

Chapter 5

Existing Realities and Sustainable Pathways for Solid Waste Management in Ghana

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ABSTRACT

The demands of the circular economy and the sustainable development goals call for a critical appraisal of the solid waste management systems of developing economies to divert decision-making towards the development of sustainable strategies and support systems for purposes of modernization. This chapter uses a combination of literature review, network queries to key experts within municipalities, and the authors' experiences and outputs of an ongoing collaborative research to evaluate and present the realities of solid waste management and recycling in Ghana. The goal is to chart a locally appropriate and sustainable pathway to drive system improvement. The analysis and evidence suggest that structural and coordinated cooperation between researchers of higher educational and research institutions and municipal authorities creates an enabling platform to build human resource capacities, to bridge data gaps, to identify what works, and to drive decision-makers' commitment towards the development of realistic action plans and continuous policy strategies.

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INTRODUCTION

This chapter presents the existing realities of solid waste management (SWM) and recycling in Ghana and proposes an evidence-based and locally appropriate pathway to inform sustainable system modernisation. The authors have elaborated an assessment of the physical components and governance aspects of the solid waste management (SWM) system seen through the frame of Integrated Sustainable Waste Management (ISWM). Moreover, the authors have relied on data and research outputs of an ongoing collaborative and participatory research project with selected municipalities within the country that seeks to develop action plans and interventions to modernise the SWM system (Miezah, Obiri-Danso, Kádár, Fei-Baffoe, & Mensah, 2015; Oduro-Appiah, Afful, Kotey, & de Vries, 2019; Oduro-Appiah, Scheinberg, Mensah, Afful, et al., 2017).

Consistent with an ISWM methodology, the authors have analysed the physical system using materials flow diagramming based in part on the Wasteaware benchmark indicator approach (Wilson et al., 2015) for the six metropolitan cities of the country. Wasteaware is increasingly seen as a tool both to assess the physical systems and the governance aspects of the SWM systems of cities and to allow comparability of urban waste systems across countries, regions, and similar income levels. The goal is to aid readers and stakeholders to comprehensively visualise the realities and performance of the SWM system on the ground, and open up the opportunity for stakeholders to contribute to planning.

Although there is a robust literature on the SWM system in cities of Ghana (Boadi & Kuitunen, 2003; Oduro-Kwarteng & van Dijk, 2013; Oteng-Ababio, Owusu-Sekyere, & Amoah, 2017), this chapter seeks, for the first time, to integrate many aspects, and address municipal solid waste (MSW), agricultural and biomass utilisation, biomedical solid waste, waste of electrical and electronic equipment (WEEE), industrial solid waste, and construction and demolition waste. Secondly, the authors of this chapter have relied on the ideas of a working group on system modernisation, that is, involving practitioners in the discussion and the choices made. The objective is twofold:

- To provide a quick and easy reference resource for academia, research institutions, policy makers, solid waste managers, non-governmental organisations (NGO's) and the international community; to support them to identify points of entry for the development of sustainable interventions and support systems for the country's SWM system.
- To create a participatory basis for advocacy and policy development purposes amongst policy-makers.

BACKGROUND

Increasing population growth, rapid urbanisation, technological advancement and the apparent rise in living standards in the 21st century have led to an unprecedented consumption of natural resources and a subsequent increase in the quantities and diversity of solid waste (SW) generated across the globe (Kaza, Yao, Bhada-Tata, & Van Woerden, 2018). In developed and highly industrialised countries, this increase in waste generation has been associated with a range of political and environmental crises, which in turn stimulated the development of a set of integrated waste management and recycling policies and practices to promote public health, environmental control and efficient resource management which have become recognised as good practice in high-income countries in Europe, Oceania, Asia and North

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