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# Waste-to-Value Startup Ecosystem

## OPPORTUNITIES FOR CIRCULAR APPROACHES IN EAST AFRICA

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# EXECUTIVE SUMMARY

**Sub-Saharan Africa generated an estimated 174 million tonnes of waste in 2016, at a rate of 0.46 kg per capita per day, and is projected to be the world's fastest-growing waste-generating region by 2050.** [1] The continent finds itself struggling to achieve adequate waste management and disposal practices to keep up with the growing population and production. Waste management is, therefore, a key to the socioeconomic and environmental challenges affecting most countries on the continent.

**Traditional recycling and disposal methods have proven to be inefficient, leading to calls for a stronger focus on circularity and resource efficiency.** Governments in the region have also paved the way for circular models by increasing collaboration with the private sector and creating supportive regulations. This paper explores the concept of circularity in the waste ecosystem of East Africa by looking at startups involved in the sector, and the intersectionality of waste with other sectors, namely energy, agriculture, technology, construction, and clothing.

Based on our analysis, the waste-to-value startup ecosystem in the region is still in its nascent stages. A majority of the startups are based in Kenya, have only been in operation for three years, and are at either pre or post-revenue stage, but far from breaking even. However, there are a few other growth-stage companies within the sector that have been in operation for longer. For the purpose of this paper, we have focused on early-stage startups in the sector.

**The supporting ecosystem for these startups is also starting to grow, driven by the increase in targeted investment into the sector.** Some enterprise support organisations (ESOs) have started to integrate waste as a focus sector, with others creating waste-specific incubation and acceleration programmes. There has also been an increase in the formation of national and regional advisory bodies to aggregate startups in the sector.

This white paper provides an overview of the waste sector in East Africa with a focus on waste-to-value startups. The findings highlights gaps, opportunities, and potential solutions that could accelerate the growth of the ecosystem.



Startup: Zijani, collection of waste cooking oil  
Photo credit: Africa Reframed  
Property of BESTSELLER Foundation



# METHODOLOGY

This white paper presents both quantitative and qualitative analysis of the ecosystem of early-stage waste-to-value enterprises in East Africa.

The paper defines waste-to-value enterprises as early-stage enterprises that have adopted circularity in their business models. While this white paper focuses specifically on startups in the waste-to-value sector, there are other growth-stage companies in the sector that are not included in this analysis but which play a significant role in the sector.

## Research Methods:

### **a) Literature review & secondary research:**

Secondary research was undertaken at the onset of the study to (i) provide a macro-level understanding of the waste-to-value ecosystem and the waste management process in East Africa, (ii) evaluate existing research on the waste-to-value startups in East Africa and understand the key gaps and drivers of the sector, and, finally, (iii) understand the active players in the supply, demand, and ecosystem support level of the waste-to-value ecosystem.

**b) Quantitative analysis:** A database of 249 early-stage waste-to-value enterprises was compiled and analysed. Information such as the geographical location, stage of operations, and business model of the enterprises was analysed.

## Limitations:

### **Non-exhaustiveness of the waste-to-value startups:**

Although this white paper covers a wide variety of waste-to-value startups, the database may be non-exhaustive as it only includes startups that Intellecapt has worked with, supported, and identified through BESTSELLER's waste-to-value accelerator and the Sankalp Awards. However, we believe that the sample size is representative of the universe of early-stage waste-to-value enterprises in East Africa. As such, we are confident that the information collected and analysis presented in this paper represent reliable trends and provide sufficient guidance for investors and entrepreneurs.



Startup: Yo-Waste  
Photo credit: Africa Reframed  
Property of BESTSELLER Foundation

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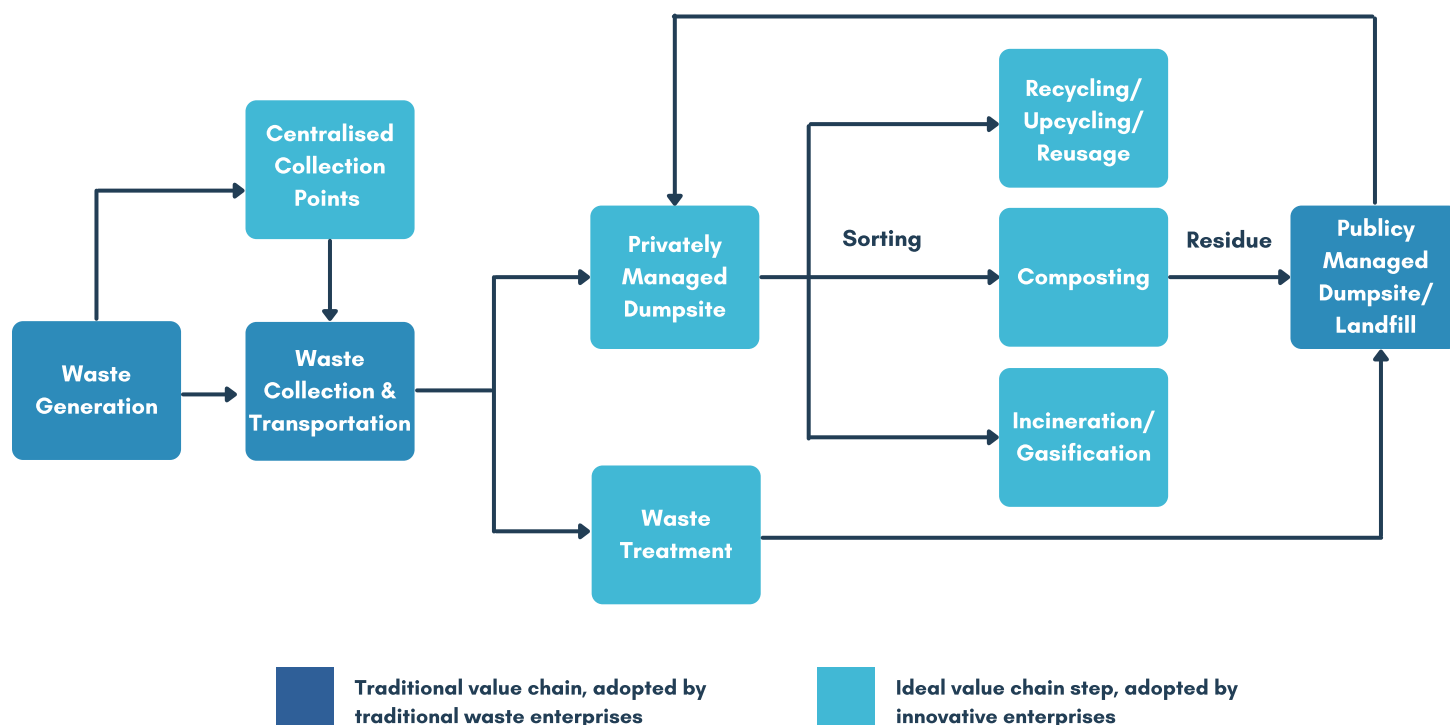
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# SECTION 1: OVERVIEW OF THE WASTE SECTOR IN EAST AFRICA

## The waste management process and involved stakeholders [2]



**Waste generation:** This refers to the production of organic and non-organic waste by individuals or institutions.

**Centralised collection points:** These are temporary collection points such as community trash bins or sites where waste is stored while awaiting transportation. This is done by individuals or caretakers responsible for collection.

**Waste collection and transportation:** Waste is collected by collectors and transported to the disposal or treatment area.

The collection is carried out either by local governments (municipal counties) or private players (waste management companies). Waste is then transported through trucks. Informal waste collectors are also involved in waste collection, and they transport using carts (Mkokoteni) or, in some cases, trucks.

**Waste treatment:** Some of the waste collected is taken to treatment centers. This is particularly useful for medical waste and wastewater. Treatment is either done by privately hired companies at external sites or carried out by the various institutions within the compound.



**Privately managed dump sites:** Some private enterprises (commercial and social) carrying out collection activities have their own privately managed dump sites where waste is aggregated and sorted before being taken for recycling and other treatment processes.

**Recycling/Upcycling/Reuse:** At this stage, enterprises use materials sorted from the dump site for recycling processes. This includes further sorting, cleaning, and crushing into pellets. Most enterprises have agreements with other industry stakeholders who take these recycled materials for use as raw material. Some enterprises also upcycle the waste material themselves.

**Composting:** Some enterprises involved in waste collection and dumping also sort organic waste for composting. Composted waste material is sold to third parties, such as animal feed companies.

**Incineration/Gasification:** Some private enterprises incinerate certain waste types, such as medical waste, for the final disposal.

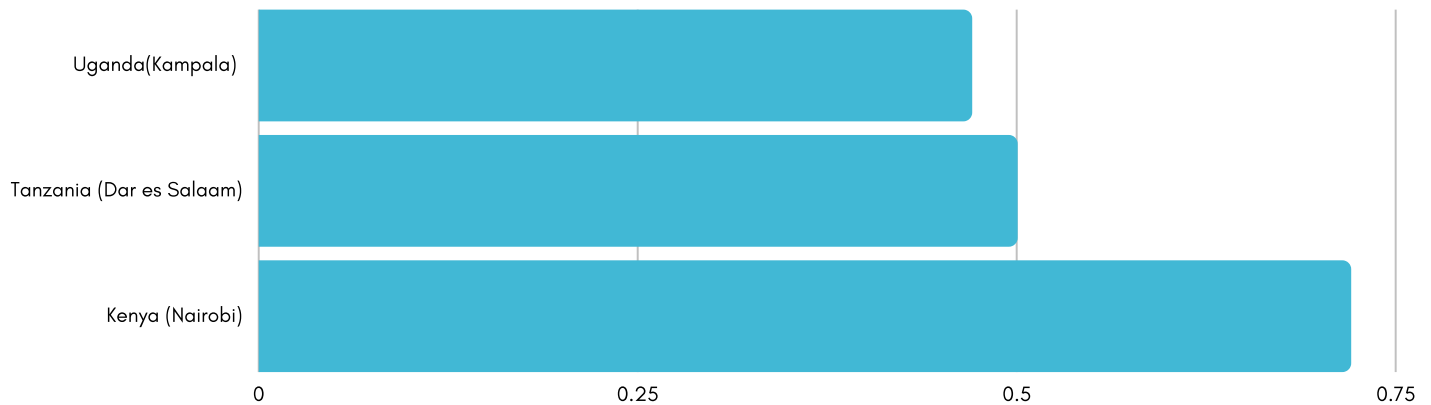
**Publicly managed dump sites:** Most of the region's waste is disposed of by dumping in government-allocated plots of land (landfills) or informal landfills. These landfills are the final disposal ground for most waste, which is burned. In other cases, there are waste pickers located at these dump sites who collect, sort, and transport waste to waste-to-value enterprises that require raw materials.



Photo by **Chauldry Agho** on Unsplash

**Figure 1:**

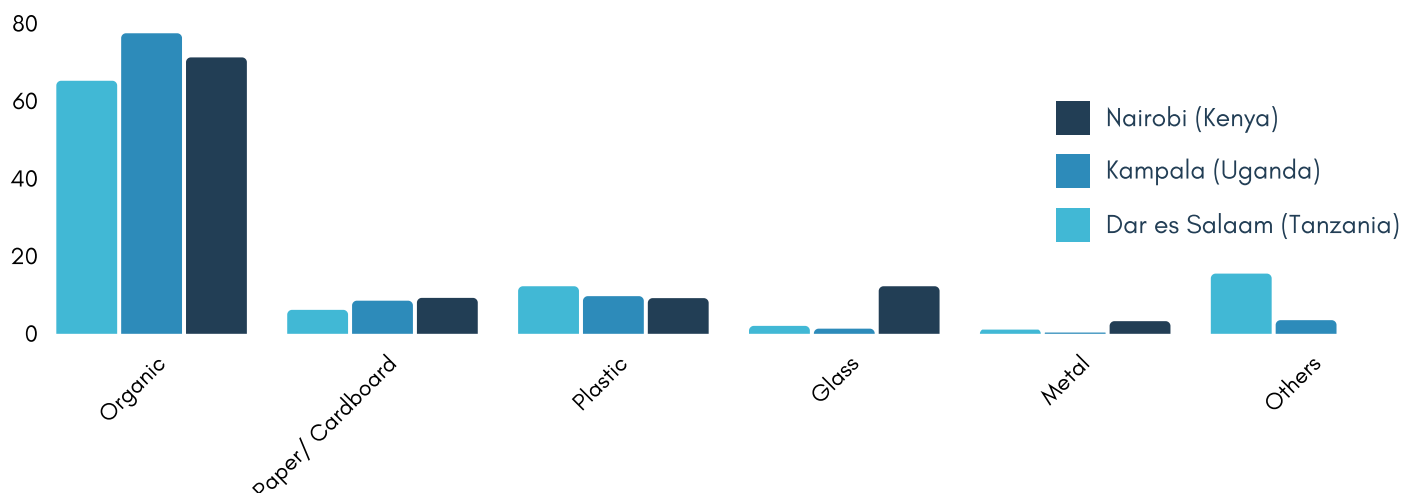
Per capita waste generation in major East African cities in 2016 (kg/capita/day) [3]



In 2016, sub-Saharan Africa generated an estimated 174 million tonnes of waste, at the rate of 0.46 kg per capita per day, and is projected to be the world's fastest-growing waste-generating region by 2050.[1] In East Africa, the amount of waste generated exponentially exceeds governments' capacity for collection and disposal. Given the projected increase in population, the situation will be exacerbated in the future.

**SUB-SAHARAN AFRICA IS PROJECTED TO BE THE WORLD'S FASTEST-GROWING REGION FOR WASTE GENERATION BY 2050**

Unused vegetables and food leftovers – organic waste – form the bulk of waste generated in all the urban cities across the region, accounting for over 60% of waste. More recently, especially with the growth in population and urbanisation, other forms of waste, such as plastic, electronic, solar, and paper waste, have also increased (figure 2). The region's waste sector has had a centralised structure for collection and disposal, with the state or national government being the key stakeholder. However, this system is slowly evolving to include decentralised and blended management systems with the private sector.

**Figure 2:** Waste composition (as a % of waste generated) in major East African cities [3]



For instance, the waste sector in Tanzania and Kenya has been devolved from the national government and is now managed by the local county governments. However, most counties in Kenya lack adequate infrastructure, governance mechanisms, and dedicated funding for effective, sustainable waste management. This has led to a rise in the number of informal waste pickers whose activities are usually unregulated. Similarly, in Uganda, the waste sector is devolved, and waste management services are outsourced to local private companies. However, the contractual arrangements between the Kampala City Council and private waste companies have their challenges, namely dependency on casual labourers who often lack required resources and technical expertise.

Devolution and outsourcing of waste management have also provoked struggles between different levels of local government for control over tendering and resources. [4] The waste sector in the region faces challenges across the value chain that hinder proper waste collection and management. An estimated 1,500 tonnes of waste are generated in Kampala per day, yet only 50% of the waste is collected. [5] In Tanzania, more than 10,000 tonnes of municipal solid waste are generated daily countrywide, yet about 80% of the solid waste is uncollected. [6]

The most common disposal methods for the waste include landfills, burning, and illegal treatment, while very little is reused or recycled. The use of landfills is the most prominent solid waste management system. The greatest challenge with landfills is overutilisation, given the rapid population growth. For instance, the Dandora dump site in Nairobi was deemed full in 2001 but continues to receive over 850 tonnes of solid waste per day and now occupies 30 acres of land.

Many hazards arise from the use of improper methods to dispose of waste in the region:

- **Illegal burning of waste**, which is common in many cities in East Africa, is one of the leading sources of air pollution after transport and industry. [7]
- **Dump sites and landfills have an adverse impact on the air quality, land, and sanitation of communities** surrounding them. Additionally, security issues are also rampant due to the existence of cartels and gangs working in such landfills. [8]

Recycling is done to a minimal extent in the region. For instance, in Nairobi, where 93% of the waste is potentially recyclable, only 5% is recycled and composted. [9] Public and government players lack adequate resources to carry out recycling, while participation by the private sector has been limited. The scenario is slowly changing as there has been increased stakeholder involvement in proper waste management practices. It is due to several reasons, including the implementation of extended producer responsibility (EPR) policies. Under EPR policies and regulations, producers of certain waste must take responsibility for the proper disposal of post-consumer waste, which encourages end-to-end waste management. [10] These policies have received implementation support from private sector bodies and organisations, which consequently increases the demand for waste recyclables and companies working in the space.

This demand is, however, largely underserved, as industries face the challenge of sourcing clean inputs. This is because the recovery of recyclable material is not institutionalised and is done by informal waste pickers that collect mixed waste, which leads to high contamination levels. [11] In countries such as Rwanda, the lack of official recycling facilities has resulted in the export of its plastic waste to Uganda and Tanzania. [12]



## Key challenges across the waste sector value chain

### 1 WASTE GENERATION



**Increase in the waste generated:** The increase in population, and the proportionate increase in consumption patterns, increases waste generated in the region. If not managed well, this could pose a challenge for waste management.

### 2 WASTE COLLECTION & TRANSPORTATION



**Low coverage of waste collection services:** Inaccessible roads, especially in densely populated areas such as slums, and the inability of BoP consumers residing in these areas to pay for services lead to the limited availability of waste collection services.

**Irregular waste collection:** Inadequate waste transportation trucks, poor scheduling of waste collection and transportation, and low budgetary allocation for operations result in irregular waste collection services.

**Unregulated collection fees:** As the waste management industry regulations are enforced within the formal sector, waste management businesses are forced to charge higher fees for their services in order to be sustainable. Yet, the illegal businesses that are common in the sector avoid these requirements and therefore can afford to charge lower fees. Consequently, it becomes unsustainable for legal startups to operate in markets where the consumers are price-sensitive.

## Key challenges across the waste sector value chain

### 3 WASTE DISPOSAL



**Open and illegal dumping:** Lack of appropriate waste disposal infrastructure leads to open and illegal dumping. Further, the inefficiency of the waste collection service drives the population to dump their waste openly.

**Low compliance with environmental legislation:** This is driven by weak regulatory enforcement and a lack of awareness of relevant legislation.

**Inappropriate siting of a dump site:** Some dump sites are located in close proximity to environmentally sensitive areas, such as residential areas, which leads to conflict with the host communities, who do not accept the sites.

### 4 WASTE TREATMENT



**Limited infrastructure:** East Africa has limited infrastructure and few players involved in recycling waste fractions.\*

**Lack of proper waste-sorting centres:** It is a usual practice for staff on waste collection trucks to sort waste materials on their way to the dump site. This leads to low-quality sorting due to multiple contaminations in the waste.

**Limited market for organic waste:** This is driven by the over-reliance on inorganic fertilisers in the market.

**Limited market for inorganic waste fractions:** Certain waste fractions, such as low-grade plastics, have limited market potential due to the unavailability of recycling industries that use them as raw materials.

\*Waste fraction refers to the classification of waste depending on the type and the properties of the waste. For instance, waste fractions can include paper waste, plastic waste, food & kitchen waste, cardboard, and fibre waste.



Photo by Emmet on Pexels

Governments in the region acknowledge the waste management problem and continue to create and revise various policies to mitigate these challenges. The region is increasingly adopting circular approaches, which are in line with global trends evolving from traditional “take-make-waste” models to more sustainable and circular models. The Rwandan government, for instance, has put in place the National Sanitation Policy Implementation Strategy 2016, aimed at ensuring proper disposal of 80% of waste and a recycling rate for non-organic solid waste of 40% by 2029/2030. [14] Another example is the Integrated Solid Waste Management Plan, a collaboration between the Kenyan government and the United Nations Environment Program, which is designed to raise the collection rate in Kenya to 100% by 2030. [15]

The plastics ban in Kenya and Rwanda has also been a key driver of reducing single-use plastics. Rwanda’s National E-waste Management Policy also aims to ensure proper disposal of electronic waste and has enacted Rwanda’s Green Fund for this. [16] Uganda is on the way to developing similar regulations. However, there is much to be done through private and public sector collaboration along the waste value chain to ensure that countries meet their waste management targets and create sustainable solutions. Various startups have established themselves in the sector to address some of the major waste management challenges, resulting in an increasingly vibrant ecosystem compared to ten years prior.



## SECTION 2: OVERVIEW OF THE WASTE-TO-VALUE STARTUP ECOSYSTEM IN EAST AFRICA

The waste-to-value sector in East Africa is nascent but steadily growing, given the region's increasing focus on circularity. [17] This growth is also driven by an increased number of initiatives designed to catalyse the growth of the waste entrepreneurship ecosystem, including the BESTSELLER Foundation's and Intellectap's Waste-to-Value Accelerator, the [Yunus Environment Hub](#), [UNEP's SWITCH-Africa Green programme](#), [Uganda Green Enterprise Finance Accelerator \(UGEFA\)](#), and [Climate Launchpads](#).

Similarly, many investors in the region are increasingly seeking a pipeline while some have already invested in enterprises within the sector. Investors such as BESTSELLER Foundation, Norfund's EEP Africa fund, Beyond Capital, and DOB Equity have already deployed capital to waste-to-value enterprises in the region. These investors have carved out a focus on waste and circularity enterprises. Additionally, the launch of networks such as the African Circular Economy Network, which support circular approaches, can go a long way toward growing the waste entrepreneurship ecosystem in the region.

The section below presents an analysis of 249 for-profit, early-stage waste-to-value startups from across East Africa. Some of these startups (e.g. Yo-Waste, Gracela Ventures, Zijani, Gjenge, Green Coal, Umuti) have also received financial and/or non-financial support through the Waste-to-Value Accelerator, funded by BESTSELLER Foundation, and implemented by Intellectap Advisory Services.

### Building a circular economy, one investor at the time

"The growth in waste generation in Africa is expected to be so significant that any decrease in waste generation in other regions globally will be overshadowed by Africa. Only 2.4% of waste is currently recycled across the continent. But, the good news is that an estimated 70-80% of waste in the cities is recyclable. The opportunities highlighted in this white paper speak for themselves, and as the BESTSELLER Foundation, we're proud to have invested in six waste-to-value startups over the past ten months, some of which are profiled here.

The Foundation is committed to supporting the growth of waste-to-value startups and the development of a circular economy ecosystem more broadly - to supporting the trailblazers directly but also creating the right partnerships that drive more capital towards the sector.

These partnerships involve creating lifecycle support, such as early-stage seed capital and (unsecured) working capital, supporting different scale-up rounds, and ultimately linking enterprises to (more) commercial investors. One investor cannot play all these roles, and we're excited to be joined by other investors and initiatives who are committed to this vision in 2021 and beyond. As evidenced here, there are literally mountains of wasted opportunities before us."

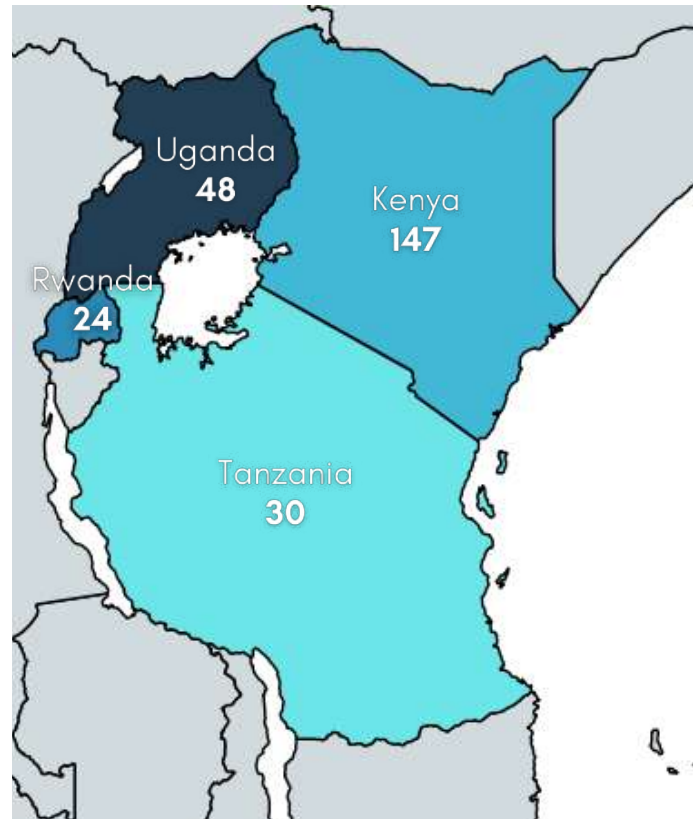
**Jannek Hagen, Managing Director,  
BESTSELLER Foundation**

## Counties of Operations

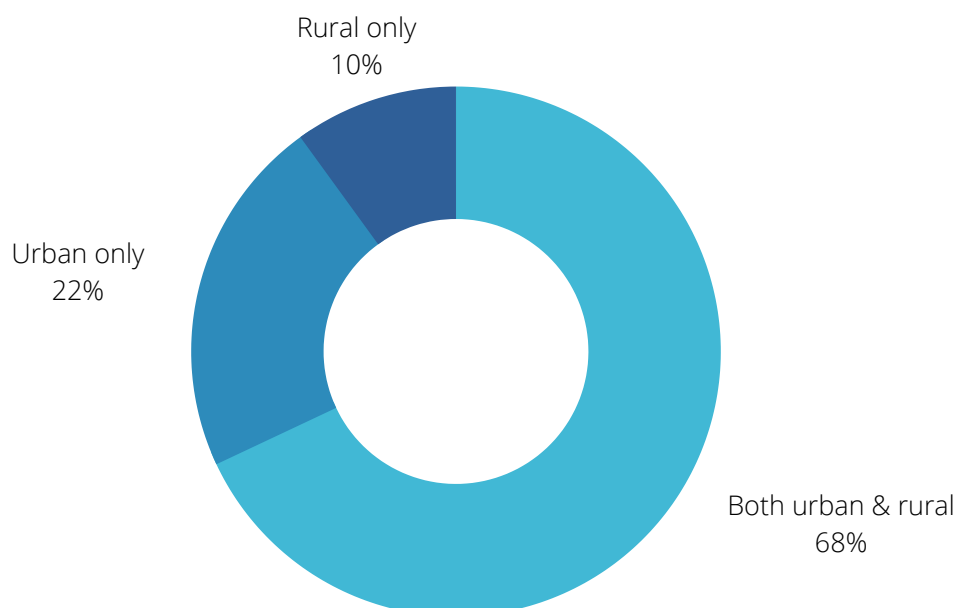
Most startups in the waste management sector within East Africa were founded and have operations in Kenya. [18] This pattern can be attributed to the fact that the country has established itself as an entrepreneurship hub in the region, with a thriving ecosystem for various sectors, including waste. [19] Further, the amount of waste generated in Kenya's urban centres is higher than in other cities in the region, which increases the opportunities for waste enterprises.

Most waste enterprises analysed for this white paper have set up operations in urban as well as rural areas (figure 4). However, there are more enterprises operating only in urban areas than those operating only in rural areas. This is a trend that is common across other sectors, where most enterprises operate in urban centres. It is attributable to the high availability of resources in urban areas, including the number of support organisations, co-working spaces, and other amenities.

**Figure 3:**  
Country spread of waste enterprises in the region  
(N=249)



**Figure 4:**  
Rural versus urban spread of waste enterprises (N=249)

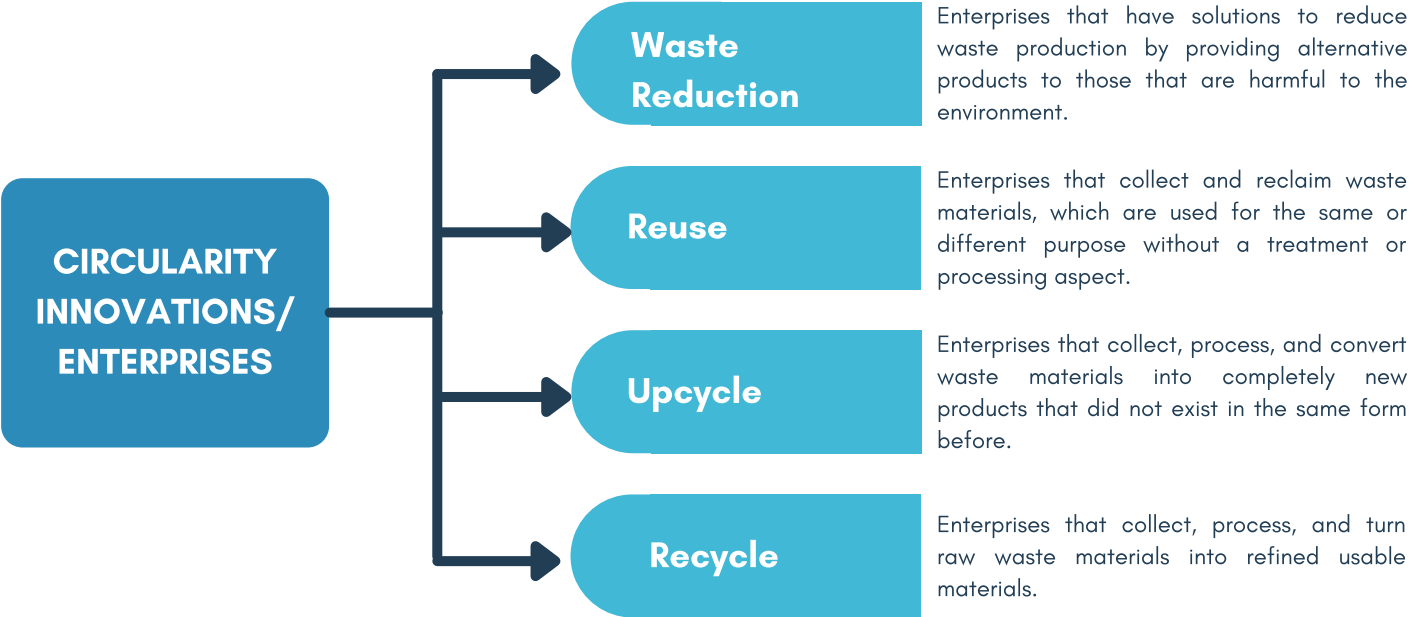




# Types of Innovation

Over the last decade, waste enterprises have adopted different models of circularity that rely on different types of innovation. Based on our analysis, we have identified four innovations through which enterprises can create circularity within the waste sector and have ranked them based on the industry hierarchy framework for zero waste (figure 5).

**Figure 5:**  
Types of circularity innovations in the region





## Types of Business Models

The business models of the circular-model enterprises can be classified according to the different sectors that they intersect with, namely energy, technology, construction, clothing, and agriculture. Below are the five common waste-to-value startup business models we have identified in East Africa.



**Enterprises that adopt this model focus on collecting and converting waste into energy. This segment includes business models that convert bio-waste into biogas, agricultural waste into briquettes, and waste cooking oil into biodiesel. Two prominent companies using *waste to energy* are Zijani (Kenya) and Green Coal (Uganda).**



**Company Name:** Zijani  
**Innovation:** Waste to Energy  
**Incorporation Year:** 2017  
**Location:** Kenya  
**Website:** [www.zijani.com](http://www.zijani.com)  
**Description:** Zijani collects and recycles used-cooking oil (UCO) into other renewable products such as biodiesel, soap, and glycerin.



**Company Name:** Green Coal  
**Innovation:** Waste to Energy  
**Incorporation Year:** 2021  
**Location:** Uganda  
**Website:** [www.greencoalug.com](http://www.greencoalug.com)  
**Description:** Green coal distributes and manufactures carbonised briquettes from agricultural waste like maize cob, palm kernel husks, coffee husks, and rice husks.



Enterprises that adopt this business model leverage technology to create efficiency in the waste collection, disposal, and management value chain. Two of the enterprises using *technology for waste management* are Yo-Waste (Uganda) and Wastezon (Rwanda).



**Company Name:** Yo-Waste  
**Innovation:** Tech for Waste  
**Incorporation Year:** 2017  
**Location:** Uganda  
**Website:** [www.yowasteapp.com](http://www.yowasteapp.com)  
**Description:** Yo-Waste's mobile app allows households and small businesses to manage waste collection services from their smartphone.



**Company Name:** Wastezon  
**Innovation:** Tech for Waste  
**Incorporation Year:** 2018  
**Location:** Rwanda  
**Website:** [www.wastezon.com](http://www.wastezon.com)  
**Description:** Wastezon provides households and recycling actors with a mobile app for efficient waste collection, sorting, and traceability.



Enterprises that adopt this business model leverage waste materials as an alternative to frequently used construction materials such as wood and soil. Two enterprises that use a *waste to construction* business model are Dunia Designs (Tanzania) and Gjenge (Kenya).



**Company Name:** Dunia Designs  
**Innovation:** Waste to Construction  
**Incorporation Year:** 2016  
**Location:** Tanzania  
**Website:** [www.duniadesigns.org](http://www.duniadesigns.org)  
**Description:** Dunia Designs eliminates the need for wood-based furniture by using plastic to manufacture high-quality and stylish furniture.



**Company Name:** Gjenge  
**Innovation:** Waste to Construction  
**Incorporation Year:** 2017  
**Location:** Kenya  
**Website:** [www.gjenge.co.ke](http://www.gjenge.co.ke)  
**Description:** Gjenge produces eco-friendly pavers that are made from a composite of recycled waste, plastic, and sand.



## IV

### WASTE FOR AGRICULTURE



Enterprises that use this business model leverage bio-waste to create agricultural products such as bio-fertilisers and animal feed. Two of the companies that employ *waste for agriculture* models are EcoDudu (Kenya) and Mago-Farm (Rwanda).



**Company Name:** EcoDudu  
**Innovation:** Waste for Agri  
**Incorporation Year:** 2017  
**Location:** Kenya  
**Website:** [www.ecodudu.com](http://www.ecodudu.com)  
**Description:** EcoDudu utilises *Black Soldier Fly* as a rich source of protein for animal feeds while recycling organic waste into organic fertiliser.



**Company Name:** Mago-Farm  
**Innovation:** Waste for Agri  
**Incorporation Year:** 2019  
**Location:** Rwanda  
**Website:** [www.magofarm.co.rw](http://www.magofarm.co.rw)  
**Description:** Mago-Farm uses the *Black Soldier Fly* larvae to up-cycle organic waste into premium and sustainable protein ingredients for animal feed formulation.



Enterprises that adopt this business model collect and convert waste into cloth fibre that is subsequently used to make clothing and apparel. Two of the companies using *waste to clothing* models are Klurdy (Kenya) and Maweje Creations (Uganda).



**Company Name:** Klurdy

**Innovation:** Waste to Clothing

**Incorporation Year:** 2019

**Location:** Kenya

**Website:** [www.klurdy.com](http://www.klurdy.com)

**Description:** Klurdy uses plastic waste to create fashion materials, which are sold to other fashion brands and used in clothing production.



**Company Name:** Maweje Creations

**Innovation:** Waste to Clothing

**Incorporation Year:** 2018

**Location:** Uganda

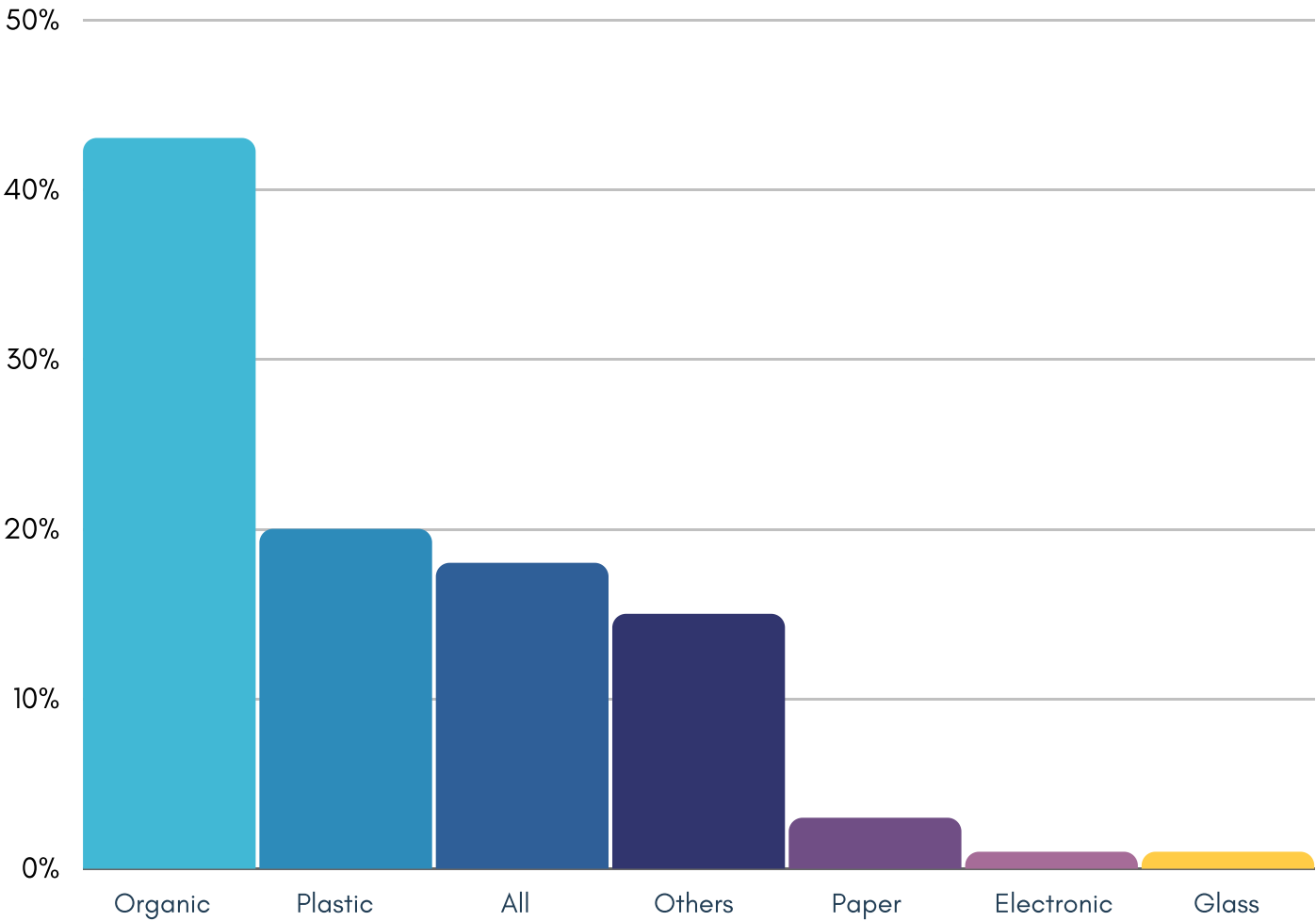
**Website:** [www.maweje creations.com](http://www.maweje creations.com)

**Description:** Maweje Creations recycles banana fibre waste and develops apparel, such as table mats and curtains.

Innovations in the waste sector can also be classified based on the type of waste fractions they use to enhance circularity. In East Africa, more innovations use organic waste in their innovation, while electronic and glass waste is used the least (figure 6). This can be attributed to the capital-intensive nature of recycling these waste fractions. Further, this distribution also reflects the volumes of the waste fractions generated in the region.

‘Other waste’ includes waste fractions such as medical waste, waste from clothes and synthetic fibres, wastewater, waste from tyres, and waste oil. Innovations categorised under ‘All waste’ manage all types of waste fractions, and include waste collection and disposal innovations that leverage technology. Organic waste includes waste from biomass, agricultural waste, and human waste.

**Figure 6:**  
Innovations by type of waste converted (N=249)





## Stage of Enterprises

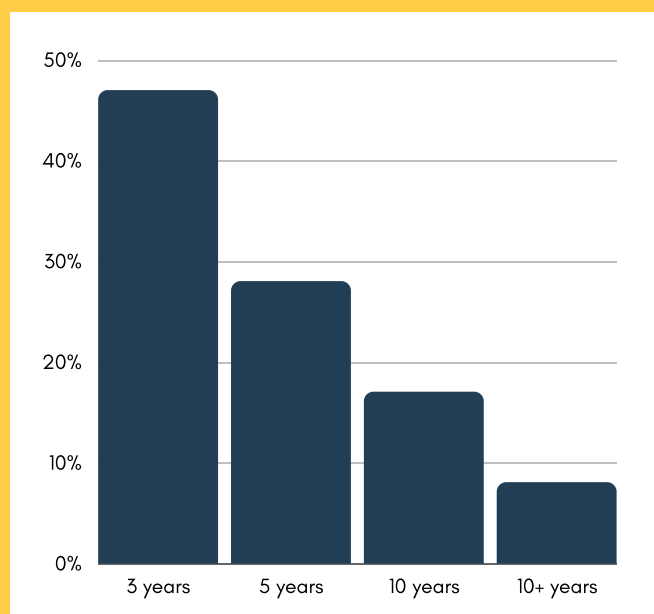
Based on our analysis, most waste-to-value startups in the region are early-stage. A majority of the startups analysed (48%) have only been in operation for three years and are yet to scale. A majority of the startups are at either at pre-revenue or post-revenue stage but very few have reached the break-even point i.e. are EBITDA positive. Given the positive trends we are seeing in the sector, it is expected that the companies will achieve scale as the sector continues to mature.

The nascency of waste-to-value startups can be attributed to four factors:

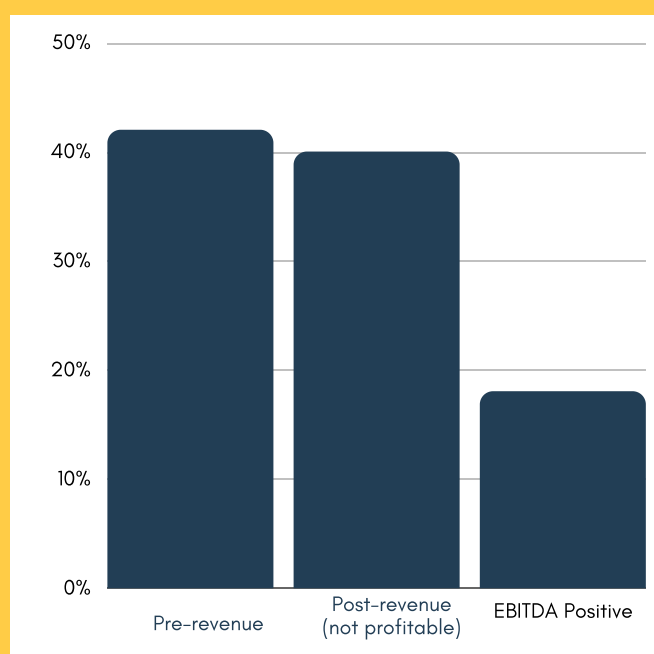
### **a) Limited customised business support for waste start-ups in the region.**

Waste-to-value startups require tailored support due to the unique nature of innovations in the sector. Such tailored support has been difficult to access as most enterprise support organisations (ESOs) in the region tend to be sector-agnostic. However, we are seeing a trend in which more accelerators and ESOs are adopting a sector-focused approach and thereby supporting waste companies in the region. Additionally, some ESOs are beginning to integrate waste into their sectors of interest for various programmes.

**Figure 7:**  
Number of years in operation (N=249)



**Figure 8:**  
Revenue stage (N=249)



STAGE OF COMPANY	DESCRIPTION
<b>Ideation/ Piloting/ Proof of Concept</b>	<ul style="list-style-type: none"> <li>• A bulk of the startups in the waste sector are still at proof-of-concept and pre-revenue stages. These companies are building their innovations and technologies and thus require tailored support towards this.</li> <li>• Various opportunities exist to support entrepreneurs in building their innovations. However, the support available is generic and not sector-specific.</li> <li>• Startups at this stage also require seed capital to get their innovations market-ready.</li> </ul>
<b>Early Stage</b>	<ul style="list-style-type: none"> <li>• At this stage, waste startups have typically figured out their innovations and launched a minimum viable product.</li> <li>• They require support to strengthen their business and revenue models and develop their market entry strategies.</li> <li>• Businesses at this stage require capital in order to build their businesses or teams and effectively get their product to market.</li> </ul>
<b>Growth/ Scale</b>	<ul style="list-style-type: none"> <li>• Waste companies at this stage are in the post-revenue stage and possibly working towards break-even.</li> <li>• They require support to become more sustainable and profitable through optimising operational efficiencies.</li> <li>• These businesses require capital to achieve scale. Although capital providers (sector-agnostic investors) may be interested in supplying capital to companies at this scaling stage, they are few in number, which creates a mis-match between the demand and supply of capital in the sector.</li> </ul>

**b) Limited demand for recyclable materials.**

In the past, corporations, and industries – the primary producers of waste – did not embrace circularity in their operations and rather used traditional “take-make-waste” models. Therefore, there was less demand for recyclables, with most waste management focusing on collection and disposal. However, as the awareness of circular models increases, the demand is growing and creating opportunities for enterprises in the sector.

**c) Limited availability of funding for waste-to-value social enterprises.**

Like in many other industries, the availability of stage-appropriate capital is essential for businesses to grow and scale. Given that there has been limited funding previously available for social enterprises in the waste sector, very few entrepreneurs have been interested in venturing into the sector, while those with existing businesses have either had to shut down or experienced stifled growth as a result of this challenge.

**d) Limited regulations and policies.**

There has been an increase in the development and enforcement of policies and regulations around waste management, such as the plastics ban, EPR policies, and zero waste targets. These policies have supported the creation of waste-to-value social enterprises that assist in proper waste disposal, which was previously not the case.

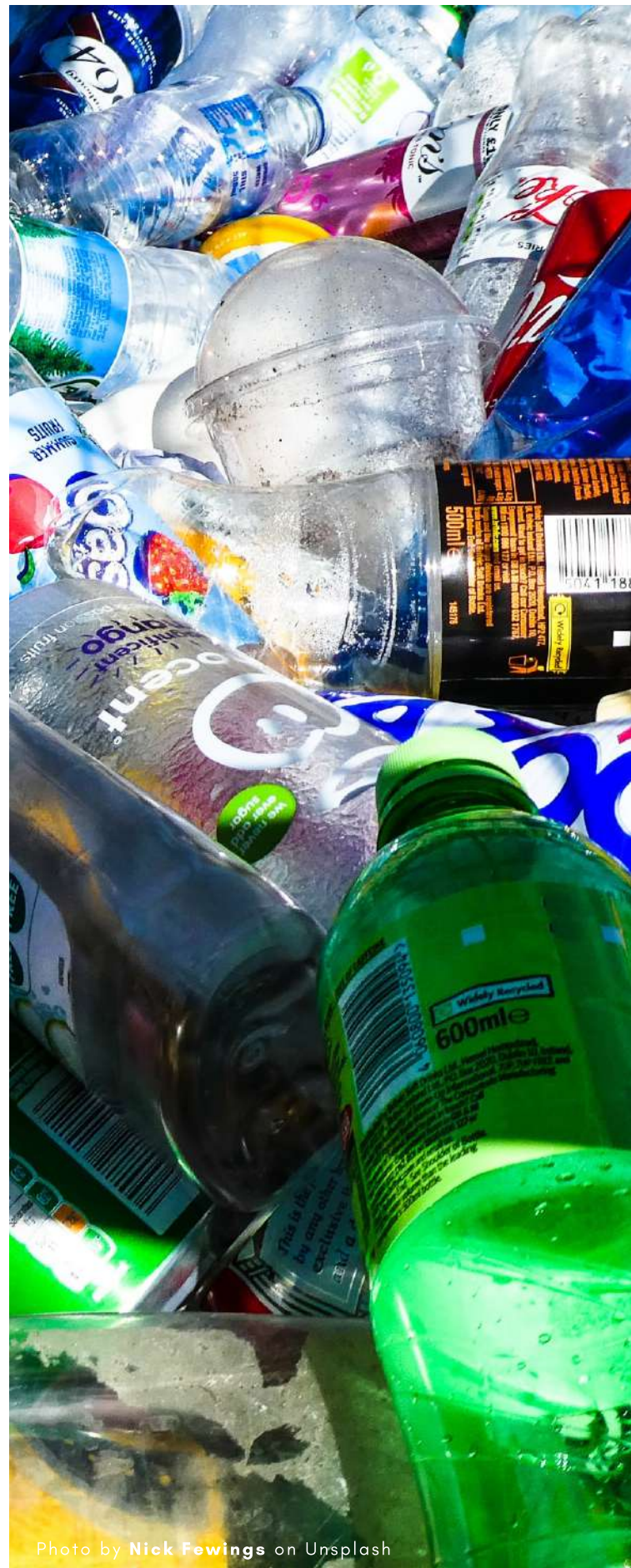


Photo by **Nick Fewings** on Unsplash



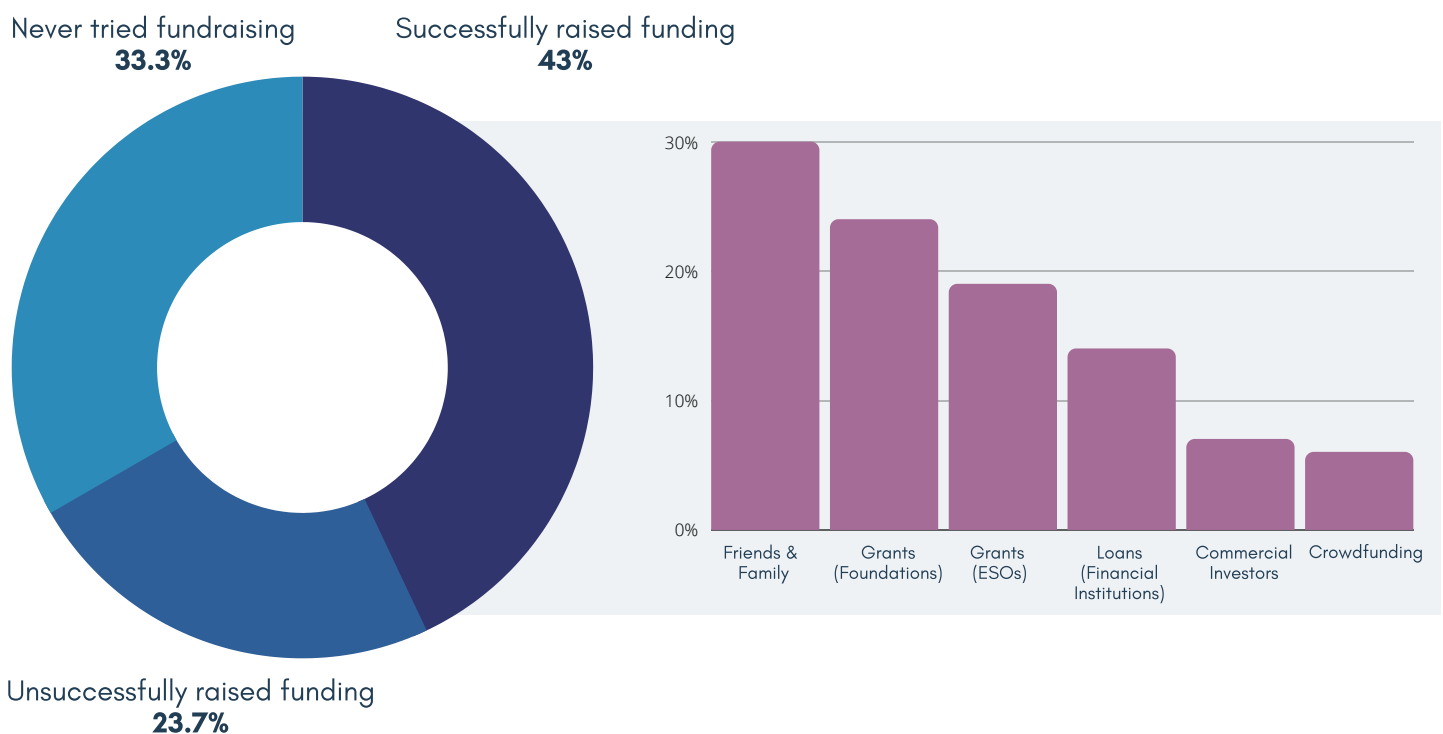
## Sources of Capital

As the uptake and demand for recyclable materials continue to increase in the region, impact investors are becoming particularly interested in supplying capital to up-and-coming startups in the sector to drive impact. Investors previously shied away from deploying capital into waste enterprises as there were not enough proven business models in the sector that had achieved scale and sustainability. This was mainly because enterprises in the sector were still in their nascent stages, which resulted in there being a limited investment pipeline and inadequate

information about the sector, both of which are necessary for investment.

The lack of capital support has affected the growth of early-stage companies in the sector. However, as enterprise activity in the sector increases, this trend is shifting. Further, due to the increased number of investors adopting environmental, social, and governance (ESG) impact mechanisms while evaluating potential investment pipelines, more capital providers have started supporting waste enterprises.

**Figure 8:**  
Funding sources for waste enterprises in the region (N=249)



# SECTION 3: RECOMMENDATIONS

Mechanisms for supporting waste enterprises in the region need to be put in place in order to ensure the sustainability of waste enterprises and green businesses. We have identified four recommendations to this end.

## 01

### **Provide tailored, stage-specific business support to entrepreneurs**

Similar to other enterprises, waste enterprises pass through different growth stages and their funding and support needs evolve at each stage. As a result, ESOs in the region need to become more sophisticated in discerning and addressing the needs of enterprises across each sector. We suggest conducting in-depth needs assessments for every enterprise in order to create bespoke curricula for support programmes.

This approach ensures that optimum support is given to the enterprises. An example of such targeted support is provided by BESTSELLER's Waste-to-Value Accelerator, implemented in partnership with Intellectap. The programme provides a combination of milestone-based financing and technical support to select waste enterprises in the region. There is also a need to provide more technical support to enterprises as well as business development services.

## 02

### **Strengthen partnerships between private and public sector**

Waste management in the region has been decentralised and is being managed by local governments. However, for enterprises in the sector to thrive and scale, there is a need for collaborative partnerships between the local governments and for-profit enterprises. This collaboration can be helpful in designing and implementing innovative market solutions that are reflective of the current trends and the local region.

A good example of a successful public-private collaboration is between the Rwandan government and Enviroserve, a solar e-waste recycling company. The company is the first electronic waste recycling company in the country. It recycles e-waste produced as a result of increased off-grid penetration in the country and the government spearheads the initiative. [20]

## 03

**Increase the supply of patient capital and deal flow information**

East Africa has seen a growing number of impact funds, VCs, and PEs establish themselves in the region. However, enterprises in the waste sector face several challenges in acquiring capital because of the early-stage nature of the businesses and the lack of adequate deal flow information for investors to build upon. As such, there is a need for patient capital (grants, concessionary loans, and blended finance) to be deployed in the

early stages, and for increased sharing of deal closure information among stakeholders. There is also a need for funding that focuses specifically on innovations working on recycling and up-cycling waste-to-value enterprises. Such targeted funding will open up the sector and expose these enterprises to more commercial funding. Examples of recent capital deployed in the waste-to-value sector are given below.

WASTE SECTOR COMPANIES	ABOUT	COUNTRY	STAGE	INVESTORS	YEAR
<b>Mr. Green Africa</b>	Recycling company that also supplies recycled plastics	Kenya	Growth	DOB Equity, GIF	2019
<b>Zanrec Ltd.</b>	Waste management company focusing on the hospitality sector	Zanzibar	Growth	DOB Equity	2019
<b>Sanergy</b>	Organic recycling company	Kenya	Growth	AXA IM Alts, Mani Kapital, and Kepple Ventures	2021
<b>Ecodudu</b>	Waste-to-value solutions using the Black Soldier Fly	Kenya	Early	ShEquity, GreenTec Capital Partners	2020
<b>Yo-Waste</b>	"Uber for waste" model	Uganda	Early	BESTSELLER Foundation	2021



# 04

## Increase knowledge sharing among stakeholders

Given that the sector is still growing, many current initiatives and actions are being carried out in an uncoordinated, disaggregated manner. This increases inefficiency and creates redundancies across the sector. There is, therefore, a need for a local industry umbrella body to be formed to coordinate the stakeholders and move the sector forward seamlessly. Some platforms,

such as [Africa Circular Economy Network \(ACEN\)](#) and [Sustainable and Inclusive Business \(SIB\)](#) in Kenya, are already working towards this, but there is scope for many more across the region. Such networks and regional bodies will also be helpful in lobbying for policies and regulations that encourage the industry's growth.



Photo by Antoine GIRET on Unsplash

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