



Solid Waste Management Practices in Ghana: Challenges and Prospects

Aaron Kwasi Nartey (MSc)¹; Patrick Nyarko (MSc)¹;

¹Every Human Life, Ghana., Kumasi-Ghana

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AUTHOR DETAILS

Email:

aaronnartey@rocketmail.com

A World Bank report revealed that waste generation has been on the ascendancy, with the world's cities generating 2.01 billion tons of solid waste in the year 2016 ¹. This figure is expected to reach 3.40 billion tons per year by 2050 due to increasing urbanization which is a growth of 70% ^{1,2}. In the USA which is a developed country, the generation rate of municipal waste has risen from 217.3 million tons per day in 1995 to 254.1 million tons per day in 2013 ³. On the other hand, sub-Saharan Africa countries which are developing countries, generate 62 million tons of solid waste per year ² and this justifies that the more affluent a country is the more waste they generate.

Proper management of solid waste has become a challenge for most developing countries in recent years. Urbanization, population growth and affluence are associated with the challenge of proper waste management in urban areas of developing countries - since the higher the income level and rate of urbanization, the greater the solid waste generated ^{2,4}.

Unfortunately, sub-Saharan African countries like Ghana only focus on waste collection instead of waste management. Waste management comprises all activities and actions needed to properly manage waste from inception to the final disposal ⁵. These activities and actions include collection, transport, treatment and disposal of waste as well as monitoring and regulation ⁶. Also, sanitary landfilling is among the best methods of decreasing the volume of waste products in the environment ⁷; however, the lack of suitable land for landfill sites is a key issue ⁸. Therefore, the lifespan of a landfill site can be prolonged when waste reduction at the source is well considered as an aspect of Municipal Solid Waste (MSW) management.

Waste generation is linked with human activities resulting from areas such as household, public places and city streets, shops, offices and hospitals. Waste can be classified according to their properties (biodegradable or non-biodegradable), effects on human health and the environment (hazardous and non-hazardous) and the origin and type of waste (municipal solid waste, biomedical wastes, industrial wastes, agricultural wastes, fishery wastes, radioactive wastes and e-wastes). Generally, wastes have two main kinds; liquid (wastes in liquid form) and solid wastes (wastes in solid form). Solid waste can be subdivided into municipal solid waste and agricultural wastes. Municipal solid wastes emanate from increasing population levels, booming economies, urbanization and increase in living standards ^{9,10}, municipal solid waste has become the most important by-products of an urban lifestyle, and is growing even faster than the rate of urbanization. The waste often comes from households, offices, hotels, shops, schools and other institutions. The major components are food waste, paper, plastic, rags, metal and glass ¹¹. Ghana generates about 12,710 tons of waste per day with only Accra generating a quantity of about 3,000 metric tons of waste every day ^{12,13}. Residents in developing countries, especially among the indigent urban communities, are severely impacted by poor waste management compared to their counterparts in developed countries ¹. Over 90% of waste generated in low-income countries are openly burned or disposed in unregulated dumps ¹. These practices create environmental consequences and serious health and safety issues such as injuries, chronic diseases, infections among others. Waste that is poorly managed serves as a breeding ground for disease vectors and contributes to global climate change through methane generation ¹.

Management of waste presents an economic burden on the world economy. The global cost of dealing with wastes is directly proportional to the amount of waste generated. Globally, in 2010, \$205 billion was



spent in managing wastes ¹⁴. This is expected to rise to \$375 billion by 2025, with the sharpest cost increases in developing countries ¹⁴.

Solid waste management in Ghana has been faced with several challenges which includes: poor attitude of the general populace towards waste disposal sanitation, unplanned human settlement especially in the urban centers, poor planning of waste management programs, low or no public education on the good sanitation, inadequate waste infrastructure, lack of political will in enforcing sanitation bye laws, inadequate operational funds and equipment to support waste management activities among others ^{15,16}. Also, there is lack of reliable national data on waste generation and composition to inform effective planning on waste management in Ghana ¹².

It is imperative that developing countries such as Ghana adopt measures that will be sustainable, efficient, cost effective and environmentally-friendly to help in proper waste management. Adopting good measures for waste management in Ghana will help in the achievement of the Sustainable Development Goal (SDG) three (3); which seeks to ensure healthy lives and promote well-being for all, goal six (6); which seeks to ensure availability and sustainable management of water and sanitation for all and goal eleven (11); which also seeks to make cities and human settlements inclusive, safe, resilient and sustainable.

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