

INVESTING IN THE WASTE AND CIRCULARITY SECTOR IN KENYA

An Introductory Guide





ABOUT ANDE

The Aspen Network of Development Entrepreneurs (ANDE) is a global network of organizations that propel entrepreneurship in developing economies. ANDE members provide critical financial, educational, and business support services to small and growing businesses (SGBs) based on the conviction that SGBs create jobs, stimulate long-term economic growth, and produce environmental and social benefits.

As the leading global voice of the SGB sector, ANDE believes that SGBs are a powerful, yet underleveraged, tool in addressing social and environmental challenges. Since 2009, ANDE has grown into a trusted network of over 250 collaborative members that operate in nearly every developing economy. ANDE grows the body of knowledge, mobilizes resources, undertakes ecosystem support projects, and connects the institutions that support the small business entrepreneurs who build inclusive prosperity in the developing world. ANDE is part of the Aspen Institute, a global non-profit organization committed to realizing a free, just, and equitable society.

ABOUT KOIS

KOIS is a leading international impact investment and innovative finance advisory firm founded in 2014. KOIS offers consulting services to design, structure, and place a diverse range of innovative impact financing instruments, as well as to help organizations shape strategies to enhance their societal impact. KOIS also deploys return-seeking capital in social enterprises and impact investment funds.

KOIS has demonstrable expertise in co-designing, fundraising, launching and managing impact investment funds. The cumulative assets under management of our co-managed impact investment funds and our Managing Partners' direct impact investments are over US\$600m. We have launched 5 investment funds to date across Europe and Asia: Inclusio, Tara IV, Impact Expansion, and HealthQuad I and HealthQuad II.



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IKEA Foundation

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TABLE OF ABBREVIATIONS

▶ ABBREVIATIONS

ACEN:	African Circular Economy Network
ANDE:	Aspen Network of Development Entrepreneurs
CapEx:	Capital expenditures
CBO:	Community-based organisation
CO2e:	Carbon dioxide equivalent
CCGWM:	Council of County Government on Waste Management
DFIs:	Development finance institutions
EMCA:	Environmental Management and Co-ordination Act
ESOs:	Enterprise support organisations
EWMA:	Environmental Waste Management Act
EPR:	Extended producer responsibility
FMCG:	Fast-moving consumer goods
GHG:	Greenhouse gas
HDPE:	High-density polyethylene
IoT:	Internet of Things
KAM:	Kenya Association of Manufacturers
KAWR:	Kenya Association of Waste Recyclers
KEBS:	Kenya Bureau of Standards
KEPRO:	Kenya Extended Producer Responsibility Organisation
KEPSA:	Kenya Private Sector Alliance
MSMEs:	Micro, small and medium enterprises
NEMA:	National Environment Management Authority
NGOs:	Non-governmental organisations
PE:	Polyethylene
PET:	Polyethylene terephthalate
PP:	Polypropylene

PS:	Polystyrene
PVC:	Polyvinyl chloride
PROs:	Producer responsibility organisations
PPPs:	Public-private partnerships
SGBs:	Small and growing businesses
SMEs:	Small and medium enterprises
SWMA:	Sustainable Waste Management Act
VAT:	Value-added tax
WM:	Waste management
WMC:	Waste Management Council

► DEFINITIONS¹

- 1 Idea stage**
The business is little more than an unproven idea, so the focus is on testing that idea and identifying a product-market fit.
- 2 Start-up stage**
The business is in the early stages of operations.
- 3 Early stage**
The business may have initial market traction and early revenues but will likely not yet be generating profit.
- 4 Growth stage**
The business demonstrates steady growth or scaling and likely profitability.
- 5 Mature stage**
The business has likely reached stable profits; growth may have slowed.

1. ANDE, Green Entrepreneurship in Kenya, 2023

EXECUTIVE SUMMARY

Kenya's waste management and circularity sector offers significant opportunities for investors, driven by economic growth, increasing waste generation, growing regulations and innovations. The country produces over 24,000 tons of waste daily, amounting to 8.8 million tons annually. More than 75% of this waste is mismanaged, leading to environmental and health challenges and calling for greater private-sector intervention. The Kenyan government has enacted progressive policies to manage the country's growing waste problem, yet enforcement remains inadequate.

In the absence of an organised waste management value chain, most businesses identified by this study manage waste material along the entire value chain, from collection to recycling and selling. Consequently, the business sub-sectors addressed in this guide consist of organic waste services, paper waste services, plastic waste services, textile waste services, e-waste services, biohazardous waste services, wastewater services and integrated waste management services.

The organic waste, integrated waste management, plastic waste and wastewater sub-sectors show the most entrepreneurial activity. The key driver of success for those four sub-sectors is the high volume of waste available, which results in a greater diversity of business models attracting both customers and investors. Businesses recycling high-value waste, such as e-waste, or particularly harmful forms of waste, such as biohazardous waste, have also drawn interest from interviewed investors, but these businesses face challenges related to the complexity and costs associated with recycling processes.

Consequently, although significant opportunities exist in all the sub-sectors identified by this study, the organic waste, integrated waste management, plastic waste and wastewater sub-sectors present the highest opportunities for investors and entrepreneurs. The assessment criteria used to determine the highest opportunity sub-sectors were the amount of waste, the environmental benefits of treating the waste, the complexity of treatment, and the maturity of regulations and entrepreneurship in the sub-sector². This introductory guide is the first in a series that also includes investment guides that deep dive into each of the highest opportunity sub-sectors in Kenya's waste and circularity sector: plastic waste, wastewater, organic waste and integrated waste management. These guides provide further information on trends, opportunities, policies and challenges, as well as further details on the main identified business models and their financing needs and case studies of successful businesses.

2. Sub-sector maturity refers to the number of businesses in each sub-sector, their level of maturity and the amount of investment received.

Sub-sector	Amount of waste	Environmental benefits	Complexity	Regulatory maturity	Sub-sector maturity
Organic	High	Medium	Low	Medium	Medium
Paper and cardboard	High	Low	Low	Low	Low
Plastic	High	High	Medium	High	Medium
Textile	Medium	Low	Medium	Low	Low
Biohazardous waste	Low	High	High	Medium	Low
E-waste	Low	Medium	High	Medium	Low
Wastewater	High	High	High	Medium	Medium
Integrated waste management	High	High	High	Medium	Medium

Figure 1 - Mapping of waste sub-sectors in Kenya by factors impacting opportunities

To fully leverage the above opportunities, waste management and circular economy businesses generally incur high capital expenditures (CapEx) and working capital costs related to their manufacturing processes. Investments are often used to cover operational costs during the recycling process or finance the infrastructure, equipment and technology required to process larger quantities of waste or expand to new geographies. Furthermore, regulatory requirements, such as licences, incur upfront costs for businesses in the sector. In general, companies often need patient capital as they typically take about five years to become profitable.



While the pool of investors contributing to the sector is growing, most investment to date has been provided by impact investors, the investment arms of foundations, development finance institutions (DFIs) and non-profit investment funds. These investors are typically willing to provide capital with more concessional terms (often with lower interest rates, longer tenors or flexible disbursement schedules), including to earlier-stage companies, to promote economic, social and/or environmental impact. Commercial investors (including banks) are yet to invest significantly in the sector.

Typical financiers that make investments in the sector invest in early- or growth-stage businesses and offer ticket sizes of between US \$50,000-500,000. Companies in the idea and start-up stages often secure grants from donors or development organisations to develop a minimum viable product and generate their first consistent revenues. Companies in the growth stage looking for larger ticket sizes (> US\$ 500k) find fewer investors with a track record in the sector to finance the recycling process costs, equipment and infrastructure required to build their capacity to reach more customers.

Thus, despite a growing amount of available financing, significant gaps exist, particularly in early- and growth-stage funding. Few business models have shown their commercial viability and contributed to the investment track record of the sector. Investors often associate the sector with high risks due to the long timeline for profitability, regulatory uncertainties, a lack of disruptive innovations, and issues related to waste workers' rights and protection.

Due to the limited availability of capital in the sector, risk mitigation and innovative finance instruments could be leveraged to mobilise investments in waste and circularity businesses. Risk mitigation instruments, results-based financing mechanisms, concessional capital and support mechanisms could reduce the perceived and real risks of the sector, thus catalysing additional private investment and developing a track record of transactions.

METHODOLOGY

This study employed a mixed-methods approach, integrating both primary and secondary research methodologies to gather and analyse data.

The literature review provided a foundational understanding of the current state of knowledge in this area, informing the assumptions and data gaps that the interviews subsequently explored. Primary and secondary research identified 122 small and growing businesses (SGBs) across ten sub-sectors in the waste management and circularity sector in Kenya. Primary and secondary research also helped identify transactions (including grants, debt, equity and blended finance transactions) in the sector.

Primary research was conducted through 24 semi-structured interviews with key stakeholders in the waste management and circularity sector and one focus group discussion with businesses.

Interviewees included executives from 14 waste management and circularity businesses, five financiers with investments in the sector and five enterprise support organisations. These interviews aimed to gather insights on the current state of the waste management and circularity sector, its main business models and their financing needs, and the challenges and opportunities identified or faced by these stakeholders.

This mixed-methods approach identified investment opportunities across the sector. Interviews with investors and enterprise support organisations pointed out business models that showed a high potential for scalability. Secondary research on businesses and investment transaction data highlighted business models that attracted capital and follow-up investments and managed to consistently grow their revenues.

It is important to note that the transaction data mostly concerns more mature SGBs who have secured grants or investments and may not reflect less mature companies in Kenya's waste management and circularity sector.

Therefore, the data presented may not accurately reflect the financing modes for smaller, less mature local businesses which often rely on their own funds, loans from family and friends, crowdfunding platforms or incubators and accelerators.

MARKET OVERVIEW

The importance of waste management and the circular economy in Kenya

Sub-Saharan Africa is the region experiencing the fastest growth in waste generation due to rapidly increasing consumption and urbanisation resulting from the continent's population and economic growth.³⁴ Every day, Kenya produces over 24,000 tons of waste, amounting to 8.8 million tons annually. Most of this waste is currently mismanaged, with more than 75% of it incinerated or disposed at dumpsites. Moreover, Kenya is home to two of the world's 50 largest landfills – Dandora in Nairobi and Kibarani in Mombasa – highlighting its significant waste management (WM) challenges.⁵

Mismanaged waste in Kenya poses several environmental and health risks, which local actors are yet to comprehensively address. The proximity of landfills to residential areas in Kenya degrades the quality of life of nearby communities and poses severe health risks by contaminating local land and water resources.⁶ Moreover, landfills are a significant source of greenhouse gas (GHG) emissions, contributing to about 11% of methane emissions globally.⁷ In addition, waste incineration releases toxic pollutants into the air, water and soil and produces hazardous ash that can contaminate the environment and pose health risks to nearby communities.

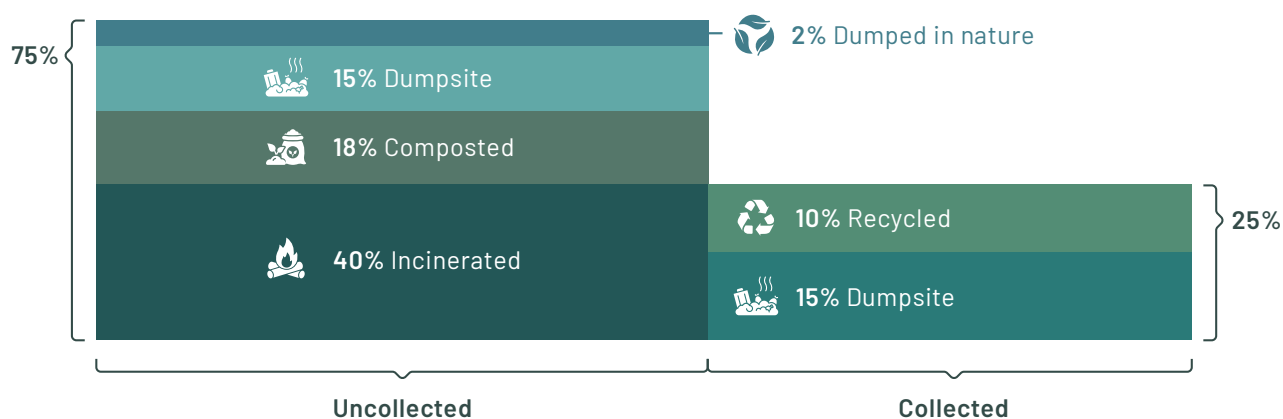


Figure 2 – Waste management in Kenya

3. IETC, Africa Waste Management Outlook, 2019

4. Kumar & Bailey-Morley, ODI Working Paper, 2022

5. ANDE, Building the Green Economy – Trends and Opportunities for Green Entrepreneurship in Kenya, 2023

6. Okalla, The Myth That Is Plastic Waste Recycling in Kenya, 2022

7. Reuters, Landfills Around the World Release a Lot of Methane – Study, 2022

Waste management challenges vary significantly across the country as waste generation patterns and management services are unequally distributed. Urban areas, home to 30% of the population, generate about 40% of total waste, highlighting greater waste challenges compared to rural areas.⁸ Mombasa County has the highest per capita waste at 0.91 kg/day, followed by Nairobi (0.59 kg/day),⁹ Kisumu (0.48 kg/day) and Nakuru (0.26 kg/day).¹⁰ In Nairobi and Mombasa, waste collection rates are relatively high at 75% and 50%, respectively; in Kisumu, only 20% of waste is collected. In the country's poorer areas, households often cannot afford collection services. Rural households on average compost 25% of their waste, with most waste uncollected, burned or dumped improperly in nature due to the absence of local waste collection services.¹¹

Besides solid waste, Kenya faces significant challenges effectively managing wastewater. Out of an urban population of over 14 million people, fewer than 20% have access to sewerage services, and only 5% of collected sewage is effectively treated due to failures in the sewerage system.¹² Wastewater contains various contaminants, including chemicals, oils and human waste, leading to severe health and sanitation challenges. Effectively treating wastewater could contribute to addressing water scarcity in the country and reducing water-borne diseases.

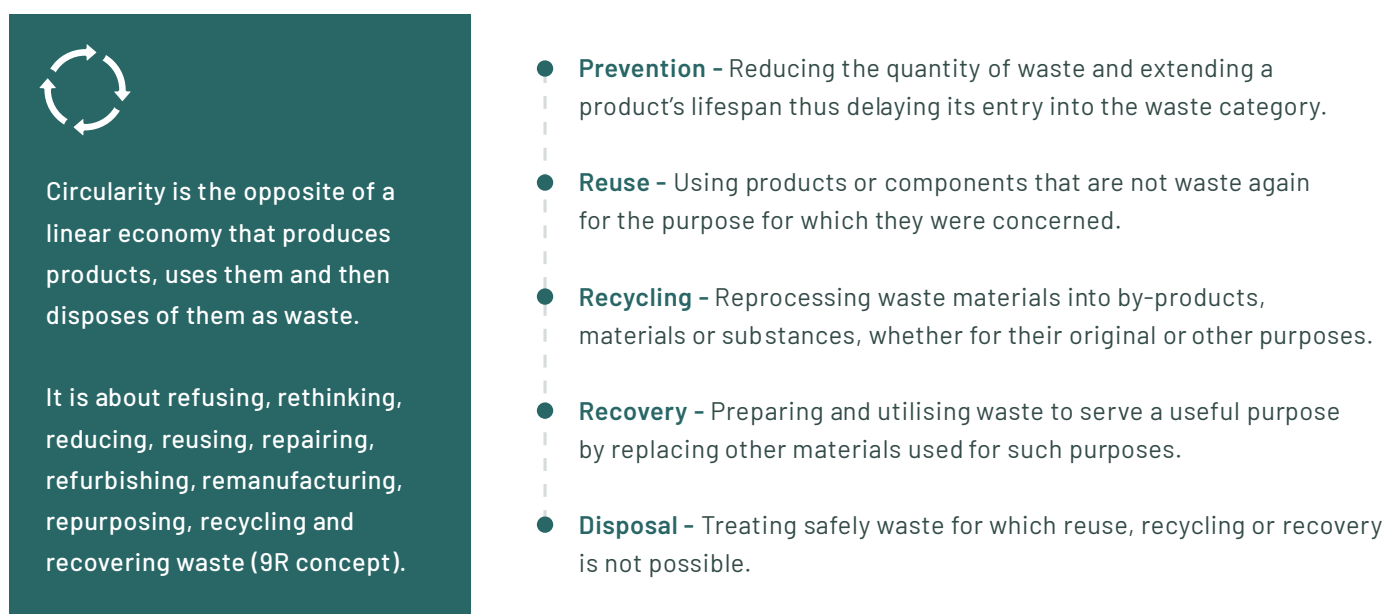


Figure 3 - Circularity and waste hierarchy¹³

Effective waste management in Kenya could yield multiple environmental, social, health and economic benefits.

In addition to addressing some of the environmental and health challenges identified above, promoting circular economy practices is projected to drive economic growth, potentially creating around 46,000 jobs by 2030.¹⁴

8. ANDE, Building the Green Economy - Trends and Opportunities for Green Entrepreneurship in Kenya, 2023

9. However, other reports suggest a slightly different number.

10. Takatakanimali, Bridging the Gap in Waste Management: Data and Regulatory Compliance for Sustainable Properties, 2024

11. UNIDO, Country Report Plastic Value Chain in Kenya, 2021

12. World Bank, Urban Population - Kenya, 2019

13. Kituku et al., Entrenching Waste Hierarchy for Sustainable Municipal Solid Waste Management in Kenya, 2020

14. European Union, Circular Economy in Africa-EU Cooperation, 2020

Trends in the waste management and circularity sector in Kenya

Kenya's 2010 Constitution devolved a number of responsibilities to county governments, including those related to waste management and sanitation. Firstly, county governments are in charge of organising waste management systems in their jurisdictions to respect Kenyan citizens' constitutional right to "a clean and healthy environment".¹⁵ County authorities are, therefore, supposed to set and enforce policies and legislation related to waste management and the environment, such as the mandatory licensing of waste management operators and local enforcement of the recent Sustainable Waste Management Act (SWMA) (see sub-section The legislative and policy framework for waste management in Kenya, below).¹⁶ Additionally, to fulfil these responsibilities, county authorities contract private actors through public-private partnerships (PPPs)¹⁷ for waste collection, transport and disposal. Yet, as highlighted by the significant waste management issues outlined above, counties are struggling to perform these duties, especially those that lack suitably trained staff, infrastructure and funding.¹⁸

The private sector's role in waste management has emerged due to the public sector's limited capacity to manage increasing waste quantities. Many private businesses now provide basic collection services, obtaining fees from households, estates, companies and organisations in exchange for their services. Over 5,000 companies have registered collection vehicles with the National Environment Management Authority (NEMA), indicating extremely high levels of sector fragmentation. A growing number of recycling and recovery companies have entered the sector in the last 15 years, taking advantage of the amount of waste material available, the increased accessibility of recycling technology and improved regulations related to waste management responsibilities in the country. A few companies have also established PPPs to support county governments to fulfil their waste management responsibilities, particularly in the sanitation sub-sector.¹⁹ Previous research by the Aspen Network of Development Entrepreneurs (ANDE) has identified a total potential market amounting to US\$ 1 billion for solid waste management services and US\$ 53 billion for sanitation services.²⁰

Despite these developments, the private sector remains at an embryonic stage as start-ups are yet to fill the gap left by the public sector's inaction and few private companies have shown the ability to scale their operations significantly. Few business models have proven their commercial viability and ability to scale to attract investments. Numerous businesses, therefore, rely on grants from donor-funded organisations to pilot and expand their operations. Although a few multinationals, such as Suez and Enviroserve, have also opened operations in Kenya, they are far from addressing all the waste challenges in the country.

15. Kenyan Constitution, 2010

16. The Sustainable Waste Management Act, 2022

17. These PPPs can take 13 different forms, but in general, the county governments provide funding or land and the private actors will undertake some parts of the project such as designing, building, operating and/or maintaining facilities; sometimes, a transfer of the facilities takes place. These PPPs are mainly present in the richest counties, such as Nairobi, Kisumu, Mombasa, and Nakuru; money represents the highest barrier to counties carrying out their waste management duties.

18. The National Waste Management Policy, 2019

19. World Bank, Market-Based Models and Public-Private Partnership Options for Non-Sewered Sanitation in Selected Cities and Towns in Kenya, 2022

20. ANDE, Building the Green Economy – Trends and Opportunities for Green Entrepreneurship in Kenya, 2023

The informal sector, composed of waste collectors, pickers, itinerant traders, dump service providers and recyclers who operate without registration from local environmental authorities,²¹ represents a significant share of the waste management industry. Informal operators thrive due to unmet opportunities in the formal sector and the high costs and complexity of formal registration for businesses.²² They are sometimes organised in groups, forming community-based organisations (CBOs). Informal operators tend to offer lower prices and compete with legal businesses over waste material and clients. Kenyan authorities are yet to enforce regulations and ensure legal and environmental compliance from these actors.²³

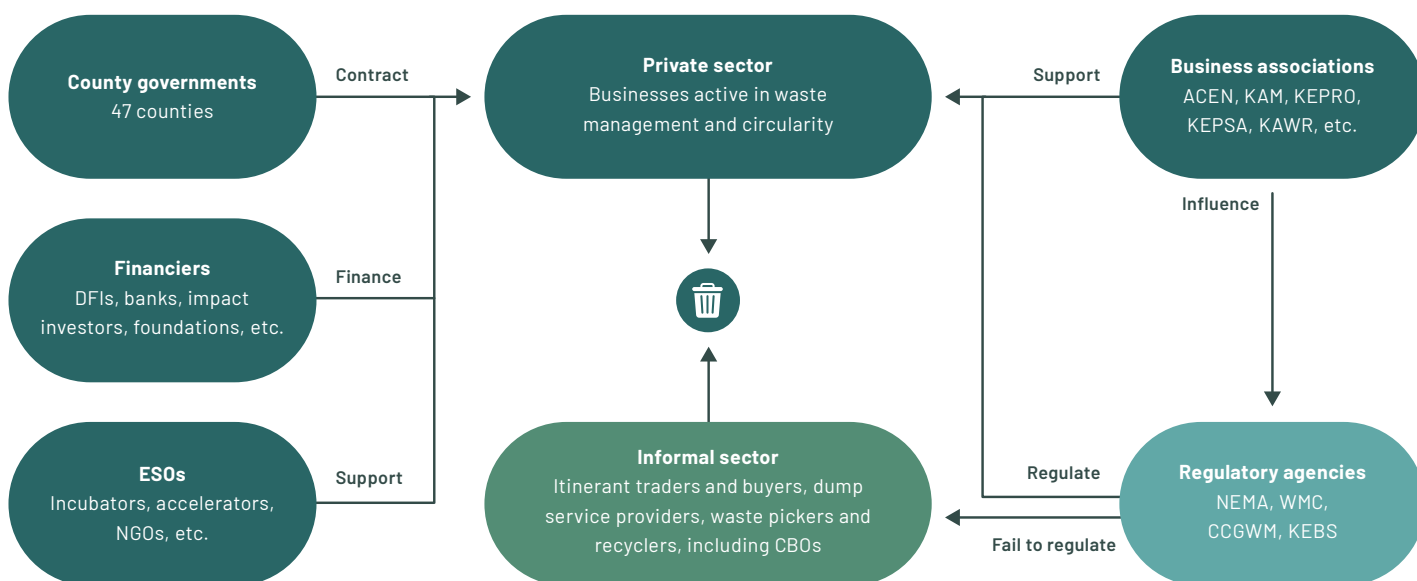


Figure 4 – Stakeholder mapping²⁴

Business associations such as the Kenya Association of Manufacturers (KAM), the Kenya Association of Waste Recyclers (KAWR), the Kenya Private Sector Alliance (KEPSA), the Kenya Extended Producer Responsibility Organisation (KEPRO) and the African Circular Economy Network (ACEN) seek to promote waste management and circular practices amongst their members. These organisations play an important role in the sector by creating linkages with waste management and recycling service providers, sharing guidelines and best practices, promoting circularity, raising awareness on environmental issues related to waste mismanagement and advocating for robust relevant policies.

21. Including the National Environment Management Authority (NEMA) or Nairobi City Council.

22. ANDE, Building the Green Economy – Trends and Opportunities for Green Entrepreneurship in Kenya, 2023

23. International Water Management Institute (IWMI), Investment Climate Assessment for Circular Bioeconomy – Review of National Policies and Strategies in Kenya, 2022; Takatakanimali, Bridging the Gap in Waste Management: Data and Regulatory Compliance for Sustainable Properties, 2024; Intellectap & Bestseller Foundation, Waste-to-Value Startup Ecosystem: Opportunities for Circular Approaches in East Africa, 2021

24. ESOs – enterprise support organisations; DFIs – development finance institutions; NGOs – non-governmental organisations; ACEN – African Circular Economy Network; KAM – Kenya Association of Manufacturers; KEPRO – Kenya Extended Producer Responsibility Organisation; KEPSA – Kenya Private Sector Alliance; KAWR – Kenya Association of Waste Recyclers; NEMA – National Environment Management Authority; WMC – Waste Management Council; CCGWM – Council of County Government on Waste Management; KEBS – Kenya Bureau of Standards



The legislative and policy framework for waste management in Kenya

Over the last decade, the Kenyan government has adopted a number of progressive waste management policies, making it one of the waste management champions of the East African region. General waste management policies and regulations have established clear targets, assigned responsible bodies for their achievement and banned a number of harmful practices. Additionally, Kenya has adopted several regulations and policies related to specific kinds of waste (further described in the sub-sections dedicated to each sub-sector in section 2 Business Activity in Waste Management and Circularity), which are notably focused on reducing plastic and e-waste pollution.

The Environmental Management and Co-ordination Act (EMCA) was enacted in 1999, providing the framework for environmental management in Kenya. The Act established the NEMA and the Environmental Tribunal and provided for the regulation of environmental activities, including waste management. In 2010, the Constitution of Kenya was promulgated, recognising the right to a clean and healthy environment (Article 42) and the duty to protect and preserve the environment (Article 24). The Constitution also established the National Environment and Natural Resources Tribunal, which has jurisdiction over environmental matters. In 2016, the Green Economy Strategy and Implementation Plan was launched, aiming to promote sustainable development and reduce Kenya's environmental footprint. The strategy includes a focus on waste management, with the goal of reducing waste generation and increasing recycling rates. Building on this strategy, the National Sustainable Waste Management Policy was launched in 2021, providing a comprehensive framework for sustainable waste management in Kenya. In 2022, the Sustainable Waste Management Act was enacted, providing a new framework for waste management in Kenya. The Act established the National Waste Management Authority (NWMA) and provides for the regulation of waste management activities, including waste collection, transportation and disposal. The Act also emphasises the need for sustainable waste management practices, including waste reduction, reuse, recycling and disposal, and includes the introduction of extended producer responsibility (EPR) regulations.

<p>1999 The Environmental Management and Co-ordination Act</p>	<p>Establishes institutions and regulates matters related to environmental protection.</p>
<p>2010 The Kenya Constitution</p>	<p>States that all citizens have the right to a clean and healthy environment and transfers responsibility for waste management from the national level to the county level.</p>
<p>2016 Green Economy Strategy and Implementation Plan 2016-2030</p>	<p>Promotes low-carbon growth and sustainable resource management, including waste reduction and infrastructure development.</p>



<p>2021 The National Sustainable Waste Management Policy</p>	<p>Emphasises waste recovery, recycling and capacity building, advocating for the implementation of the waste hierarchy.</p>
<p>2022 The Sustainable Waste Management Act</p>	<p>Provides guidelines for waste management licensing, monitoring and enforcement, waste segregation at source and waste information systems. In addition, the Act mandates county governments to set up vital waste management infrastructure, such as central waste collection centres, recovery and recycling facilities and sanitary landfills. And finally, it includes the introduction of extended producer responsibility (EPR) Regulation within two years, defined as the obligation for producers to be responsible for the collection, recycling or safe disposal of the waste generated by their products.</p>

Figure 5 – Main legislation and policies on waste management in Kenya²⁵

Despite these important framework developments, the implementation of these laws and policies is lagging behind, in part due to a lack of standards, which complicates enforcement. Current policies tend to focus mainly on plastic and e-waste, neglecting the importance of addressing all waste types. Moreover, most policies remain under-enforced. Many informal actors operate without licences despite the EMCA 1999 establishing mandatory licences for handling, transporting and disposing of waste, undermining the competitiveness of formal businesses. Similarly, the recently adopted EPR regulations, which make producers responsible for waste management across their products' lifecycles, suffer from poor enforcement due to low national awareness and limited monitoring.²⁶

The shift in responsibility for waste management from the national level to county governments, introduced by the 2010 Kenya Constitution, has also created challenges. Regulations have not been effectively communicated with all counties and stakeholders in the value chain. There are also significant imbalances between counties as some struggle to implement policies due to a lack of technical capacity, access to equipment and funding.²⁷ For example, Uasin Gishu County is struggling to improve its waste management systems because of poor infrastructure, limited education and a lack of economic incentives.²⁸

25. International Water Management Institute (IWMI), Investment Climate Assessment for Circular Bioeconomy – Review of National Policies and Strategies in Kenya, 2022; Ngare & Muriithi, Transitioning Circular Economy from Policy to Practice in Kenya, 2023; NEMA, E-waste Guidelines, 2013

26. International Water Management Institute (IWMI), Investment Climate Assessment for Circular Bioeconomy – Review of National Policies and Strategies in Kenya, 2022

27. Ngare & Muriithi, Transitioning Circular Economy from Policy to Practice in Kenya, 2023

28. The Earth & I, Kenya's Growing Pain: Sustainable Solid Waste Management, 2021

Challenges along the waste value chain in Kenya



PRODUCTION

Despite stricter EPR regulations requiring producers to manage waste throughout their products' lifecycle, responsible practices remain rare in Kenya. These regulations aim to reduce waste and encourage material reuse, recycling and recovery, but their enforcement remains weak. Businesses face challenges sourcing recycled inputs due to limited local recycling capacities, and many lack awareness of these regulations and their supply chains' environmental impacts.²⁹



CONSUMPTION

Research shows that consumers have limited knowledge of waste management concerns in the country and, therefore, rarely follow sustainable consumption practices. Most prioritise cost over sustainability, as recycled products adhering to international norms are more expensive.³⁰ Moreover, although public and private entities are required to sort their waste according to the 2022 SWMA, segregation at the source is nearly non-existent. Regarding wastewater, 70% of Kenya's population lacks access to basic sanitation, with 3% in urban areas and 12% in rural areas practising open defecation.



COLLECTION

Only 25% of waste generated in Kenya is collected, leaving about 18,000 tons of uncollected waste every day, particularly in rural areas and underserved urban areas such as slums.

Collection trucks are not adapted for specific types of waste and are not divided to handle multiple waste types, leading to inefficient sorting.³¹ Additionally, during the rainy season, collection trucks struggle to access dumpsites, resulting in waste being dumped in nature.³² Due to the relatively low supply of sanitation services, a large unmet need exists for further provision of faecal sludge management services, which amounts to US\$ 26 million in Nairobi alone.³³

29. KEPRO, EPR Guideline, 2023

30. International Water Management Institute (IWMI), Investment Climate Assessment for Circular Bioeconomy – Review of National Policies and Strategies in Kenya, 2022

31. Waste & Recycling, Kenya's Waste Management Journey: Headwinds & Tailwinds, 2023

32. Dikson, Implementation of solid waste management policies in Kenya: challenges and opportunities, 2022

33. Based on an average exhauster truck's capacity and the transport fee charged according to the Septage Emptiers Association of Kenya.



SORTING OR DISPOSAL

Collected waste is rarely handled and sorted appropriately. Regulation compliance remains very low, leading to most collected waste being dumped in nature or in landfills without any segregation. At the landfill, unsorted waste is subject to contamination and, therefore, rapidly loses value and becomes increasingly unrecyclable.³⁴ Moreover, waste pickers in the dumpsites are exposed to significant health risks as they lack appropriate protective equipment and medical coverage.³⁵



RECYCLING OR RECOVERY

Currently, only 10% of Kenya's waste is recycled, missing an opportunity to recycle up to 7.9 million tons of waste annually. Recycling companies often face challenges in sourcing quality waste due to inadequate local sorting capacities and competition from informal operators.³⁶ The EPR scheme could be promising as producer responsibility organisations (PROs) can collect fees from producers and engage recycling facilities, even if these fees are still too low.³⁷ Most wastewater ends in water resources as wastewater treatment capacities remain low (less than 30% of wastewater generated in Nairobi is treated).

Although the private sector could play an important role at all steps of the waste value chain, several challenges to entrepreneurship and investing in waste management hinder the growth of the sector in Kenya. Despite the adoption of recent relevant regulations, their implementation and enforcement remain weak. Therefore, producer obligations to use recycled material, engage with waste management companies to manage their waste, or reduce waste along their value chain remain unclear, limiting investors' and entrepreneurs' willingness to engage in the sector. Companies in the sector cannot rely on an organised waste collection system to source waste material. Thus, companies have to organise and pay for waste collection in order to obtain the necessary inputs for their production, in turn reducing their margins. Additionally, recycling companies' profitability heavily depends on the selling price of recycled materials, which is highly volatile. Large international and national buyers often dominate the market, imposing their prices due to weak national demand. Finally, foreign-owned businesses are significantly more likely to raise investments than locally-owned businesses, which most interviewees attributed to local entrepreneurs' lack of experience with fundraising and limited investor networks.³⁸

34. The National Waste Management Policy, 2019

35. Takatakanimali, Bridging the Gap in Waste Management: Data and Regulatory Compliance for Sustainable Properties, 2024; Intellectap & Bestseller Foundation, Waste-to-Value Startup Ecosystem: Opportunities for Circular Approaches in East Africa, 2021

36. Takatakanimali, Bridging the Gap in Waste Management: Data and Regulatory Compliance for Sustainable Properties, 2024; Intellectap & Bestseller Foundation, Waste-to-Value Startup Ecosystem: Opportunities for Circular Approaches in East Africa, 2021

37. Clean Up Kenya, Extended Producer Responsibility Smokes and Mirrors as Government Proposes Eco Levy, 2024

38. Interviews with local investors, businesses and ESOs.

Market Segmentation

In the absence of an organised waste management value chain, most businesses identified in this research manage waste material along the entire value chain, from collection to recycling and selling. Most companies specialise in specific types of waste, using specialised technologies and skills. As these technologies and skills vary significantly by waste type, only a few companies have developed systems capable of treating multiple kinds of waste.

Consequently, the business sub-sectors addressed in this guide consist of organic waste services, paper waste services, plastic waste services, textile waste services, metal waste services, e-waste services, biohazardous waste services,³⁹ wastewater services and integrated waste management services. We have identified small and growing businesses (SGBs) in each business sub-sector in Kenya, except for the metal waste sub-sector which is dominated by the informal sector.⁴⁰

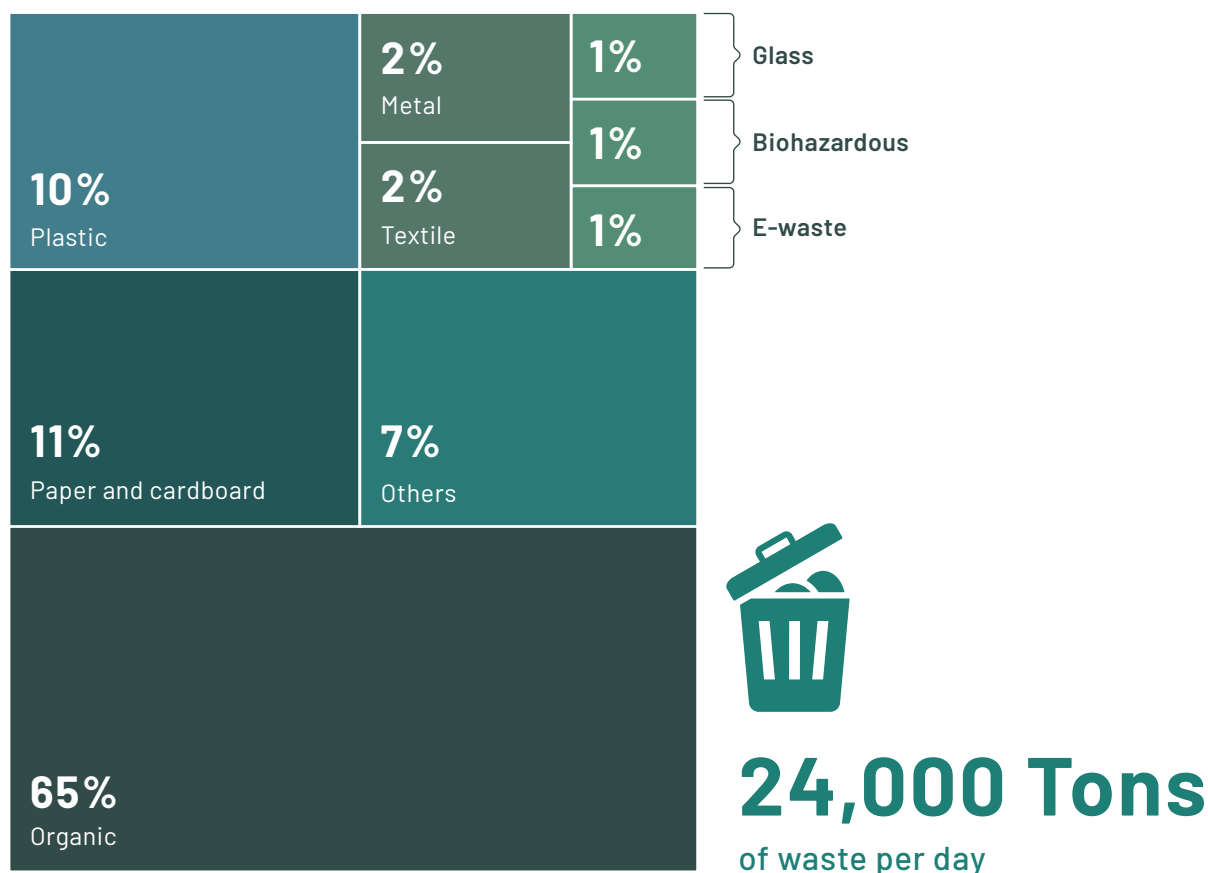


Figure 6 – Solid waste generated in Kenya⁴¹

39. Including medical waste.

40. According to interviewees, metal waste is almost entirely collected and managed by informal businesses.

41. ANDE, Building the Green Economy – Trends and Opportunities for Green Entrepreneurship in Kenya, 2023; UNIDO, Country Report Plastic Value Chain in Kenya, 2021

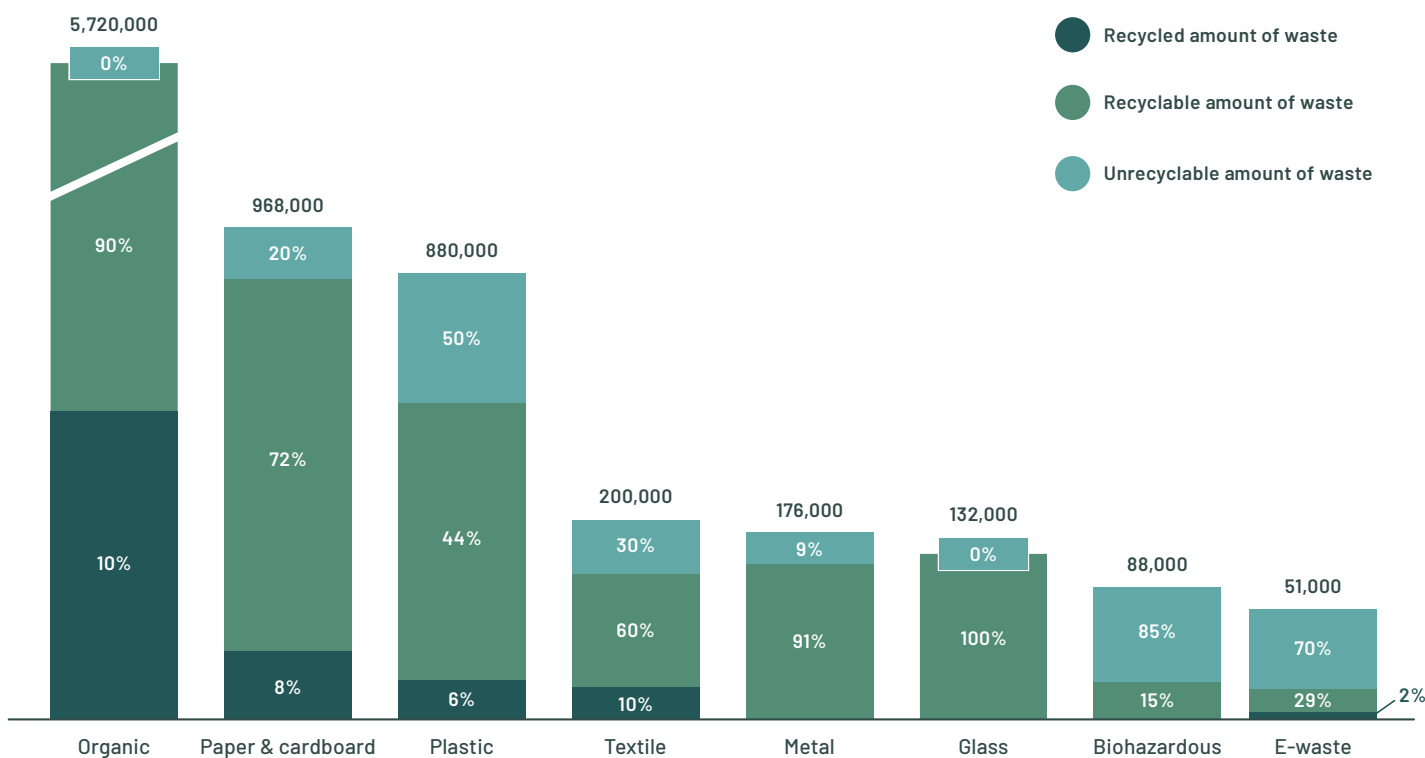


Figure 7 – Annual solid waste generation, disaggregated by recyclable waste, recycled waste and unrecyclable waste, 2023 [tons]^{42 43 44}

Organic, paper and cardboard, and plastic waste account for 86% of the waste generated in Kenya. However, a significant portion of these waste segments could be significantly reduced, if not eliminated, given the high recyclability of organic waste, paper, cardboard, polyethylene terephthalate (PET) and high-density polyethylene (HDPE) plastics. Other types of waste must also be recycled, even if the recyclability rate is lower, as is the case for biohazardous waste and e-waste, which often contain high levels of toxic components.

42. ANDE, Building the Green Economy – Trends and Opportunities for Green Entrepreneurship in Kenya, 2023; Kenya Association of Manufacturers, Kenya Plastic Action Plan, 2019; Global Recycling, Kenya: Much Has to Be Done, 2018

43. Recyclable waste amounts have been computed by multiplying the amounts of waste and the average recyclability rate for each type of waste. Recycled waste amounts have been computed by using estimated recycling rates in Kenya collected through secondary research and interviews. Unfortunately, no recycling rates could be identified for metal, glass and biohazardous waste in Kenya.

44. As organic waste accounts for 65% of waste generated in Kenya, the organic waste bar was purposely shortened to show the recyclable, recycled and unrecyclable shares of other types of waste.

BUSINESS ACTIVITY IN WASTE MANAGEMENT & CIRCULARITY

Mapping of identified businesses

This study identified 122 SGBs across ten sub-sectors in the waste management and circularity sector in Kenya. Figure 8, below, presents businesses identified in nine of these sub-sectors across the waste management ecosystem.⁴⁵

The organic waste, plastic waste, wastewater, and integrated waste management sub-sectors show the most entrepreneurial activity (representing 30, 18, 27 and 16 of the total 122 businesses identified, respectively).

The key driver of the success of these four sub-sectors is the high volume of waste available, which results in a greater diversity of business models attracting both customers and investors. Businesses recycling high-value waste, such as e-waste, or particularly harmful forms of waste, such as biohazardous waste, have also drawn interest from interviewed investors. However, those businesses face challenges related to the complexity and costs associated with recycling processes. This section maps identified businesses across the eight key sub-sectors in the waste management and circularity sector and across the waste management hierarchy.⁴⁶ The sub-sector deep dives present a market overview and the main entrepreneurship and investment opportunities for each sub-sector.

45. This number is non-exhaustive.

46. Although we identified seven businesses in the glass waste management sub-sector, these have been omitted from our analysis due to the limited activity in that sub-sector and the low environmental and political concerns related to glass waste. Moreover, despite the high recyclability of metal waste and the 176,000 tons of metal waste generated annually in Kenya, no small and growing business has been identified in that area. The informal sector plays an important role in managing disposed metals. Similarly, glass waste management has been deleted from our analysis due to the limited activity in that sub-sector and low environmental concerns related to glass waste. The sub-sector includes several businesses, such as Kitengela Glass, Milly Glass and Bottle Logistics, but only two adapted recycling facilities have been identified. No specific regulations have yet been adopted for this sub-sector and although recycling glass does have environmental benefits and allows the preservation of resources, the environmental effects of glass waste disposed in nature or landfills are negligible.










































Sub-sector	Prevention	Reuse	Recycling	Recovery	Disposal
Organic 30	 		 	  	—
Paper and cardboard 6			 WASTE PAPER KENYA	 	—
Glass 7				 	—
Plastic 18			 	  	—
Metal 0				—	—
Textile 5			 		—
Biohazardous waste 5		—	Treatment		 
E-waste 8					
Wastewater 27	 		Treatment   		—
Integrated waste management 16					

Figure 8 – Illustrative businesses by sub-sector and step of the waste management hierarchy [# businesses identified in each sub-sector]^{47 48}

47. Cases marked represent the areas where new business models are not needed or not justifiable. Empty cases represent areas where no small and growing business could be identified. For e-waste and integrated waste management, businesses were not disaggregated across the waste value chain as all identified businesses address more than two different areas. Finally, as the treatment of wastewater involves the collection of wastewater from various sources followed by a multi-step process to remove contaminants, pollutants and pathogens, the re-use, recovery and recycling categories were merged into a “treatment” category for that sub-sector.

48. SGBs are defined by ANDE as commercially viable businesses with five to 250 employees that have significant potential and ambition for growth. Typically, SGBs seek growth capital from US\$ 20,000 to US\$ 2 million. SGBs differ from the more traditional characterisation of small and medium-sized enterprises (SMEs) in two fundamental ways. First, SGBs are different from livelihood-sustaining micro and small businesses, which start small and are designed to stay that way. Second, unlike many medium-sized companies, SGBs often lack access to the financial and knowledge resources required for growth. While some literature and resources apply broadly to SMEs, ANDE focuses on SGBs when possible.

Organic

SUB-SECTOR OVERVIEW



5.7 million tons, including food waste, yard waste, animal waste, agricultural waste, wood waste, organic sludge, biodegradable waste and human waste (faecal sludge)



Avoids methane and CO2 emissions associated with organic waste decomposition, deforestation, and the use of toxic fertilizers







Governance frameworks addressing organic waste management are relatively underdeveloped. Organic waste is supposed to be segregated from other waste, but this is not respected



30 businesses

IDENTIFIED BUSINESS MODELS

Business model	Illustrative business	Description
Prevention of food waste	Taimba Limited 	Reduces food wastage and stabilises market prices by connecting farmers to urban traders through a platform
Recycling to feed insects for protein	Chanzi 	Converts food waste into nutritious protein for animal feed
Conversion into energy	Sistema. bio 	Provides biodigesters that convert organic waste into biogas used as thermal and mechanical energy
Conversion into fertilizer	Regen Organics 	Converts crop waste into high-yielding organic fertilizers



SUB-SECTOR OPPORTUNITIES

Waste prevention

- ✔ **Reduction of food waste:** Improving food transportation using refrigerated storage containers and reusable heat-resistant bags and taking advantage of digital advancements to connect growers directly with markets, using advanced tracking and data analytics systems to monitor and manage food waste more effectively
-

Waste recycling

- ✔ **Conversion into protein:** Higher nutrition outcomes and more sustainable than soy-based protein
-

Waste recovery

- ✔ **Conversion into organic fertilizer:** Cheaper and more sustainable than mineral fertilizers, building on high demand for fertilizers in Kenya (and a lack of locally-produced fertilizers)
- ✔ **Conversion into biogas:** Reliable energy source for industries requiring constant energy (national grid and solar systems face frequent interruptions) and households

Paper and cardboard

SUB-SECTOR OVERVIEW



968,000 tons from paper and cardboard annually



Reductions in deforestation, resource usage and pollution




Absence of specific regulations



Six businesses (including two major players established in the 1960s and 1990s which employ more than 5,000 individuals each)

IDENTIFIED BUSINESS MODELS

Business model	Illustrative business	Description
Recycling	Kamongo Waste Paper 	Sells commercial paper shredders, paper waste collection services and recycled paper
Conversion into paper packaging	Cots Paper & Board Ltd 	Converts paper waste into paper boards, paper egg trays and egg boxes
Conversion into tissue and hygiene products	Chandaria 	Converts paper waste from private and commercial industries into tissue and hygiene products
Conversion into pencils	Momo Pencils 	Converts newspaper into pencils



SUB-SECTOR OPPORTUNITIES

Waste prevention

- ✔ **Digitalisation:** Support digitalisation of books, newspapers and other printed materials to decrease paper consumption
-

Waste recycling

- ✔ **Design sustainable packaging:** Design packaging using recycled paper or cardboard that is made to be easily recyclable
- ✔ **Recycle paper waste:** Transform paper waste into recycled paper that can be used as writing paper, toilet paper or wrapping paper

Plastic

SUB-SECTOR OVERVIEW



880,000 tons annually including polyethylene (PE), polypropylene (PP), polystyrene (PS), polyvinyl chloride (PVC) and polyethylene terephthalate (PET)



Avoids pollution of water resources due to the improper disposal of plastic and the greenhouse gas emissions induced in plastic production








Elaborate and rigorous regulations, including the Ban on Single-used Plastic and VAT exemptions for plastic recycling companies. The EPR regulations are also applicable



18 businesses

IDENTIFIED BUSINESS MODELS

Business model	Illustrative business	Description
Prevention of single-use plastic with technology	Novek 	Builds and sells IoT technology to eliminate single-use plastic from FMCG supply chains
Collection and recycling	Mr. Green 	Collects plastic waste and sells recycled plastic pellets by empowering informal waste pickers
Conversion into energy	Adarsh Polymers 	Converts plastic waste into briquettes and polymer
Conversion into building materials	Chemolex 	Converts plastic waste into plastic pavers
Conversion into decoration	EcoWorld Watamu 	Converts plastic waste into decoration by empowering informal waste collectors and local artists



SUB-SECTOR OPPORTUNITIES

Waste prevention

- ✔ **Alternative packaging design:** Providing biodegradable plastics and bioplastics to shops as well as providing alternative ways to deliver products in bulk, avoiding the use of single-use plastic
-

Waste recycling

- ✔ **Recyclable product design:** Ensuring products and packaging can be repurposed by recycling companies.
 - ✔ **Polystyrene recycling:** Recycling polystyrene, which, due to its low density, is rarely recycled although it is commonly found in packaging for take-out food, coffee cups and electronics
-

Waste recovery

- ✔ **Conversion into construction material:** Converting plastic into bricks, pavements, partial replacement of the aggregates in concrete, roads components and other construction materials



Textile

SUB-SECTOR OVERVIEW



200,000 tons annually, driven by second-hand garments from (mostly developed) foreign countries which add to the already substantial amount of textile waste in Kenya



Reduces energy consumption, greenhouse gas emissions and resource usage



Absence of specific regulations



5 businesses

IDENTIFIED BUSINESS MODELS

Business model	Illustrative business	Description
Collection, reuse and recycling	Africa Collect Textiles 	Collects, distributes, recycles, repurposes and upcycles used textiles and footwear
Conversion into home textile	Moko 	Uses scrapped foam to manufacture mattresses



SUB-SECTOR OPPORTUNITIES

Waste prevention, reuse and recycling

- ✓ **Modern production processes:** Local textile manufacturers should ensure that textiles are designed to last and use efficient cutting techniques to optimise textile fibers
- ✓ **Repair, recycle, upcycle**
- ✓ **Conversion into construction materials:** Fibers can be used for valuable construction materials, such as insulation, acoustic panels and ceiling boards
- ✓ **Conversion into home textiles:** Fibers can be recycled into non-wearable textile items, such as pillows, bedsheets and duvets, taking advantage of the competitive price of recycled textiles compared to virgin fibers in Kenya



Biohazardous waste

SUB-SECTOR OVERVIEW



88,000 tons annually, including infectious waste, sharp waste, anatomical waste, hazardous chemical waste, genotoxic waste, pharmaceutical waste, radioactive waste, pressurised containers and waste with high concentrations of heavy metals



Avoids soil, groundwater and other waste contamination by pathogens and toxic substances



Specific regulations for biohazardous waste, including requirements to segregate it from other types of waste, which is not respected



5 businesses

IDENTIFIED BUSINESS MODELS

Business model	Illustrative business	Description
Prevention of sanitary waste	Genesis Care 	Provides an incinerator to dispose of used sanitary towels by electrically converting them into harmless sterile ash
Safe disposal of hazardous waste	Tranbiz Waste Solutions 	Provides hazardous waste management solutions certified by all leading agencies



SUB-SECTOR OPPORTUNITIES

Waste prevention and disposal

- ✔ **B2B servicing:** With growing regulations in Kenya, there is an opportunity to offer waste management services and training to businesses producing biohazardous waste to ensure their compliance
 - ✔ **Safe waste management:** New incineration facilities meeting international standards are required. PPPs could be relevant to tackle the problem
-

Waste treatment

- ✔ **Treatment of toxic substances:** Contaminated material (such as plastic) could be treated to eliminate toxic and bacterial substances and become recyclable

E-waste

SUB-SECTOR OVERVIEW



51,000 tons annually



Collection primarily occurs through collection points and door-to-door pickups facilitated by the informal sector, which retrieves valuable materials from collected items



Avoids soil, groundwater, and other waste contamination by pathogens and toxic substances reduces pressure on rare earths and other resources needed to produce electronics





A National E-waste Management Strategy drafted in 2019



8 businesses

IDENTIFIED BUSINESS MODELS

Business model	Illustrative business	Description
Collection and recycling	Weee Centre 	Provides collection and circular management of e-waste to organizations, companies, and the general public
Provision of spare parts for repair shops	Revivo Kenya 	Sells spare parts, accessories, tools and refurbished devices through an online marketplace



SUB-SECTOR OPPORTUNITIES

Waste prevention

- ✔ **Industrial processes:** Local equipment manufacturers should ensure that their products are designed to last, be repaired and be recycled

Waste treatment

- ✔ **Design:** Reducing the use of toxic substances in product design, sharing information about devices' environmental impacts and implementing material passports are key strategies to help e-waste recyclers recycle collected waste more effectively
- ✔ **Remanufacturing:** Although local repair shops offer competitive repair services, refurbishing of e-waste remains a largely untapped opportunity
- ✔ **Valuable materials recycling:** Valuable components (such as rare earths) can be retrieved from e-waste and sold to manufacturers

Wastewater

SUB-SECTOR OVERVIEW



Substantial volumes from domestic, industrial, and agricultural sources – amounting to 800 million litres per day from domestic use alone



Avoids that chemicals, oils, and human waste endanger aquatic ecosystems and human life, and helps to conserve water resources



Relatively developed, notably through the Kenya Vision 2030 and the Water Act 2016, emphasising the shared responsibility between the national government and county governments over water services



27 businesses

IDENTIFIED BUSINESS MODELS

Business model	Illustrative business	Description
Water-less toilets	Fresh Life 	Provides non-sewered holistic sanitation services
On-site sanitation services - pit emptying	Sanivation 	Provides on-site sanitation services notably through pit emptying, but also waste-to-value fecal sludge treatment
Bio septic tanks	Septik Active Kenya 	Provides an on-site sanitation solution for people not connected to sewers who do not require pit emptying
Treatment systems and plants	KriDha 	Provides diverse solutions to treat wastewater, including effluents and sewage treatment plants



SUB-SECTOR OPPORTUNITIES

- ✓ **Water efficiency support:** Auditing water consumption and setting up water consumption meters in certain sectors
- ✓ **On-site sanitation:** Emptying, transporting, treating and repurposing waste from domestic, agricultural and industrial sources that are challenging to connect to sewerage systems
- ✓ **Off-site sanitation:** Building required sewage and treatment infrastructures for the 70% of unconnected households as well as plants and farms



Integrated waste management

SUB-SECTOR OVERVIEW



8.8 millions tons of solid waste annually



Avoids soil, water and air pollution, greenhouse gas emissions and resource depletion





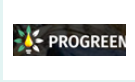


Increasing number of regulations, including EPR regulations, licences, etc., but there is a need for new regulations and more enforcement



16 businesses

IDENTIFIED BUSINESS MODELS

Business model	Illustrative business	Description
Prevention of waste	Green Thing Kenya 	Sells products that minimise waste such as solid shampoo bars, cotton reusables, etc.
Smart bins	T-Bin 	Provides solar-powered segregated waste bins, which indicate when they are full
Collecting, sorting, and recycling/recovery	Takataka Solutions 	Collects, sorts and recycles/recovers all types of waste from residential, commercial and industrial clients
IoT tools to link and educate stakeholders	WasteSwift 	Improves the process by connecting stakeholders in the value chain and educating them on best WM practices
Conversion into energy	Progreen Innovations 	Converts plastic, organic and paper waste into polyPetrol and polyDiesel



SUB-SECTOR OPPORTUNITIES

- ✓ **Resource efficiency support:** Data tools and auditing services to identify waste-generating processes, design waste management strategies and comply with regulations
- ✓ **Training:** Training on the EPR regulations, incentives for circular practices and responsible waste practices
- ✓ **Collection:** Expanding waste collection to rural areas and underserved urban areas (including slums)
- ✓ **Segregation:** Designing trucks and bins that allow users and pickers to segregate waste at source to avoid waste cross-contamination and maximise recycling
- ✓ **Organisation:** Advanced tracking systems and the integration of Geographic Information Systems (GIS) to optimise waste collection and fleet management
- ✓ **Sorting:** Automated sorting technologies to improve treatment efficiency
- ✓ **Formalisation:** Integrating and training informal workers in integrated waste management services to help businesses tap into their knowledge of waste sourcing and segregation



Assessment of the opportunities across sub-sectors

The 24 interviews conducted with businesses, financiers and enterprise support organisations (ESOs) and the secondary research undertaken for this study have highlighted five main criteria that can be used to assess the level of opportunity in each sub-sector:

- **The potential amount of waste to address (through reduction, recycling or reuse):** The volume of waste to treat and repurpose varies across the different sources and materials.
- **The environmental benefits of recycling:** By assessing the virgin resources and energy used and the pollution and GHG emissions generated in the production of one ton of virgin material compared with one ton of recycled material.
- **The complexity of treatment:** The cost associated with setting up the initial infrastructure for recycling or recovery, the complexity of sorting or treating the waste, and the potential precautions needed to deal with toxic substances.
- **Regulatory maturity and enforcement:** Regulations drive the demand for waste management services and recycled material. Their maturity and level of enforcement vary greatly across the different types of waste.
- **Entrepreneurship maturity:** The number of businesses in each sub-sector, their levels of maturity and the amount of investment received.

According to this research and the various stakeholders interviewed, the waste management sub-sectors with the highest opportunities are plastic waste, wastewater, organic waste and integrated waste management. The other high-potential sub-sectors are e-waste and biohazardous waste. The sub-sectors with lower opportunities are paper and cardboard waste and textile waste.

Sub-sector	Amount of waste	Environmental benefits	Complexity	Regulatory maturity	Sub-sector maturity
Organic	High	Medium	Low	Medium	Medium
Paper and cardboard	High	Low	Low	Low	Low
Plastic	High	High	Medium	High	Medium
Textile	Medium	Low	Medium	Low	Low
Biohazardous waste	Low	High	High	Medium	Low
E-waste	Low	Medium	High	Medium	Low
Wastewater	High	High	High	Medium	Medium
Integrated waste management	High	High	High	Medium	Medium

Figure 9 – Mapping of waste sub-sectors in Kenya by factors impacting opportunities

Following this assessment, investment guides have been created to deep dive into the highest opportunity sub-sectors identified above. The four investment guides provide further information on trends, opportunities, policies and challenges in the plastic waste, wastewater, organic waste and integrated waste management sub-sectors. They also include further details on the main identified business models and their financing needs, alongside case studies of businesses that have achieved success using those models.



INVESTMENT LANDSCAPE ASSESSMENT

Financing needs for waste management and circular business models

Waste management businesses at all stages of maturity generally require significant investments to cover capital expenditures (CapEx). These include investments in infrastructure, equipment and technology to expand recycling and waste management operations. Furthermore, regulatory requirements increase these upfront costs, as companies need to obtain licences and pay fees to operate in the sector or expand into new counties.

In addition to investments to cover upfront costs, recycling companies also require significant working capital to operate. Although timelines vary depending on the business model and waste recycling chain, businesses require about four to five months to collect, treat and recycle waste and to transport the recycled material to off-takers before receiving payments. Companies, therefore, need capital to cover labour and collection costs as well as the overheads that they incur during that timeline.

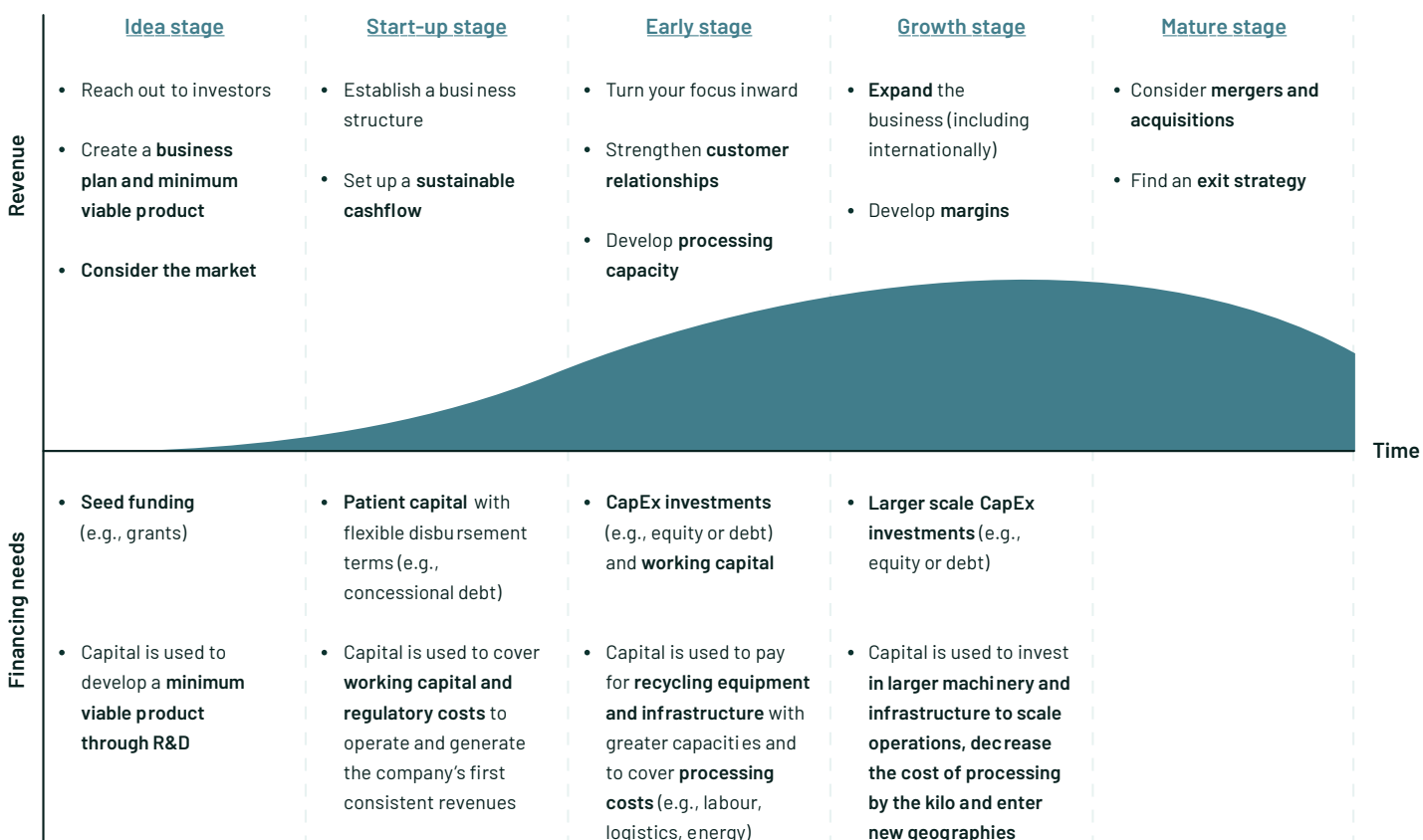


Figure 10 – Mapping of businesses’ financing needs across revenue growth stages



Key financiers and available financing instruments for waste and circularity businesses

83 financiers active in the waste and circularity sector in Kenya were identified in this study, encompassing commercial investors, corporate investors, impact investors and funds, non-profit funds and organisations, development finance institutions (DFIs), non-governmental organisations (NGOs), development agencies, foundations, crowdfunding platforms and accelerators.

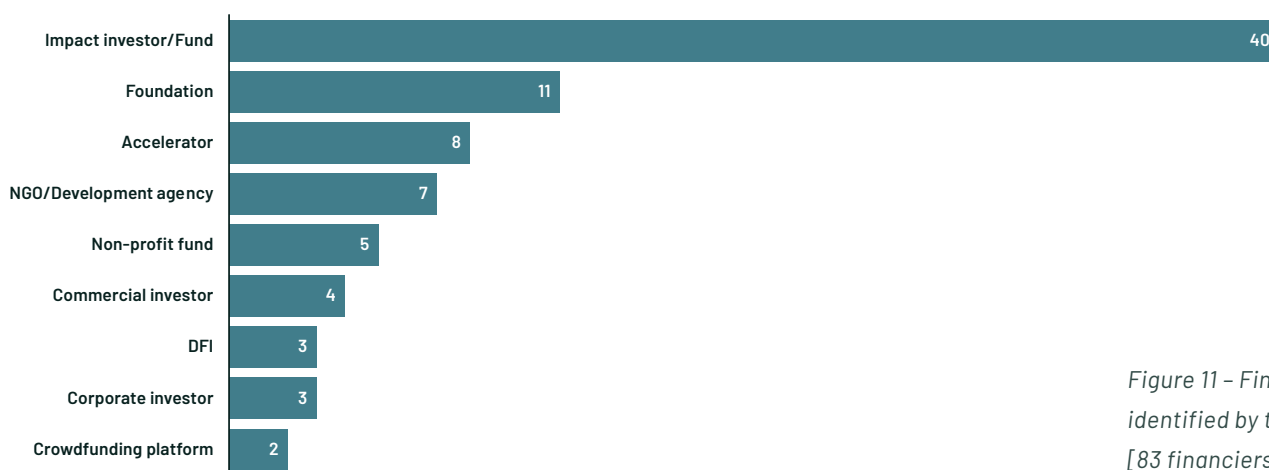


Figure 11 – Financiers identified by type, 2024 [83 financiers]

Most investments in the sector have been provided by impact investors. They are typically willing to provide capital with more concessional terms (often with lower interest rates, longer tenors or flexible disbursement schedules), including to earlier-stage companies, to promote economic, social and/or environmental impact. Foundations' investment arms, DFIs and non-profit investment funds have also played a key role in the development of the sector, providing technical support and patient investments (sometimes combined with grants) to high-impact companies and public projects.⁴⁹ Commercial investors (including banks) are yet to invest significantly in the sector as they focus on mature businesses with higher liquidity and leverage.

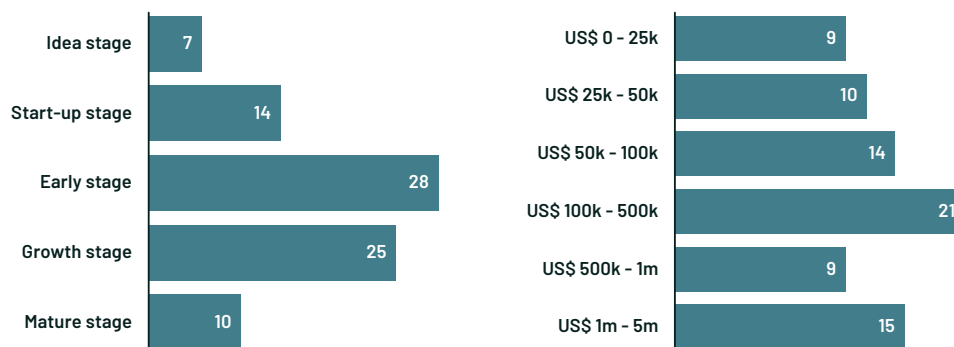


Figure 12 – Financiers by stage of business maturity and ticket size offered [83 financiers]⁵⁰

49. DFIs also provide investments via local commercial banks and investment funds to finance small and medium enterprises (SMEs) as the ticket size required by businesses is often too small for direct investments (Athena Infonomics & Open Capital Advisors, Urban Sanitation Market Overview: Kenya, 2020).

50. This graph shows the ticket sizes offered by identified financiers that made investments in the sector but does not reflect the amounts they effectively invested in waste and circularity businesses in Kenya. In addition, financiers offering investment amounts encompassing several ticket size ranges are counted in several categories.

There is a higher availability of smaller ticket financing (>US\$ 50–500k) for early- or growth-stage businesses compared to larger ticket sizes to finance later growth stages, despite growing demand from businesses. Although 15 investors offering ticket sizes above US\$ 1 million have already made investments in the sector, transactions of that size have been rare. Only a few companies, such as Olivado, Mr. Green Africa, Sanivation, Takataka and Sanergy, have managed to secure investments above US\$ 1 million. This reflects the high availability of financing for early-stage companies and the lack of financing for growth-stage companies.

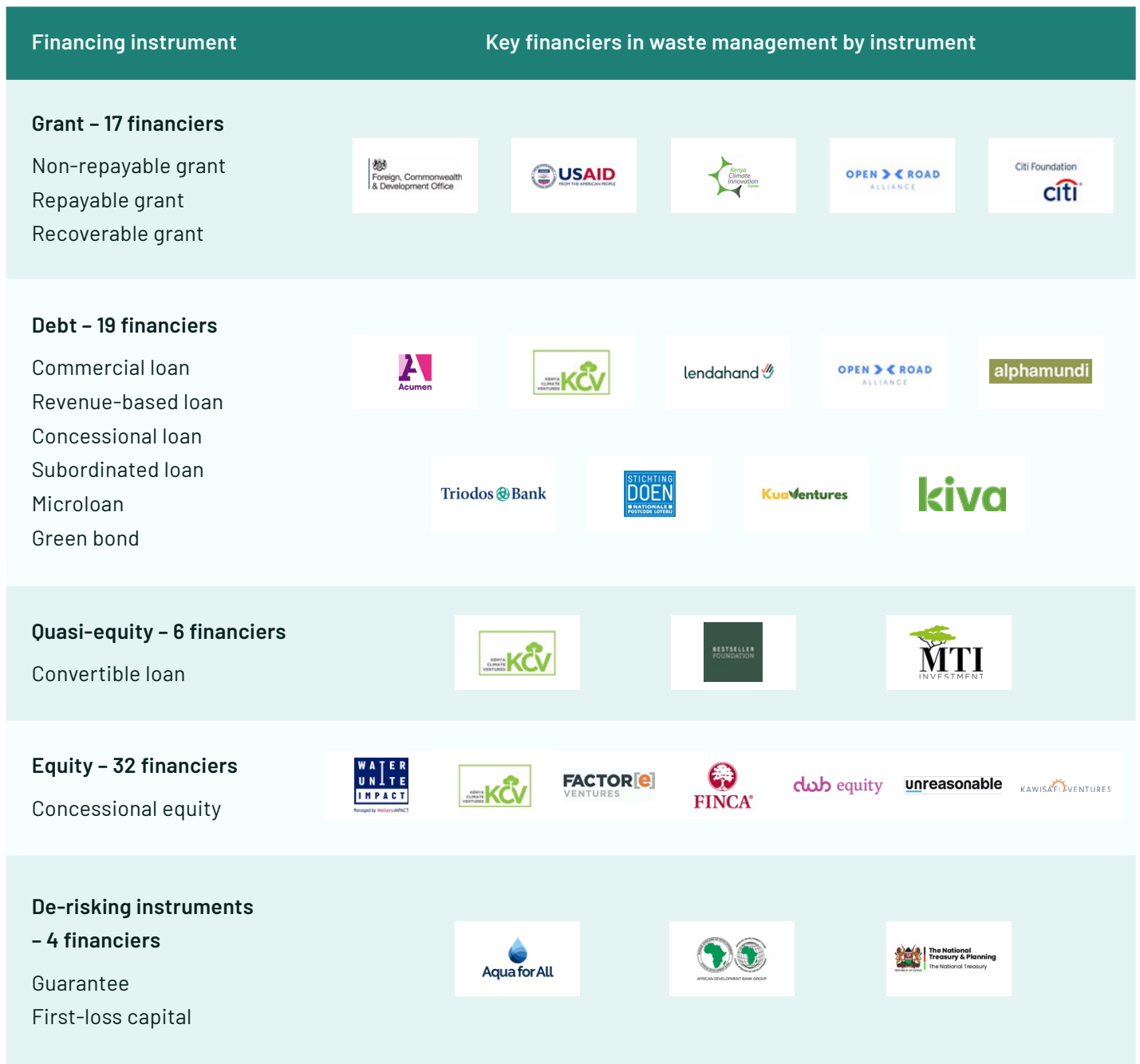


Figure 13 – Available financing products for waste management and circular companies in Kenya⁵¹

51. The number of financiers for each type of instrument is non-exhaustive as some data were missing. In addition, some financiers offer several types of instruments and are, therefore, counted in each category.



Assessment of gaps in the investment landscape

The waste management and circularity sector in Kenya faces significant financing gaps across all business stages.⁵² Purely commercial investments have been rare, so most of the instruments used to finance the sector have been grants, concessional debt and concessional equity. As waste management businesses take a long time to reach profitability and scale, or repay large CapEx investments, commercial investors with larger ticket sizes and higher return expectations have rarely entered the sector. It should also be noted that although circularity-focused funds have been launched in other parts of the globe, no such fund has been established in Kenya.

Traditional investors, whose presence would significantly increase the available pool of funding for these missing segments for waste and circularity businesses, still tend to perceive too much risk in the sector. In addition to some of the challenges to entrepreneurship in the sector described in the previous sections, investors often do not have enough track record and staff with experience in the sector to understand the various business models and sub-sectors. They are also deterred by the lack of disruptive innovations as businesses often provide the same technologies,⁵³ the long timeline for businesses to scale and become profitable, issues related to waste workers' rights and protection, and the lack of standardised data and transparency on financial investments and returns. Additionally, the unpredictable policy framework negatively affects investors' trust in the sector.⁵⁴

Finally, it should be noted that most companies that have managed to raise funding are foreign-owned. This gap may be due to a lack of networks and knowledge of investors' jargon and expectations among local entrepreneurs.⁵⁵

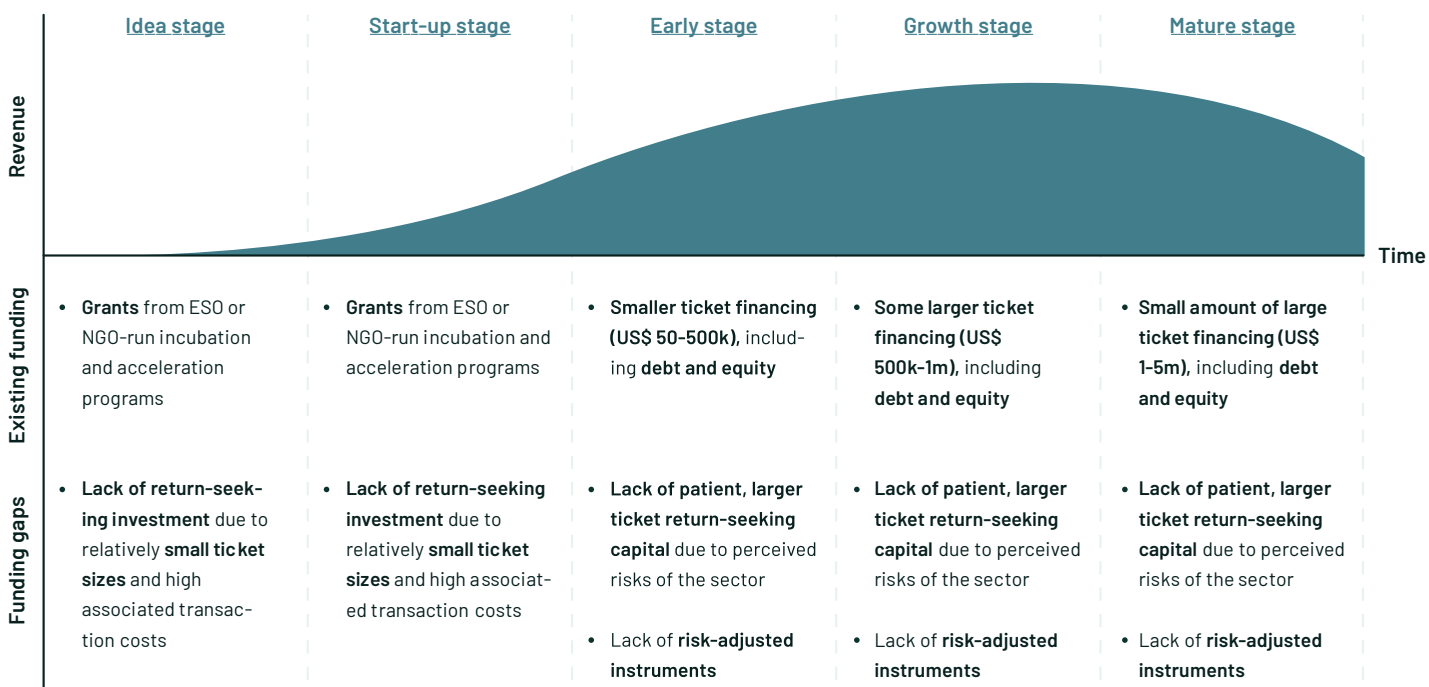


Figure 14 – Mapping of existing funding and funding gaps across businesses' revenue growth stages

52. ANDE, Green Entrepreneurship in Kenya, 2023

53. Athena Infonomics & Open Capital Advisors, Urban Sanitation Market Overview: Kenya, 2020

54. Hagos et al., Investment Climate Assessment for Circular Bioeconomy – Review of National Policies and Strategies in Kenya, 2022

55. Key informant interview with investor



Policies and laws related to investments in Kenya

The following policies and laws act as catalysts and barriers to investing in the Kenyan economy.

CATALYSTS TO INVEST IN KENYA

Fully liberalised	Foreign investors can invest up to 100% ownership, except in sectors that can pose a risk to the country. Moreover, there are no restrictions on joint venture.
Fiscal incentives	There are VAT exemptions granted to donor-funded projects and diplomats upon National Treasury recommendation.
Risk mitigation	There are guarantees from the National Treasury & Economic Planning, a mechanism of shared risks from the Government of Kenya and seven banks (Absa Bank, Cooperative Bank of Kenya, Credit Bank, Diamond Trust Bank, KCB Bank, NCBA Bank, Stanbic Bank) that aim to help Micro, Small and Medium Enterprises (MSMEs) access credit.

BARRIERS TO INVEST IN KENYA

Minimum ticket size	Minimum foreign investment threshold of US\$ 100,000. Minimum local investment threshold of US\$ 10,000
----------------------------	---

Figure 15 – Catalysts and barriers to invest in Kenya⁵⁶

56. KenInvest, Kenya Investment Policy, 2019; Kenya Investment Authority, n.d.; National Treasury & Economic Planning, n.d.

Potential blended finance solutions to mobilise investment in the sector

Due to the limited availability of capital in the sector, risk mitigation and innovative finance instruments could be leveraged to mobilise investments in waste and circularity businesses. Blended finance instruments could reduce the perceived and real risk of the sector, thus catalysing additional private investment and developing a track record of transactions. Although development funding has been extremely useful to finance waste management projects and grow private sector initiatives, it could also be strategically leveraged to crowd-in further investments and address some of the identified financing gaps.



SUPPORT MECHANISMS

Support mechanisms, typically funded through grants, can play a critical role in growing the sector. Support mechanisms include technical assistance funds, design-stage grants and early-stage incubation. These can be used to uncover new business models, particularly in underserved sub-sectors, and build local entrepreneurs' capacity to engage investors and strengthen their business models. Finally, support mechanisms could also be leveraged to foster innovations that formalise the informal sector, which dominates waste management in Kenya.

Examples include incubators such as E4Impact and Close the Gap which have developed dedicated acceleration programmes to support companies in the waste management and circularity sector.



CONCESSIONAL FUNDING

Concessional capital can also be strategically leveraged to transition this sector from grant dependency to commercial investment. Concessional funding includes zero-interest loans or below-market debt and equity. These can help companies shift from grants to returns-based instruments, potentially from DFIs, NGOs and development agencies. Many SGBs in the sector have benefited from below-market funding from funders such as the Global Innovation Fund, the DOEN Foundation and Kiva.



RISK MITIGATION INSTRUMENTS

Risk mitigation instruments could play a pivotal role in de-risking the sector in the eyes of investors to crowd-in additional capital. Risk mitigation instruments include first-loss capital, guarantees and funds with blended capital structures that help meet the risk-return profiles of a variety of investors, such as DFIs, foundations, pension funds or banks. Such structures can improve the risk-return profile of an investment opportunity for commercial investors, in turn increasing access to capital for early-stage enterprises in the waste and circularity sector in Kenya. Aqua for All supported the launch of several blended finance structures with Kenyan banks (including Sidian Bank and Family Bank) to fund water and sanitation businesses in Kenya.

Additionally, guarantees can be used to de-risk investments and catalyse funding from commercial investors by guaranteeing payments up to a specified amount in the case of default or non-performance. However, some interviewees suggested avoiding direct guarantees to companies as they can create dependence on concessional financing, hinder scalability and prevent increased investor confidence. In 2023, the African Guarantee Fund and Aqua for All partnered to provide local private banks with increased access to guarantees to provide financing to the water and sanitation sector in Africa (including Kenya).



RESULTS-BASED FINANCING

Results-based financing incentivises businesses to achieve pre-agreed, measurable impact targets. It increases the focus on results instead of activities, thereby increasing flexibility in delivery approaches, encouraging innovation and incentivising a continued focus on impact. Mechanisms range from social success notes – where investors are paid a premium “outcome payment” if the business meets predetermined impact metrics – to impact-linked loans – where the loan terms are reduced if impact targets are met.

Additionally, impact bonds have also been leveraged to grow the waste and circularity sector in emerging markets. Examples include the US\$ 2 million impact bond between Unilever Nigeria, Bridges Outcomes Partnerships and the social enterprise Wecyclers on a plastic waste management initiative in Nigeria which aims to create more than 700 waste-sorter jobs, help collect up to 30,000 tons of plastic waste over five years and improve the income of thousands of sorters, who will earn 25% more.⁵⁷

57. The Financial Times, Investing for Impact: What Will It Take?, 2023



CLIMATE FINANCE

Climate finance is increasingly being leveraged as an additional revenue stream to support waste and circularity businesses. Instruments include plastic and green bonds, carbon financing, and carbon credits.

Plastic bonds are a new instrument allowing plastic recycling companies to raise investments.⁵⁸

Although these have taken several forms, they generally combine debt provided to plastic recycling companies by investors and off-take agreements for plastic credits between the recycling companies and corporations. Examples include a US\$ 100 million Citibank and World Bank plastic bond.

Carbon financing has been leveraged by a limited number of companies (notably waste-to-energy companies) to pre-finance the scale-up of their operations. Waste recovery solutions are eligible for carbon credits when they can prove the additionality of their carbon impact (e.g., proving that carbon emissions would have been emitted in the absence of their product).⁵⁹

58. In Ghana and Indonesia, investors receive annual coupons linked to the issuance of plastic and carbon credits generated by the projects.

59. Under Article 6 of the Paris Agreement, countries can voluntarily cooperate with each other to achieve emission reduction targets set out in their National Domestic Contributions. Not all countries are eligible, but Kenya is.

CONCLUSION

The waste management and circularity sector in Kenya presents a compelling investment landscape characterised by emerging opportunities and driven by rapid urbanisation, economic growth and increasing waste generation.

The sector offers numerous avenues for investment, innovation and growth to tackle the substantial challenges in waste management in the country, including high levels of mismanaged waste and limited recycling capacities. Despite the development of the sector, start-ups are yet to fill the gap left by public sector inaction and require significant financial support and investments.

Despite the challenging entrepreneurial environment in this sector, investors and entrepreneurs have started proving the commercial viability of several business models in organic, plastic, wastewater and integrated waste management. While these business models do not offer the steep growth curve often expected by investors, they have met the expectations of a growing number of financiers eager to provide long-term capital to companies in the sector due to the high social and environmental impact potential.

However, the sector faces notable financing gaps, particularly in early- and growth-stage funding. While the investment track record in the sector is growing through increased investment activity, mitigating some of the sector's perceived and actual risks through blended finance solutions can help catalyse further private capital and support growth.

By leveraging supportive regulatory frameworks, promoting local entrepreneurship and implementing innovative financing mechanisms, investors can contribute to transforming Kenya's waste management landscape. These efforts will not only yield significant environmental and social benefits but also drive economic growth and create sustainable investment returns.

This introductory guide is supplemented by an investment guide which highlights strategies for investing in the sector. Further sub-sectoral investment guides deep dive into the highest opportunity sub-sectors identified through this study: plastic waste, wastewater, organic waste and integrated waste management. The overall investment guide provides a detailed picture of the sector's financing needs, key success factors, investment landscape and opportunities for innovative finance. It also highlights successful investment funds in the sector. The additional investment guides provide further information on trends, opportunities, policies and challenges in each of the highest opportunity sub-sectors., They also provide further details on the main identified business models and their financing needs and case studies of successful businesses in each sub-sector.



APPENDIX

Criteria	Sub-criteria	High	Medium	Low
Amount of waste	Amount of waste generated	More than 500K tons per year	Between 150K and 500K tons per year	Less than 500K tons per year
Environmental benefits	Reduction in GHG emissions	High amount of GHG emissions saved per ton of waste treated	Medium amount of GHG emissions saved per ton of waste treated	Low amount of GHG emissions saved per ton of waste treated
	Reduction in resources used	High amounts of natural resources for production or for alternatives	Medium amounts of nat. resources for production or for alternatives	Low amounts of natural resources for production or for alternatives
	Reduction in pollution of air, water, and soils	High amount of pollution during production and/or disposal	Medium amount of pollution during production and/or disposal	Low amount of pollution during production and/or disposal
Complexity	Collection, treatment, and recycling process set up costs	High costs associated for infrastructure and technology	Medium costs associated for infrastructure and technology	Low costs associated for infrastructure and technology
	Collection, treatment, and recycling process complexity	Skills and logistics required are complex to acquire	A few skills and logistics are required and no toxic substances	Little skills and logistics required and no toxic substances



Regulatory maturity	EPR mandate	EPR mandate starting to be respected and PROs in place	EPR mandate starting to be respected but no PROs in place	EPR mandate not respected and no PROs in place
	Subsidy availability	Subsidy available	—	No subsidy available
	Other regulations and policies	Specific policy or regulation	Provisions in general policies	Not addressed in current policies
Sub-sector maturity	Number of businesses	More than 30 businesses identified	Between 15 and 30 businesses identified	Less than 15 businesses identified
	Investable startup pipeline	Existence of profitable businesses	No profitable business but close to achieve profitability	No profitable business and far from achieving profitability
	Level of business maturity	More than 10 businesses entered their growth stage	Between 5 and 10 businesses entered their growth stage	Less than 5 businesses enter their growth stage



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