From Waste to Resource: Creating an Enabling Policy Environment for a Circular Economy in Zambia

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This policy brief is based on a full-length peer reviewed publication that is available in open access format[3].

Summary

- Zambia has a growing waste management problem that is contributing to economic, environmental and social sustainability concerns.
- The Circular Economy (CE) concept is gathering interest as an appealing approach to transform how resources are used and managed. However, Zambia's current linear waste management approach means value-creation opportunities based on *reduce*, *reuse* and *recycle* principles are missed.
- This research examines Zambia's current policy and legislative approach through document review and stakeholder interviews to understand how enabling the landscape is for a CE.
- The findings highlight various policy challenges that impede the circular transition. These include ownership and coordination ambiguities; limited implementation and enforcement; a restrictive licensing approach; low support for innovation; and a lack of inclusion of the informal sector.
- **The key recommendations are as follows:** to prioritise the development of enabling waste infrastructure for circularity; to improve policy coordination at the ministerial level; to develop an effective multistakeholder CE strategy; and to boost incentives to stimulate private sector interest in circular business models.

Open dumping along Esther Lungu Road, Chawama Compound – Lusaka, Zambia (2023)

PHOTO: MALONGA HAZEMBA

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Introduction and context

Zambia has a growing waste management problem. Alongside demographic shifts (eg population growth, urbanisation) waste volumes are rising while compositions are becoming more complex. There is a limited collection system, and where services exist, household affordability and willingness-to-pay are low, so burning and open dumping are widespread practices. There is also a lack of adequate sanitary landfilling facilities, so waste is disposed of at dumpsites across the country. For example, Chunga, which captures the capital city's waste, was originally designed as an engineered landfill, but now operates like a dumpsite due to mismanagement issues. Additionally, data on collection and compositions of waste are difficult to obtain; data are mostly based on urban centres and often outdated. In 2007, Lusaka reported a collection coverage rate of 45%: over 15 years later this is still referred to as the capital's official statistic [1].

Zambia's inadequate waste management is further associated with public health (eg disease) and environmental (eg pollution) harms that translate into significant economic costs for the government. This has been demonstrated by the recent cholera epidemic – linked to poor waste management and sanitation behaviours – which has recorded over 22,000 cases since October 2023 and required significant governmental resources to manage [2, 3].

The Circular Economy (CE) concept is gaining interest regionally and globally. In Africa, this is illustrated by the growth of coalitions, such as the African Circular Economy Alliance (ACEA), and Africa's inaugural hosting, in Rwanda, of the World Circular Economy Forum in 2022. A CE approach reframes waste from being a burden into an opportunity for value creation through proactive adoption of *reduce, reuse* and *recycle* strategies (the '3Rs') [4]. For example, food waste can be used as an input for energy generation, while plastics can be recycled into new products. Policies can be formed to strategically capture and enable the sustainability benefits associated with a CE approach [5]. While these principles are already – to some extent – embedded into the national policy approach, Zambia has not yet developed a specific CE strategy [6].

This brief summarises research which has assessed the current waste policy environment, including pinpointing the challenges and opportunities for Zambia's CE transition. This is timely given the Government's recently published National Green Growth Strategy 2024-2030, which explicitly outlines the CE as a resource efficiency strategy [7]; the Nationally Determined Contribution (NDC) commitments[4]; as well as Zambia's official expression of interest to join the ACEA.

Approach and Methods

The aim of the research was to explore the current waste management regime in Zambia and understand *if* and *how* CE concepts are embedded into the policy approach. In doing so, the research pinpointed policy challenges as well as opportunities. The qualitative methods employed combined primary and secondary data sources:

- **A scoping document review** focused on Zambia's waste related policies and legislative documents to generate insights into aspects

[4] Zambia's updated NDC includes a commitment to reduce emissions from waste. The new assumptions are based on reaching 80% in terms of waste collection rates and landfilling by 2050.

such as the definition of waste, references made to CE, and the prescribed management approach.

- **Semi-structured interviews** with key informants who have expert knowledge of the topics to gain rich and diverse insights. In total, 14 interviews were held with 15 stakeholders (for more detail see the full paper). The topics addressed included the current waste landscape; the relevance of a CE; the existing policy agenda; and policy challenges and opportunities.

The emergent findings were presented at a feedback workshop (November 2023) attended by some of the interview participants as well as additional stakeholders to build on, and improve reliability of, the insights obtained.

Findings

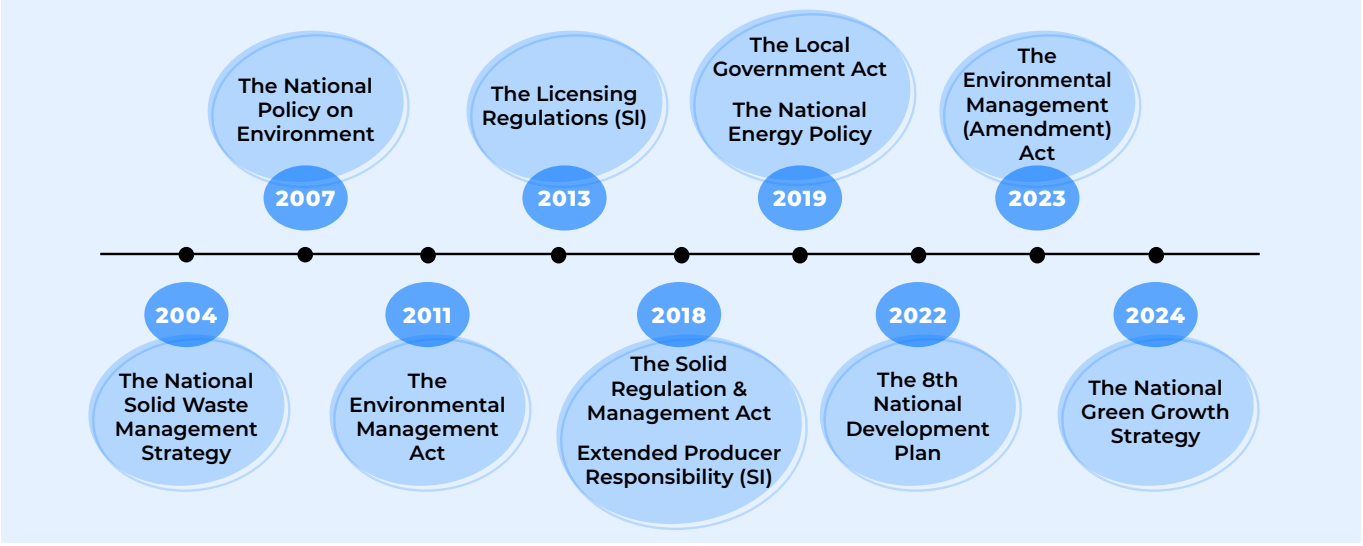
The findings are structured as follows. Firstly, the current policy approach is summarised. Then, we provide insights, based on our analysis, into whether the policy is enabling of a CE. We highlight some of the key policy challenges that emerged from the analysis. Finally, the policy opportunities identified are presented.

Current policy approach

Zambia has various policies that speak to the waste and CE agenda, such as government strategies, legislations and statutory instruments (SI) (See **Figure 1**). These policies determine how waste has been – and is currently – viewed and managed, identify relevant stakeholders and include some with references to circular principles.

The interviews determined that the Environmental Management Act (EMA) of 2011 (amended in 2023) and the Solid Waste Regulation and Management Act (SWRMA) of 2018 are the two most relevant legal documents pertaining to the CE, whereas the Extended Producer Responsibility (EPR) is the most pertinent SI. EMA and EPR are currently under the mandate of the Ministry of Green Economy and Environment through the Zambia Environmental Management Agency (ZEMA), whereas SWRMA outlines that the Ministry of Local Government and Rural Development (MLGRD) is responsible for managing municipal waste.

***Figure 1:** Zambia's policies and legislations relevant to waste management and CE, according to primary and secondary sources.*



Are existing policies enabling of a CE?

The findings suggest that the policies, on paper, are conducive to a CE approach. For instance, a waste hierarchy approach is embedded into the legal framework, which includes a focus on reduction, reuse, recycling and recovery before linear disposal (ie landfilling) [5]. Moreover, the SWRMA states that *'waste is a resource'* [8], which is progressive compared to earlier regulations where waste was viewed as a pollutant. Nonetheless, the interviews revealed that these principles are not being applied in practice. The country has a low collection rate and willingness to pay for waste services is limited, so mismanagement is commonplace (see *quote 1*). When services exist, waste is managed in a linear manner with a focus on disposal rather than revalorisation. Hence, the primary data indicated that policies on paper do not translate into actions. When CE activities are taking place, they are generally private sector led rather than policy driven with most interest focused on the recycling 'R'. For example, participants pointed to some established business models based on circular principles, such as a wastepaper to egg-tray value chain. There are also various artisan and entrepreneurial activities that seek to upcycle wastes, but scale can be limited. The informal sector also plays a key role in carrying out activities that align with a CE mindset (eg resource recovery at dumpsites), albeit in a hazardous manner outside of the *official* system, since they are not recognised by policy.

Quote 1 (Participant, private sector):
"Technically burning your waste is illegal here, technically dumping in public spaces is illegal here, but in the high-density areas... that is what most people do."

Policy challenges

The research highlighted five policy challenges that are deemed to impede the development of a CE. These are summarised in **Table 1**.

***Table 1:** Summary of identified policy challenges.*

Challenge	Overview
Policy ownership & coordination issues	▪ The mandated institutions for handling waste have changed overtime (ie more responsibility from ZEMA to MLGRD), but there is no cross-ministry strategy. This is perceived as causing co-ordination challenges. ▪ Some believe the ownership of current waste and future CE agendas is unclear. This is complicated by high private and informal sector involvement.
Inadequate implementation & enforcement	▪ General sentiment that the policies and legislations (eg EMA, SWRMA) are clear on paper, but are not effectively implemented or enforced in practice. ▪ Limited SIs to support policy goals. An exception is the EPR (2018), which aims to implement aspects of SWRMA, but it lacks operational guidelines and is not enforceable in its current form.
Restrictive licensing approach	▪ Licensees are rarely held accountable for sub-optimal service provision. ▪ If citizens cannot afford to pay service providers, then their waste is not collected. ▪ Licensing approach perceived as inflexible. Recycling companies have barriers to obtaining licenses since the current focus is on mixed waste collection services without incentive to collect separated waste streams.
Limited support for innovation	▪ Lack of SI to support CE business models, so high-value recycling opportunities are realised outside of Zambia (eg in South Africa, China). ▪ Lack of accurate waste data can reduce investment appeal due to unknown future pipelines (eg waste-to-energy plants & high-value recycling facilities).
Failure to include informal sector	▪ Low-value waste sorting happens retrospectively by informal workers at dumpsites. Certain materials (eg plastics, metals) are picked to sell to aggregators but others (eg organic waste) are not sought. ▪ Informal workers carry out hazardous and arduous work but are not provided for in official policy documentation, neglecting the positive sustainable development impacts that might arise from their legitimate involvement in the sector.

Policy Opportunities

The findings suggest that the CE concept is highly relevant for Zambia, but policy challenges currently hinder the shift to circularity. In agreement with previous studies [4,6], our interviewed experts reinforced the fact that CE is a useful reframing from traditional waste management, which is viewed as a costly government burden. Circularity is appealing since it supports a development agenda with potential to deliver local economic prosperity, job creation and environmental stewardship (see *quote 2*). Specifically, there is interest in scaling-up the domestic recycling industry (eg plastics) to create local value while prolonging the lifespans of dumpsites and reducing leakage into the environment. Organic wastes are underutilised, so Zambia is missing out on opportunities to generate energy, compost and fertilisers from waste. For example, a study by the Accelerated Growth for SMEs (AGS) suggests that biogas production from Zambia's urban food waste presents an opportunity worth US$46 million [6]. Electronics and glass are increasing in Zambia, and so also hold revalorisation potential. To create an enabling environment to capture the benefits of the global circular shift, the presented policy challenges also offer opportunities for policy reform.

Quote 2 (participant, private sector / NGO):
❝ *when we talk about a waste management system, we think it is the collection and the disposal of waste. Pretty much that's it… but CE changes the perspective of that. It's not just about collecting it and taking it to the dumpsite. It's about recycling, reusing. It's about policy developments around that that area. It's about growing the country's GDP.* ❞

The primary data pointed to the need for a more proactive policy approach to support the development of a CE, including across industries and product lifecycles to create enabling features conducive to circularity (eg focusing not only on end-of-use, but design and material standards). Given ambiguity relating to the roles of certain stakeholders, clearly defining government and stakeholder roles can facilitate a strategic, coordinated approach. Importantly, waste infrastructure and servicing should be designed to support a CE. Separated waste streams are a prerequisite for circularity, so prioritising the creation of an affordable service that includes the collection of separated waste streams in the future is required. As limited data exist regarding waste volumes and compositions, systems can be formed to improve measurement. Furthermore, circular value chains are underdeveloped, so top-down support is perceived as necessary to boost private sector interest. Investment interest can be stimulated through SIs for sector-specific tax exemptions and benefits; tariff-free imports on equipment; investment funds; and dedicated registration codes. The creation of dedicated investment schemes can help to foster circular innovation and complement other policy goals.

The findings stress that policies are only effective if accompanied by strong implementation and consistent enforcement. Responsible ministries should aim to have the capacity to effectively enforce regulations to ensure legitimacy of efforts. Where limited capacity persists, an option could be for authorities to delegate responsibility to other agencies or contractors with better local level reach. Policymakers could also embrace the knowledge and skills of the informal sector and support their official participation, complementing the role of licensed waste companies (eg to support collection of recyclables). Other countries have successfully engaged informal sector workers into public services (eg Brazil, Colombia). If well-designed, the impacts of an inclusive approach can produce broad development benefits, such as *"gender equality, improvement of occupational health, reduce inequalities, eradication of poverty and hunger"* [9].

Policy Recommendations

Based on interviews with the key informants, and following a validation workshop with stakeholders, the following recommendations regarding creating an enabling environment for circular economy (CE) in Zambia have been made:

- **Prioritise the establishment of enabling waste infrastructure:** A CE requires an effective waste service that includes collection of separated waste streams. The licensing approach should be designed to encourage separate collections for different waste streams to produce high-quality feedstock for recycling. This includes revisiting the licensing approach to ensure it encourages, rather than prevents, recycling efforts. Waste systems should also encompass accessible data and measurement protocols.
- **Streamline policy coordination at the ministry level:** A coherent approach requires effective coordination between ministries, agencies (eg ZEMA and MLGRD) and parastatals since mandates are interrelated. For a substantive approach, implementation and enforcement needs tightening to ensure policies achieve their intended goals. A cross-ministry CE strategy could help distribute roles effectively.
- **Develop an effective multistakeholder strategy:** Since an inclusive approach requires collaboration between different stakeholders, an explicit CE strategy can identify the roles of different policy and non-policy stakeholders, including citizens and the informal sector. A CE road-mapping exercise can help to identify strategic pathways and stakeholder collaboration potential across industries and regions.
- **Boost incentives to stimulate private sector interest:** There is a need for top-down financing and policy support to encourage private sector involvement in CE. Policies and supportive instruments are required to enable and upscale the CE. Entrepreneurship in the sector can be fostered through policy-backed business incubation and mentorship.

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