentives and Rewards:

- Introduce incentive programs to encourage community participation in waste management initiatives.
- Provide rewards or recognition for households or businesses that actively practice waste segregation and proper disposal.

i. Establish Community Recycling Centers:

- Work with local authorities and community members to set up community recycling centers or drop-off points.
- Provide training and guidance on proper waste segregation at these centers.

j. Continuous Engagement:

- Maintain regular communication with the community to address concerns, provide updates, and share success stories.
- Seek feedback from community members on waste management services and incorporate their suggestions for improvement.

k. Capacity Building:

- Organize training sessions or workshops to enhance the skills of waste pickers and collectors, empowering them to perform their tasks more effectively.
- Share knowledge on waste management best practices, occupational health and safety, and business management skills.

l. Regulatory Compliance:

- Regularly review waste management regulations and guidelines to ensure compliance.

- Stay updated with any changes or updates in laws related to waste management and adapt your practices accordingly.

Community engagement is an ongoing process and for this reason waste collectors should regularly assess the impact of their efforts in training and involving the community, adapt the strategies and engage the members of the community in decision making processes to ensure their active participation and ownership of waste management initiatives.

Building strong relationships with the community means, waste pickers and collectors can foster a sense of responsibility, promote sustainable practices, and contribute to a cleaner and healthier environment.

Image Source: KEPRO





06

Waste as a Business Case (Green Enterprises)



6.1 Recognition of Waste Pickers

The Sustainable Waste Management Act 2022 recognizes the fundamental role of waste collectors and other waste value chain actors as Kenya seeks to transit towards the realization of a circular economy. Nevertheless, research has shown that the waste collection ecosystem in the country is largely informal hence the need for a shift towards more formal and structured engagements with this critical constituency. Granted, the easiest approach for waste collectors to realize recognition is to form organized groups that can petition for formal registration as provided for under Kenya's Societies Act, Cap 108.

Internationally, the role of cooperatives and other Social and Solidarity Economy Organizations (SSEOs) are highlighted in the ILO Transition from the Informal to the Formal Economy Recommendation, 2015 (No. 204). The points of consensus adopted by the Global Dialogue Forum on

Decent Work in the Management of E-waste also acknowledged the fundamental role of cooperatives and other SSEOs in promoting rights of workers in the informal e-waste economy and encourage the development and implementation of policies and measures to promote their role. According to the International Co-operative Alliance (ICA) and the International Labour Organization (ILO) a corporative is "an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise".

Advantages of Waste Collectors Cooperative Groups

1. Strengthening the collective voice and representation of waste pickers in policy-making processes. This will also be essential in formalizing the role of waste pickers as public service providers

2. Employment Creation Cooperatives can help generate employment or consolidate and sustain existing ones. Through schemes such as savings and credit cooperatives members can borrow money to start businesses thus creating self-employment for them.

3. Facilitating access to services and social protection. Almost invariably informal economy workers have no legal status. It is thus difficult for them, as enterprises to access loans from banks, enter legal business contracts or own immovable assets as an enterprise.

4. Providing opportunities for capacity building and skills training

5. Raising public awareness on the role of waste pickers

Registration of a Cooperative Society in Kenya

1 Organize yourselves as a group with the intent of forming a cooperative

Coordinate people to form up a cooperative society. The start-up cooperative members must be at least enough to form a Society Board in a full cooperative.

Qualification for membership to a cooperative society are as follows;

- a) One must have attained the age of eighteen years;
- b) The members employment, occupation or profession falls within the category or description of those for which the co-operative society is formed;
- c) The member must be a resident within, or occupies land within, the society's area of operation as described in the relevant by-law.

Essentials for registration of a co-operative society are as follows:-

- a) In the case of registration of a primary society, it should consist of at least ten persons all of whom shall be qualified for membership of the co-operative society.
 - b) In the case of a co-operative union, it must have at least two registered societies as its members.
-

2 Write a letter of intent

Thereafter, you should write a letter to the Province Cooperative Officer (PCO) through the District Cooperative Officer (DCO) requesting to be registered as a pre-cooperative society indicating their intention to do so.

The letter should state who the cooperative is made of and what they plan to accomplish.

The following information should also be sent to the cooperative office

- (i) The organization's contact people (2)
- (ii) A list of members – not less than 15 with their ID numbers and signatures
- (iii) The amount that is to be contributed monthly

The DCO will meet the group and verify whether the group is viable to register or not.

3 Meeting with cooperatives officer

After receiving the letter of intent, the District Cooperative Officer (DCO) will meet the group to verify whether the group is viable to register or not.

If the DCO finds the group viable for registration, he will give the group an approval for registration.

4 Hold meeting to form a formation board and elect a chairman and secretary

The three most important slots to be filled are the Chairman and Secretary.

It's important to have these positions occupied for accountability and organization purposes of the group.

Registration of a Cooperative Society in Kenya

5 Drafting of the cooperative's constitution, objects and by-laws by the Formation Board.

- After election, the Formation Board the board should decide on the type of society to be formed, prepare by-laws for the society and assess founder members level of business.
- A constitution is the cooperative's guide which should be drafted. Once this has been drafted and approved, every member should get a copy which they sign and commit to the terms and conditions. The constitution identifies the cooperative's mission, goals, and objectives.
- The formation board should look in to the future and estimate number of future members and levels of business to be done by the society in future;
- A feasibility study of the cooperative should be carried out and feasibility report prepared.
- Record and details of founder members, their share capital and contributions should be taken. Also record details of prospective members, their probable share capital and contributions should be taken
- At commencement, the formation board should begin to keep accounts to allow periodic assessment of the group's activities; and
- Must appoint a delegate in charge of representing the group in all civil matters

6 Make application of registration with the Ministry of Industry, Trade and Cooperatives

- Visit the Provincials/District cooperatives offices to make the application for registration.
- The application may be handled by the District Cooperative Officer at District level or the Assistant Registrar at Regional level.
- The application for registration forms are provided at these offices

The following document should be attached and submitted together with the registration application.

- (i) Name of the Proposed Society
- (ii) Proposed by-laws of the society
- (iii) A Draft Constitution
- (iv) Names of a minimum of Ten Proposed Members (Including Copies of Their ID Cards. KRA Pins. Passport Sized Photos. Telephone Numbers. Physical Address. Occupation and Age)
- (v) Names of A Minimum Of Three Officials – Treasurer, Secretary General and Chairperson
- (vi) The Postal and Physical Address (Plot Number Nearest Road/Street And Location) Of The Society
- (vii) Minutes of the meeting seeking registration and showing elected officials
- (viii) Copies of National Identity Cards of all group members
- (iv) Application fee proof of payment receipt. A processing fee of KES 500 is charged for the registration

Registration of a Cooperative Society in Kenya

7 Obtain letter of recognition as a pre-cooperative society

- After assessment and satisfaction of the application, the registrar will issue a letter of recognition which will allow the group to operate as a pre-cooperative society for three (3) years.
- During the given three (3) years members of the formed pre-cooperative society must be working hard to fulfil the conditions required to become a full cooperative society.

8 Obtaining Registration Certificate and a Certified Copy of by- laws

- When all requirements are fulfilled at the end of the three years, the society shall then be registered as a full cooperative society however, if at the end of the three (3) years the pre-cooperative society has not fulfilled the conditions, the letter of recognition will be cancelled.
- Upon full registration, the registration then issues a Registration Certificate and a Certified Copy of by- laws.

Documentation Required for Registration of a Cooperative Society in Kenya

1. Name of the Proposed Society
2. Proposed by-laws of the society and a draft Constitution
3. Names of a minimum of 10 proposed Members (Including Copies of Their ID Cards. KRA Pins. Passport Sized Photos. Telephone Numbers. Physical Address. Occupation and Age)
4. Names of A Minimum of Three Officials – Treasurer, Secretary General and Chairperson
5. The Postal and Physical Address (Plot Number Nearest Road/Street And Location) Of The Society
6. Minutes of the meeting seeking registration and showing elected officials
7. Copies of National Identity Cards of all group members

6.2 Factors to put into consideration before setting up a collection business

1. Create your own buy-back center whereby people bring the materials, you pay for them and then sell.
a business that regularly produces feasible amounts of recyclable waste.
2. Set up an onsite separation at source operation at a shopping center, residential complex or
3. Produce your own drop-off point, that is, where people bring you the materials free of charge and you sell on to the recycler/MRF.

6.3 Questions to ask recycling companies

Contact recycling companies for advice and ask them:

- The type of recyclables that they deal with
- If there is a need to clean or sort the recyclable waste in any specific way.
- If there is need to compact the materials that are recyclable.
- Where to deliver your sorted recyclable waste.
- The quantity or volume of thresh hold that should be met for them to collect the recyclables.
- The dropping point of recyclable wastes if the collectors have their own means of transport.
- How much they pay per Kilogram or ton both when the collectors deliver to them and when they pick.
- They type of sorting equipment they supply as recyclers, be it racks, bulk bags, compactors, sorting table, etc.
- As a waste collector, it is important to have a target market in mind before engaging in the collection of waste to ensure that whatever you collect is sold to someone and check if there is a stable market for the recyclable items that you collect?
- The person you are selling your recyclable items should be offering a fair- market price, as per the existing rates?
- As a collector, you are better off delivering the recyclables at the doorstep of the recyclers for you to sell at the best prices.

6.4 Requirements to start up a collection business

To start up a waste collection business, you need:

- An enclosed, secure, and unused space.
- An area or space that can be accessed by collectors, public and accessible to recyclers for pick up.
- Security
- Sorting tables in case you are dealing with more than one material, scales, and storage bags.
- Waste bins for the non-recyclables that need disposal.
- Access to a telephone for the purpose of communication
- Education and advertising for collectors
- Signage
- Health and safety practices in place
- Check for possible environmental risks e.g., fire.
- Decide who is to keep the site clean, neat, and tidy, monitor containers, phone for collection, keep record of payments received, etc.



Image Source: pexels.com

6.5 Conduct a background check

- Just like any business, success depends on good research and planning. As a waste collector it is vital that you conduct thorough research and ask the right questions. The most important detail you need to know is whether there is demand for the recyclables you intend to collect in your area. Ask yourself whether you have the support

of the highest contributors of recyclable wastes who are willing to supply their materials regularly.

- Upon getting all the answers to your questions, make decisions on what you need. After that, you will be ready to prepare a business plan for your collection business. Several business plan templates can be found online.

6.6 Identifying an aggregation site

Choose a location or region that seems appropriate for sorting and temporarily storing the waste that you will collect. To find the finest location, it is imperative to talk to your local county or an estate agent based on a nearby commercial sector. To guarantee the best material quality and specifications, ask recyclers for their input on the ideal site layout before creating a basic floor plan.

When identifying an aggregation site, consider the following:

a. Location

- Safe and secure area
- Construction site needing modifications
- A central and appropriate position
- Availability of water and power
- Accessibility by public and collectors
- Availability of recyclables in that area
- Existing building or a vacant site
- Lease or even buy a site

b. Space requirements should be estimated based on:

- Office area
- Volumes and type of recyclables to be stored.
- Period to be stored.
- Offloading, sorting and storage areas
- Containers (type, size, and quantity)
- Ablution facilities
- Turning space and headroom for vehicles

c. The source of recyclable materials

- Community brings waste.
- Collection from households and open spaces
- Collection from high consumption areas e.g., taverns, restaurants, hotels, stadiums, sports fields, outdoor events, shopping centers, schools, picnic spots, offices, and factories.

d. EPR feed based on sector and material fraction to contribute towards recycling capacity growth. ased on sector and material fraction to contribute toward





07

Conclusion

Within the scope of several regulatory frameworks governing waste management, waste collectors play a crucial role. They serve as the first line of defence in terms of enforcing environmental rules and regulations. Waste collectors aid in reducing environmental pollution, defending ecosystems, and advancing environmentally friendly waste management techniques by abiding by these legal frameworks.

Additionally, waste collectors actively assist the circular economy, recycling, and waste diversion objectives. They facilitate the recovery of important resources that would otherwise wind up in landfills by their work in separate collecting, sorting, and transportation of recyclable materials. Waste collectors limit waste creation, save resources, and lessen the negative environmental effects of resource extraction and manufacturing by participating in the circular economy.

Overall, garbage collectors are crucial players in the waste management value chain because they coordinate their activities with legal requirements to maintain environmental compliance and promote sustainable practices. They play a crucial role in encouraging a cleaner future and

supporting the objectives of environmental sustainability because of their commitment to waste diversion, recycling, and the circular economy.

Waste pickers and collectors should adhere to and follow the guidelines given to make their work more effective and efficient. Keenly following the legal rules and regulations to ensure all their activities are in accordance with the law of Kenya, following the safety precautions to protect themselves from harm, engaging the community in waste management and promoting recycling and reusing to help reduce wastes in landfills.

To effectively address waste management, it is essential for countries to collaborate, share experiences, and adopt sustainable waste management practices. This includes adopting waste reduction strategies, promoting recycling and circular economy approaches, investing in infrastructure development, supporting the informal waste sector, and implementing effective policies and regulations. By working together, countries can mitigate the environmental impacts of waste, reduce pollution, and move towards a more sustainable and circular economy.

Overall, garbage collectors are crucial players in the waste management value chain

Image Source: KEPRO



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