



Managing solid waste for a sustainable Accra

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- Accra, a rapidly urbanising city of over two million inhabitants, generates approximately 900,000 metric tonnes of solid waste annually. Despite the city investing between 20-50% of its municipal budget on sustainable municipal solid waste management (MSWM), many citizens lack adequate waste collection services, landfills are the primary disposal method, and the city's sanitation and environment are deeply impacted by dumped waste.
- Increasing volumes and changing waste content threaten biodiversity and human health, requiring comprehensive local and regional waste management strategies.
- About 99% of waste collection services in Accra have been outsourced to formal service providers, yet the informal sector contributes 51% of total current collections. The marginalisation and lack of recognition for informal workers is a shortcoming of the current solid waste management (SWM) system.
- In addition to identifying barriers to the governance of sustainable waste management in Accra, this brief considers multiple policy recommendations. These involve embracing a circular economic model, integrating informal sector actors, and harmonising the various legal and institutional frameworks for effective governance.

Introduction

Rapid urbanisation and population growth in Accra, Ghana, have led to unprecedented challenges in municipal waste management, resulting in visible environmental degradation and health hazards. Waste generation in low- and middle-income countries is projected to double over the next 20 years. As such, city authorities must plan how to manage increasing volumes of waste in the future. The current waste management model prioritises landfilling over waste minimisation and valorisation, exacerbating the city's waste crisis. Disparities in waste collection services and a lack of recognition of the informal sector's vital role further complicate the situation. To address these challenges, policies must embrace a circular economic model, integrate informal sector actors, and harmonise the various legal and institutional frameworks for effective governance. Implementing these policy options is crucial for achieving sustainable municipal waste management in Accra.

Overview of waste management in Ghana

Ghana's urbanisation has surged over the past three decades, with the urban population escalating from four to 14 million and over 5.5 million people residing in slums. This rapid growth has exacerbated informality, underdevelopment, and inequality, intensified waste generation, and strained municipal waste management capacity. In Accra, solid waste pervades, with an estimated 2,800 metric tons generated daily, of which only 70% is collected. Informal service providers do more than 50% of all waste collection. The waste composition comprises 53.91% organic matter, 8.75% paper, and 16.15% plastics. In high-income areas, 0.91 kg of waste is produced per person per day, compared to 0.69 kg in middle-income areas and 0.51 kg in low-income areas. If soil and dust are excluded, organic waste constitutes 69% of municipal solid waste (MSW) (Miezah et al., 2015; Asare et al., 2020). Despite the largely organic composition of refuse, the current waste management model is primarily based on disposal via landfills, as current policy regimes do not support composting, recycling, or reuse initiatives.

Policy motivation and objective of the research

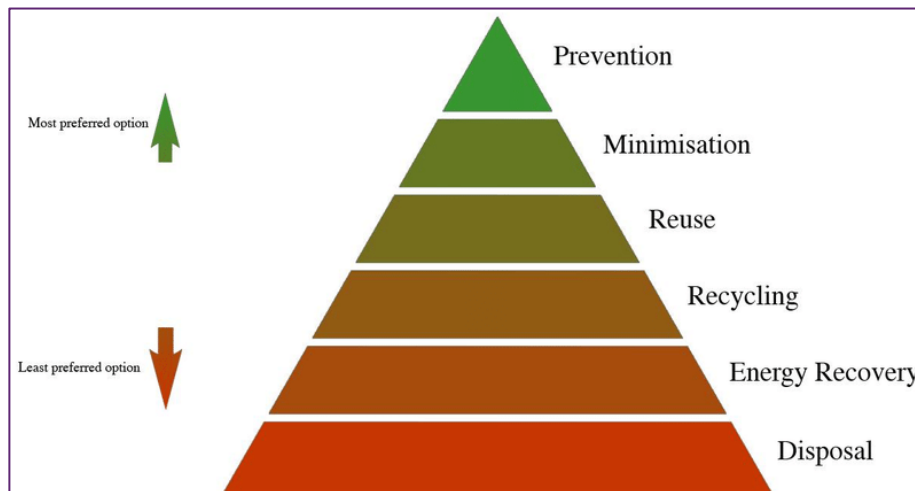
There is an urgent need for sustainable municipal solid waste management (MSWM) to minimise landfill use and environmental harm. Sustainable waste management ensures the safe handling of MSW while limiting environmental and health impacts. Our study focused on the governance aspect of MSWM in Accra, aiming to identify root causes and policy barriers. We employed an exploratory, mixed-method approach, including expert focus group discussions, key informant interviews, and analysis of informal waste industry practices.

Current waste management and policy gaps

The ‘discredited’ linear approach

In Accra, the MSWM practices predominantly follow a linear model. Landfilling is, by default, the preferred method despite its environmental repercussions. Over the past three decades, the city has operated 15 landfills where waste was disposed of and buried without containment systems to prevent groundwater contamination. More sustainable solutions, such as waste prevention and minimisation (see Figure 1), are yet to gain traction in Accra. Only about 5% of collected MSW is recycled in Ghana, of which 10% is composted, and the rest is landfilled (Oduro-Appiah and Afful, 2020). This occurs even though 86% of waste generated countrywide is recoverable, with an estimated potential value of GHS 83 billion annually. Moreover, despite the glaring need and opportunity, no policy guidelines exist for composting or recycling. Additionally, there are no policies requiring source separation, a prerequisite for the efficient valorisation of MSW.

FIGURE 1: The waste management hierarchy



Source: Hong et al. (2016).

Waste collection disparities

Solid waste collection in Accra faces significant disparities, with affluent areas receiving better service than lower-income neighbourhoods. Formal waste collection services occur in higher-income areas at a rate of nearly 100%, while only 40% of waste is collected from low-income neighbourhoods. Waste collection services are particularly lacking in densely populated areas, such as emerging dormitory communities, low-income neighbourhoods, and slums. This means that 60% of the city's total population does not receive adequate SWM services.

Waste often piles around container sites and public spaces, such as markets and main roads, with people entering to scavenge due to the lack of consistent services (see Figure 2). Indeed, Oteng-Ababio (2022) warns of an impending urban waste crisis should the status quo remain. The contracting system requires re-evaluation to ensure equitable waste collection across all communities. Implementing tangible interventions to improve conditions in the informal settlements is necessary to ensure harmonised and accessible SWM services.

FIGURE 2: Scenes of scavengers operating at selected landfill sites in Accra



Source: Author's fieldwork (2022)

Lack of recognition of the informal sector

The informal waste sector plays a crucial role in MSWM architecture but lacks recognition and legal protection. Informal workers provide key services to underserved, lower-income areas. They are also the main providers of recycling services, contributing enormously to the 10% of Accra's waste that is recycled. Despite this key role in recycling efforts, the sector remains marginalised and vulnerable to legal repercussions. Our findings are unequivocal in their conclusions: the current policy framework fails to acknowledge their vital role, hindering sustainable MSWM efforts. This failure was encapsulated in a statement by the waste management department officials of the Accra Metropolitan Assembly (AMA):

“We are running the city in a way that is victimising minority groups like waste pickers and pushing them to the edges. Such an act of cleaning the city mainly impacts marginalised communities. However, without a doubt, the city is a poorer space without informal operators.”

About 99% of waste contracts in Accra are franchised to formal service providers at a huge economic cost. However, these service providers appear overwhelmed by Accra's rapid urbanisation as well as changing waste volume and composition. This challenge is exacerbated by the city authorities' inability to settle their financial obligations for timely services. Neither taxed nor monitored, the informal sector contributes significantly to Accra's economic fortunes by collecting recyclable materials and reducing the waste to be landfilled at no financial cost to the city authorities. The sector “would have been in crisis” without the crucial contributions of informal actors (Oteng-Ababio, 2020). Many urban low-income individuals make a living by sorting through garbage for reusable materials, cleaning it, and selling it up the value chain. However, with no formal relationships between municipalities or scrap traders, these workers often remain marginalised and largely invisible, resulting in discrimination and less efficient contributions from the informal sector.

Harmonising the institutional architecture

Accra's waste governance structure suffers from fragmentation among ministries, leading to inefficiencies and regulatory overlaps. The waste governance structure comprising MESTI¹, MSWR², and MLGRD³, with each ministry operating independently on aspects of SWM, is problematic. The MESTI, for instance, is responsible for plastic and e-waste handling, which is also bestowed exclusively to MSWR per LI 2087. The current institutional setup impedes sustainable waste management frameworks and undermines local initiatives to better manage

¹ MESTI - Ministry of Environment Science Technology and Innovation

² MSWR - Ministry of Sanitation and Water Resources

³ MLGRD - Ministry of Local Government and Rural Development

waste. From our analysis, the effects of these overlapping ministerial regulatory regimes are complex and must be avoided to achieve sustainable MSWM.

Policy options

Circular economic model

Waste minimisation makes good environmental, economic, and business sense by reducing operating costs and long-term liabilities for remediation and clean-up. Our analysis revealed that waste minimisation is yet to influence Accra's residents. Thus, any new waste policy must make value addition a priority. While there are many ways to add value, composting is a great option. This approach is essential in Accra, where about 60% of the waste is compostable. As indicated earlier, the high moisture content of the waste makes energy recovery barely feasible.

In contrast, some private entrepreneurs are already composting. The government can support them by drafting the appropriate policy guidelines and creating an enabling environment (for example, through tax breaks and source-separated feedstock) for them to scale up. Ultimately, composting can save money by eliminating the need for waste bags and containers, saving time and effort in filling the bags and containers for pick-ups, and freeing up space in landfills.

Outsourcing for equitable coverage and collection of MSW

While the collection disparities between socioeconomic groups seem to be an implementation challenge, the underlying cause is a dependence on the formal service providers who are already overwhelmed. With the informal sector providing the bulk of collection without the government's support, some services in the lower-income neighbourhoods must be outsourced to them. This, however, requires that the informal service providers organise themselves into cooperatives, pool resources, and build capacity to handle formal contracts. Ghana can learn from Brazil, where the government gives the informal sector waste collection contracts and where they have strong cooperatives that can support themselves and represent their interests (GTZ, 2010). This ensures that underserved communities can access state-sanctioned services while guaranteeing the livelihoods of the informal workers.

Integrate the informal and the formal architecture

Our study showed how Accra's waste architecture discriminates against or completely ignores the informal service providers. The overwhelming evidence points to a thriving informal waste sector that is expertly clearing the mess and filling the gap created by the "receding" formal sector at virtually no cost to the city authorities. Yet, the apparent lack of recognition for their contribution leaves

them marginalised and stigmatised with insecure livelihoods, preventing them from unleashing their full potential.

Maintaining the status quo is not viable. A recommended alternative policy option is to recognise the informal sector's contribution and integrate them into the formal sector as service providers. This must be backed by written guidelines and modification of the existing policies that render the informal sector workers vulnerable. The policy must recognise the precarity and resilience of waste pickers, particularly women. However, a major drawback of this second option is that the informal recyclers, if not properly regulated and supervised, may neglect some occupational health and safety measures, which increases environmental pollution.

An example is the burning of wires to recover copper, a method e-waste workers use. However, this can be managed by adequate supervision and certification of their activities. Further, due to the precarious economic situation coupled with a lack of investment opportunities, inadequate training, and the need for cooperation among municipalities, the potential for generating employment opportunities in the informal waste sector is far from exhausted. Examples include Brazil, Egypt, India, and Pakistan, where the government facilitated the integration of the informal sector with policies (GTZ, 2010). While there are no empirical evaluations, an initiative in India called SWaCH (Solid Waste Collection and Handling), a cooperative of informal waste pickers, shows that integration is workable and can yield promising results (see Box 1).

BOX 1

SWaCH cooperative was established in 2007 in Pune to offer doorstep garbage collection services. It operates autonomously but has received financial support from the Pune Municipality (PMC) for five years. During this time, it aimed to explore revenue sources and become self-sustainable. The PMC covered management, equipment, infrastructure, and certain welfare costs during the start-up phase. User fees are collected, and recyclable income is distributed among waste pickers. Governance includes waste pickers and PMC representatives. Currently, SWaCH, which is self-sufficient, serves all 14 administrative wards of the PMC, integrating 1,500 waste pickers and serving 200,000 households.

Source: GTZ (2010)

Institutional restructuring

Studies in Accra, including this one, have empirically revealed that singling out plastic and electronic waste and treating them with “tailor-made” policies under a ministry (MESTI) negatively impacts attempts to manage the SWM architecture (waste hierarchy) holistically. It is imperative to harmonise the sector’s guidelines

to create a coherent and comprehensive approach that is progressive and aligned with modern management practices. This will help avoid power-wrangling and overlapping roles and responsibilities among sister ministries and improve accountability. Countries such as Uganda, Tanzania, and Malaysia have one state ministry responsible for waste management. Maintaining the status quo in Ghana will perpetuate the challenges currently facing the sector.

Conclusion

Too often, taking on the waste challenge requires more than simply changing what people buy, developing better recycling programmes, or cleaning up the environment. The problem is more complex and requires a systemic evaluation, considering the connections between waste, conservation, and society and how they work together to find local and regional solutions. Poor waste management can hurt biodiversity and human health directly and indirectly, while effective management helps the environment and participating communities. This study identified the challenges Accra faces in the quest for sustainable waste management, highlighting four policy gaps. The first is the linear waste management model, where landfilling is prioritised over more sustainable options such as composting. There are currently no policy guidelines for sustainable alternatives, including composting. Secondly, the outsourcing of waste collection by the city authorities solely to formal service providers who are under-delivering to the detriment of the more efficient informal sector, which inadvertently creates disparities in collection rates. Thirdly, city authorities do not recognise the contributions of the informal sector. This development has led to the marginalisation and endangerment of their livelihoods. Finally, the fractured institutional architecture is inefficient and ineffective, requiring strong political will and policy interventions.

Recommendations for policy consideration

- The country must go beyond landfilling to include local strategies such as source separation and recycling, mainly composting, consistent with and in synergy with regional aspirations.
- The city authorities must consider outsourcing some waste collection services to informal service providers, particularly in low-income areas. However, informal collectors must form cooperatives to benefit from such interventions effectively, as in Brazil.
- Recognising the role of the informal sector by the national authorities is necessary to create the conditions to optimise their contribution to waste management. Taking inspiration from India, integrating the informal sector is key to achieving optimum results in waste management in the city.
- The government must streamline the waste management regulatory policy framework with specific agencies, procedures, and responsibilities. In

Accra (and more broadly in Ghana, for that matter), there needs to be a singular governmental body handling and regulating all aspects of MSWM.

References

- Asare, W., Oduro Kwarteng, S., Donkor, E. A., & Rockson, M. A. D. (2020). Recovery of Municipal Solid Waste Recyclables under Different Incentive Schemes in Tamale, Ghana. *Sustainability*, 12(23), 9869. <https://doi.org/10.3390/su12239869>
- GTZ. (2010). *The Waste Experts: Enabling Conditions for Informal Sector Integration in Solid Waste Management: Lessons learned from Brazil, Egypt and India*. Eschborn: GTZ.
- Hong, C. W., Chan, N. W., & Seow, T. W. (2016). Municipal solid waste. In N. W. Chan, H. Imura, A. Nakamura, & M. Ao (Eds.), *Sustainable Urban Development Textbook* (1 ed.). Water Watch Penang.
- Miezah, K., Obiri-Danso, K., Kádár, Z., Fei-Baffoe, B., & Mensah, M. Y. (2015). Municipal solid waste characterization and quantification as a measure towards effective waste management in Ghana. *Waste management*, 46, 15-27
- Oduro-Appiah, K., & Afful, A. (2020). Sustainable Pathway for Closing Solid Waste Data Gaps: Implications for Modernization Strategies and Resilient Cities in Developing Countries. *Solid Waste Management*. doi:<http://dx.doi.org/10.5772/intechopen.94384>
- Oteng-Ababio, M. (2020) The quest for efficient waste management architecture in Ghana, *Field Actions Science Reports* [Online], Special Issue 22 | pp. 24 – 29.
- Oteng-Ababio, M. (2022). Double Standards, Single Purpose: Deconstructing The 'FENCE WALL' for Sustainable Municipal Waste Management, *University of Ghana*.

Further reading

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