

# Chapter 16

## Sustainable Solid Waste Management in Developing Countries: Tanzania Outlook

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### ABSTRACT

*Resilient economic urbanisation growth in Tanzania signifies national increasing trend of solid waste generation that necessitates proper management. About 50% of Tanzanians suffer from intestinal schistosomiasis and soil transmitted helminths resulting from haphazard solid waste disposal. Various efforts to address solid waste management in Tanzania include establishment of public private partnership and major reforms in policy and regulatory frameworks. Despite these efforts, 60% of waste generated is mismanaged and normally disposed in illegal places along roadsides, sewage canals, and reserved open spaces. Cornerstone of proper solid waste management lies on separation of the waste at source. It is recommended that 'the smart garbage collection bin' be adopted at community collection points and charging higher prices for generators who do not separate the waste.*

### BACKGROUND

Solid waste has been defined differently. Vaccari and Vitali (2015) described solid waste as items that are useless (unwanted) to initial user which are neither liquid nor atmospheric emissions. Meanwhile, Leblanc (2018) delineated solid waste as garbage arising from animal and human activities that are discarded as unwanted and useless. The solid wastes arise from human activities such as agricultural, industrial, mine wastes and production process from all subsequent steps of converting raw materials to

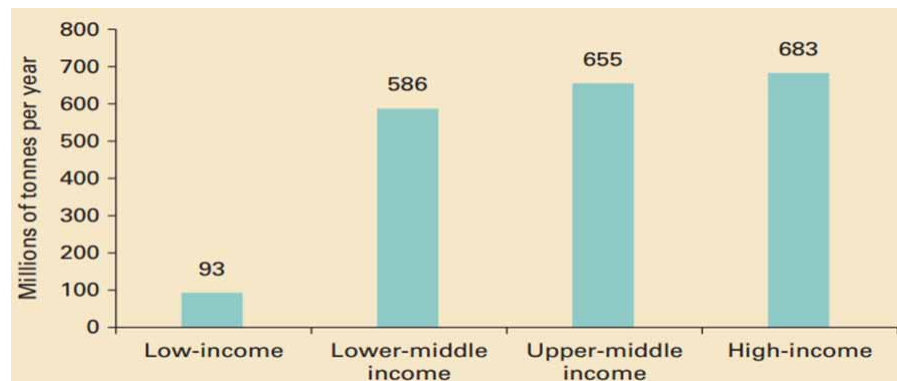
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consumption goods along the chain; and the discarded leftovers at consumption point (Tchobanoglous et al., 1993). In Tanzania solid waste is defines as “non-liquid materials arising from domestic, street, commercial, industrial and agricultural activities that includes refuse or garbage, non-liquid materials arising from construction and demolition activities, garden trimmings and mining operations, dead animals and abandoned cars scraps” (URT, 2004). All scholars commonly agree that solid waste refers to non –liquid nor gaseous wastes that have no further use from generator’s perspective.

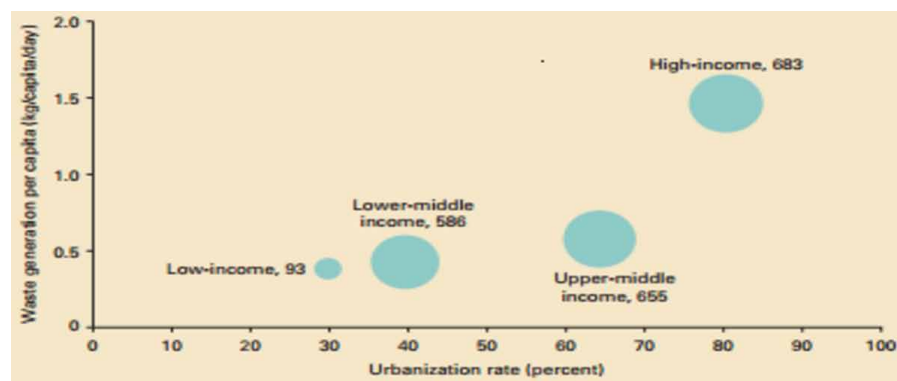
Resilient economic development and growing urban population are key elements that are associated with incremental trends of solid waste generation. This is because as economies urbanize, people’s incomes increase due to increased economic activities. In turn the increased income raises consumption of goods and services that enlarges the amount of solid waste generated (IFC, 2014).

With regard to economic development, Khatibu (2015) states that daily generation of solid waste per person rises as the national per capita income increases. In fact, Khatibu (2015) found that low income countries earning per capita income of up to US\$ 5,000 generates lower solid waste than higher income countries. While low income countries generate solid waste per capita ranging between 0.3–0.9 kg/day; high income countries generate between 1.4–2.0 kg/day (Khatibu, 2015). Similarly, UNDESA (2010) portrayed direct relationship between solid waste generations and national incomes (Figure 1).

*Figure 1. Generation of waste according to income (Source: Kaza et al., 2018)*



*Figure 2. The effect of urbanization on waste generation (Source Kaza et al., 2018)*



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