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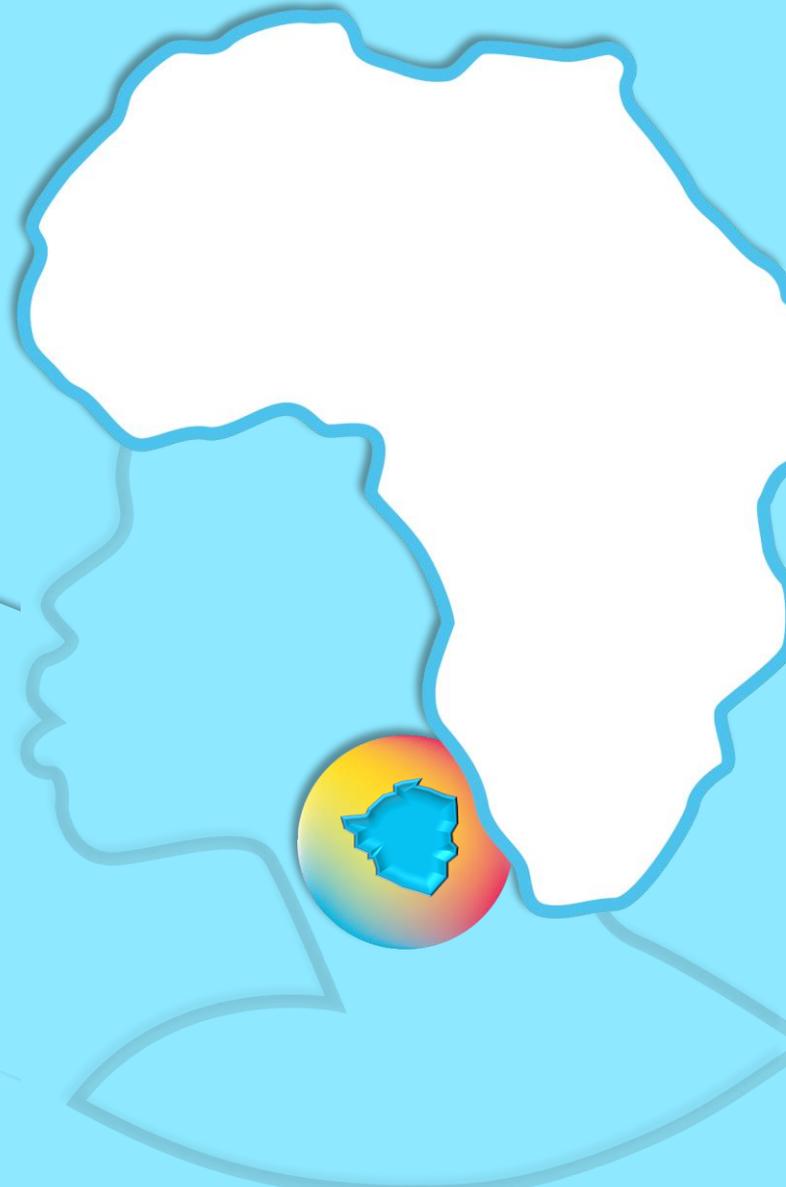


PROJECT

ASSESSMENT OF THE CURRENT STATUS OF THE CIRCULAR ECONOMY

in the waste sector for
developing a waste
stream specific roadmap

IN ZIMBABWE



APRIL 2022, FACT SHEET



INTRODUCTION

The Ministry of Environment, Climate, Tourism, and Hospitality Industry assessed the current status of the circular economy in Zimbabwe's waste sector in collaboration with The Netherlands Organisation for Applied Scientific Research (TNO) and with the support of Sustainable Inclusive Business (SIB-K), a knowledge centre under the Kenya Private Sector Alliance (KEPSA). The European Commission funded the study through the Climate Technology Centre and Network (CTCN). The study was implemented for one year (2021 – 2022).

The research was conducted using a cross-sectional design using a combination of qualitative and quantitative approaches. At the household level, samples were taken. Primary and secondary data was collected through desk reviews, key informant interviews, and questionnaires sent out to local governments, government agencies, waste management companies, business organizations, and agricultural societies.

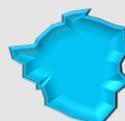


PROJECT OBJECTIVES

The project's objective was to create a national waste stream roadmap and a pilot project for a more circular waste management system.

Specific objectives

- ⊕ Assessment of the current state of waste management practices for the six household waste streams (*plastics, metals, glass, paper, organic waste, and agricultural waste*), identify and develop an up-to-date guide for key stakeholders, existing public and private sector initiatives, policies, and insights in waste generation and processing.
- ⊕ Identify potential opportunities and barriers to transitioning to a more circular waste management system for each waste stream
- ⊕ To select a prioritized waste stream with the greatest potential for transitioning to a more circular management system
- ⊕ To develop a detailed strategic national roadmap for the selected waste stream, which serves as a management tool for the implementation phase, creating new businesses, innovation, and technology transfer. The roadmap will include short, medium, and long-term recommendations for, among others, appropriate technologies, legal reforms, policies and regulations, and market engagement
- ⊕ Conceptualization of a pilot project with potential economic, social, institutional, and environmental benefits





THE CURRENT STATE OF WASTE MANAGEMENT PRACTICES IN ZIMBABWE.

- The circular economy is not fully developed in Zimbabwe, but the 'circular behavior' is implicit in waste value chains. There are only three engineered landfills in the nation - Bulawayo, Kadoma, and Norton.
- There are low levels of organic waste valorization; entrepreneurs opt for the valorization of other waste streams.
- Source separation is not particularly prevalent in Zimbabwe. Low waste separation rates were recorded, owing to the inconvenient nature of the task, as well as a lack of infrastructure and knowledge.
- 30% of households segregate waste to some level – but this is generally the separation of organic waste from inorganic waste for composting or separation for collection by private enterprises
- Even though households segregate their waste, local governments gather it all together because they lack the ability or processing facilities to dispose of it sustainably.
- On participation of women in the waste value chains, 37.5% of the companies and enterprises were either women-owned or had very strong female influence in the ownership and management structures.
- Organic waste stream has the potential to contribute to food security (compost, organic fertilizer), and energy generation (biogas).

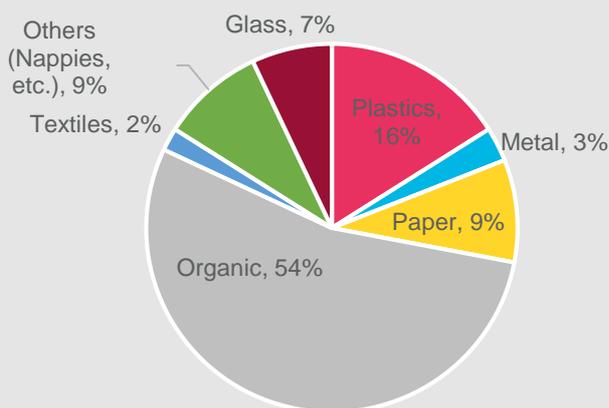


Figure 1: Waste Characterizations for Zimbabwe

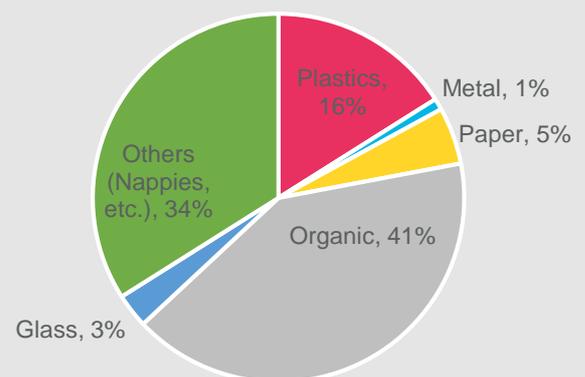
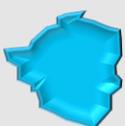


Figure 2: Waste Characterizations for Bulawayo





POLICIES AND INSIGHTS IN WASTE GENERATION AND PROCESSING

- Zimbabwe has effective waste management policies, strategic plans, and regulations. On the other hand, the country lacks a circular economy policy, plan, or legislation. The lack of implementation of the available instruments has been a drawback.
- Several laws and regulations exist that target waste management, the Environmental Management Act [Chapter 20:27] and the Environmental Management (Effluents and Solid Waste Disposal) Regulations, 2007 are two examples (SI 6 of 2007). There are no supporting policies on the "market" side — neither the National Development Strategy 1 (NDS) (2021-2025) nor the National Agriculture Policy Framework (2018 – 2030) mentions organic fertilizer, compost, or bio-slurry.
- Zimbabwe's Long-term Low Greenhouse Gas Emission Development Strategy (2020-2050) recognizes composting and recycling waste and necessary infrastructure. The problem is to apply this in accordance with previous legislation.
- According to the National Climate Policy, greenhouse emissions (GHG) must be reduced. The policy also urges climate change to be mainstreamed across the economy, including energy, agriculture, industrial processes, waste, land use, land cover, and forestry. Promotes ideals of sustainable development, pollution control, environmental stewardship, and broad involvement. The policy identifies waste as one of the sectors responsible for 3.93% of GHG emissions.
- The National Climate Change Response Plan from 2015 identifies solid waste management as a major national challenge, targeting better capacity building of local authorities, creating an enabling policy environment for waste to energy, and developing an enabling framework to promote waste minimization. The waste sector is a priority mitigation area and is equally a sector where the circular economy has one of the greatest impacts.
- In terms of organic waste valorization, most policies and strategies are biased towards waste to energy. This may have been influenced by the fact that most of them were developed in response to climate change challenges.
- The majority of efforts are connected with waste treatment and recycling, with the overall goal being to reduce the number of landfills that have increasingly become a nuisance.





PRIORITIZED WASTE STREAM AND POTENTIAL FOR CIRCULARITY

The intersection between circular economy and industry represents a great opportunity for companies, organizations, and academia to develop new circular business models by incorporating technologies, continuing competitiveness, and reducing the environmental impact of their productive activities. Organic waste was chosen as a priority waste stream because of its waste generation levels and significant potential for valorization. The organic waste stream has the ability to help with food security (compost, organic fertilizer), as well as energy generation (biogas). While plastics and organics were both nominated, the plastics value chain is developing and growing on its own.



IDENTIFIES POLICY GAPS

POLICY GAPS	
There is a mismatch between what the policy envisions and the allocation of resources to facilitate implementation (competing interests and limited budgets).	Limitation in the availability of information on waste generated. Data is needed to support policymakers in policy development and planning.
There is a low focus on the potential of organic waste to organic fertilizer conversion compared to organic waste to energy.	Inadequate budgetary allocation extends to the development of infrastructure.
Low coordination between sector players (including ministerial level) on the alignment of policies to enhance the adoption of technology to promote the use of organic waste for fertilizer and energy.	Low levels of implementation of existing regulations; the EPR scheme from voluntary to the mandatory stage to support the commitment from the private sector to curb packaging pollution.





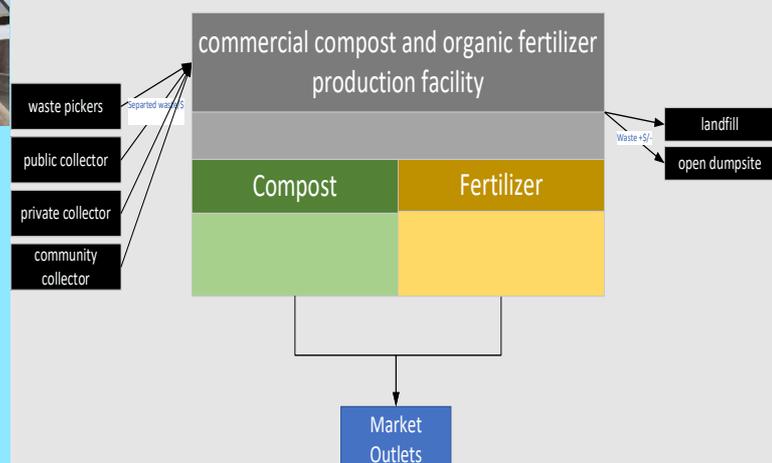
CONCEPTUALIZED PILOT PROJECT

The project involves establishing a facility that would produce compost and organic fertilizer on a commercial scale from a mixture of household organic waste and agricultural waste to provide a large-scale solution for Zimbabwe's vast volumes of domestic organic waste. Compost can be produced for a low initial investment, making it a cost-effective option for handling huge volumes of organic waste. Organic fertilizer can be used in place of chemical fertilizer, resulting in environmental and health advantages and the prevention of soil deterioration. Because there is an outlet for organics, it helps to scale the upstream component of the value chain. Because cross-contamination is avoided, the possibility of valuing various forms of waste is increased.



CRITICAL ASSUMPTIONS OF THE PROPOSED PILOT

- The pilot will be set up in an area with high volumes of organic waste. The pilot will be set up close to the accumulation of waste to minimize transportation costs since the waste is bulky.
- The pilot will process 1750 tonnes of organic household waste. Additionally, 1750 tonnes of agricultural waste will be used, and this will be collected from markets. Thus, 3500 tonnes of organic waste is used for processing annually.
- The pilot assumes that from 1000kg of organic waste, 350kg of compost can be made.
- The pilot project adopts the assumption that there will be goodwill with the local authorities; this is important in supporting the setup and ensuring a constant supply of waste.
- The country's policies will enable the pilot's sustainability and stimulate extension, as expected under the phased approach; these include tax incentives, subsidies, or other financial incentives to guarantee market access.
- A realistic price for high-quality commercial compost is approximately \$30-\$50 per tonne. For fertilizer, a price of \$250-400, depending on the nutrient content, is typical for Zimbabwe. The pilot will assume a realistic price of \$350 per tonne for high-quality organic fertilizer.
- The pilot assumes support from the Ministry of Agriculture to assist in standardization, certification, and market creation.





ANTICIPATED CHALLENGES IN EXECUTING CONCEPTUALIZED PILOT PROJECT

- The costs of machinery to extrude and molt plastics are quite high, from \$250,000 for a simple granule producing plant to \$2,000,000 for an integrated manufacturing facility
- No incentives such as subsidies, tax holidays, or reduced import duty on equipment used for recycling and circular activities
- High costs of energy
- Loans or other forms of financing for plastic waste processing are difficult to come by since the interest rate is very high
- No equipment manufacturer in the country, so everything needs to be imported
- Lack of specialized facilities, inadequate expertise, and lack of appropriate budget allocation
- Scale economies are both a benefit and a curse. It can help with economic viability, but it emphasizes the importance of appropriate infrastructure. Setting up a commercial-scale facility needs a strong collecting network, which cannot be the facility's sole responsibility.

STRATEGIC NATIONAL ROADMAP

The Circular Economic Roadmap for Zimbabwe intends to guide the country's transition to a circular economy in organic waste management. Three theme elements govern the roadmap: (1) sustainable waste management, (2) improving circularity in organic waste management, and (3) creating a circular economy. Improvements in the institutional environment can accelerate change and allow innovations to scale, improving how parties collaborate, ensuring cross-learning, and reducing resistance. Building capacity for change allows the deployment of necessary skills, both at the decision-making and implementation levels. In the short term, the roadmap envisions supporting the development of an EPR framework in adopting sustainable packaging and leveraging the separation of waste to enhance the valorization of other waste streams. The inclusion of women is observed as a critical factor in tackling gender parity concerns and ensuring the availability of data anchored on improved collaboration between sector actors supported by the adoption of a public-private dialogue platform that will focus on policy matters regulations. Capacity development and institutional strengthening cut across the implementation phases as short-term and long-term objectives. Infrastructure development is the most critical, with the local authorities moving their focus from





ROADMAP VISUALIZATION OF THE CURRENT PRIORITIZATION

ROADMAP >>> 2030

Long
2027-
2030

- Develop domestic funding instruments for the expansion of the waste infrastructure
- Improve waste disposal options

Medium
2024-
2026

- Prepare and foster human capacity building
- Invest in R&D and innovation
- Increase data availability
- Provide incentives for market development and local trade
- (Re) design of policies and regulations to support circularity and management
- Improve public-private collaboration
- Improve cross-sectoral collaboration
- Increase collection levels
- Increase dry/wet separation at source

Shot
2022-
2023

- Increase public awareness and information sharing
- Increase institutional awareness and information availability
- Improve policy and regulatory enforcement and evaluation
- Expand the policy and legal framework for EPR/ producer responsibility
- Improve inter-institutional collaboration
- Include the informal sector
- Include women and young entrepreneurs
- Enhance the valorisation of organic waste

Domain:

- Increase knowledge levels and availability
- Enhancing the institutional environment
- Promoting constructive collaboration
- Improve the physical infrastructure



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