

Ghana - 3.7 Waste Management and Recycling Infrastructure Assessment

Overview

Globally, the volume of solid waste generated is increasing because of population density, economic growth, urbanization, and industrialization. It is estimated that an average of 1.9 billion tons of solid waste is generated annually in most cities in the world. Effective solid waste management thus plays a major role in combatting the health and environmental concerns urbanized cities suffer from, particularly in sub-Saharan Africa (SSA). In SSA, waste generation is estimated to be about 62 million tonnes per year. The effective and efficient management of solid waste is one of the biggest challenges local government authorities faces, especially in urban settings. Increased population growth and urbanization have resulted in increased generation of large quantities of solid waste across many cities in developing countries, outstripping local authorities' ability to manage and dispose of solid waste in a sanitary manner. Despite spending 30 to 50% of their operational budgets on solid waste management, cities in low- and middle-income countries such as Ghana, only collect between 50 and 80% of the waste generated.

In Ghana, about 12,710 tons of solid waste is generated daily, with only 10% collected and disposed of at designated dumping sites. A major challenge in the management of solid waste in Ghana is the collection and disposal process, which are labour-intensive and often not effective. In urban cities in Ghana, issues relating to proper solid waste disposal is a major challenge for the local government authorities. City authorities and waste companies are often overwhelmed by the volume of waste generated daily. The lack of well-planned and efficient strategies to manage waste is one reason for the poor state of solid waste management, particularly by municipal authorities in Ghana. It is estimated that 50 to 70% of the budget of municipal authorities is used to tackle the management and disposal of waste. It has been reported that city authorities in Ghana spend about GHc 6.7 million (US\$ 3.45 million) annually on the collection and transport of waste for disposal, and GHc 550,000.00 (US\$ 0.28 million) per month to pay waste contractors and for landfill maintenance. Poor sanitation because of indiscriminate waste disposal alone is estimated to cost the country \$290 million every year- an equivalent to 1.6% of the country's Gross Domestic Product.

Major factors hindering proper management of solid waste in Ghana are rapid population growth and urbanization, inadequate supply of waste bins, lack of waste transportation systems, low public awareness on the health consequences of poor waste management, and weak enforcement of environmental regulations. Besides, urban residents' poor behavioural practices towards solid waste is reflected in littering the streets and water passage-ways as well as other public spaces. Low technical know-how on proper solid waste management processes by waste company managers further contribute to the challenges regarding solid waste management. The consequences of indiscriminate or unsafe disposal of solid waste into open drains and water bodies could contribute to flooding and disease outbreaks. Despite successive governments' initiatives such as the empowerment of local government authorities to regulate waste management and policy on private sector participation in waste control, challenges remain in managing waste in many urban cities in Ghana. Other challenges

such as inadequate waste infrastructure, inadequate equipment, and insufficient operational funds to support waste management activities have also been reported.

There is a need for greater co-ordination in the implementation of waste management plans and programmes, and in the overall management of hazardous and non-hazardous waste. To achieve a network of integrated waste management facilities, much more effective national, regional and District co-operation is required. There is a need for better enforcement of existing waste legislation and byelaws to prevent for example, illegal disposal of waste. Waste is often dumped without proper authorisation, and this is becoming a more significant problem.

Despite its links to public health and environmental protection, and its salience in the public consciousness, progress on improving Solid Waste Management (SWM) practices remains slow in Ghana. In all urban areas of the country, solid waste is indiscriminately thrown in the streets, drains, or the sea; crudely dumped at unapproved sites; or burnt on-site. Problematic household practices regarding solid waste disposal are compounded by inadequate, ineffective, or unaffordable service delivery arrangements. In most cases, waste transfer stations (such as skips) are poorly located, inadequate in number, and emptied irregularly. Regular door-to-door collection services, although reasonably widespread, are selective in who they serve due to poorly defined or unenforced zoning. In many Metropolitan, Municipal and District Assemblies (MMDAs) service providers are not accountable for the quality of services they deliver due to weak governance, procurement and monitoring and evaluation systems. Problems also extend to waste disposal and landfill sites - which are poorly managed, lacking in capacity and unsafe. Moreover, waste reduction, re-use, and recycling activities remain extremely localised and small scale.

Used cloths:

In 2022, Ghana imported \$164M in Used Clothing, becoming the 9th largest importer of Used Clothing in the world.

Importation of used goods, usually termed as 'second hand' products has been like a cankerworm eating slowly at Ghana's economy as used items such as electronics, cars, and clothes in commercial quantities are shipped into Ghana on a regular basis. Even as the country continues to bear the menacing effect of this, the threat posed by the importation of used clothes in recent years has become much more devastating.

Earlier in 2023, it was reported that heaps of unwanted clothing have now resulted in an environmental crisis in Ghana. The Tony Blair Institute for Global Change gave the stipulations that, out of the 65 million tons of used clothing sent to Ghana in 2019, **about 40%** which were not sold were discarded and these items notoriously ended up in landfills and in the sea.

Again, researchers have argued that the fast fashion second-hand market has affected seamstresses' lives in various facets from business to livelihoods as the clothing industry in Ghana has seen a shift from the traditional demand for custom-made apparel to Westernized, mass-produced clothing ([Doe, 2022](#)). Being cheap and readily available to the consumer, [Baden & Barber](#) (2005) has noted that this thriving second-hand clothing market played a major role in undermining industrial textile or clothing production and employment in West Africa since the 1990s.

They further claimed that Ghana's locally produced clothing industry has suffered a significant decline on this accord.

Aside from causing this serious decline in the Ghanaian fashion industry, the importation of second-hand clothes has been reported to cause negative effects in other sectors of the economy. For example, fishermen are beginning to raise the issue that instead of hauling fish out from the sea, they are rewarded with huge heaps of clothing stuck in their nets.

How is waste collected?

Waste management is competing with more pressing economic and social issues such as social protection programs, education, and health. The government of Ghana has therefore decentralized the waste management system in the country. With this development, local government authorities and private sector actors are now playing key roles in waste management in the country. A study specifically analysed the involvement of the private sector in solid waste management, and the quality of waste management services. Through a survey of 312 households, the study analysed the performance improvement, regulatory policy, and sustainable service delivery of solid waste management in the municipalities. The study found that there were no mechanisms for full cost recovery to include majority of the residents, who patronize communal collection service. The study therefore recommends the adherence to normative standards and agreed rules, adoption, and use of appropriate cost recovery strategies for low-income groups as well as the restructuring of institutional arrangements to ensure user involvement and enforcement of legislation to improve municipal solid waste management in Ghana. [link](#)

The average Ghanaian produces about 0.47 kilograms of plastic waste per day. Accra for example, generates about 1500 tons of solid waste per day (Ghana landfill guidelines, July, 2002) of which only about 55% is collected and disposed. It is therefore common to find mountains of solid wastes uncollected for months especially in the urban areas. Only about 5% of plastic waste in Ghana is recycled. An estimated 86 percent of Ghana's waste plastic load is improperly disposed-off resulting in plastics clogging up stormwater drains, rivers, and streams and ending up in the oceans. It is estimated that 250,000 metric tons of plastic waster are dumped from Ghana into the Atlantic Ocean (World Bank, 2020).

What are the country regulations with regards to waste management and recycling (provide legislation details and/or website/contact information for government bodies regulating waste management in country)?

The Ministry of Environment, Science, Technology, and Innovation (MESTI) [link](#)

The Environmental Protection Agency (EPA) [link](#)

The Ministry of Sanitation and Water Resources (MSWR) [link](#)

The Ministry of Local Government and Rural Development (MoLGRD) [link](#)

Who provides the services (government of private companies)?

Municipal Solid Waste in Ghana is handled by private companies contracted by the various municipalities. These contracts are reviewed in 5-year intervals based on performance reviews. People can contact the Municipal Health department of their municipality for information on which contractor works in their area.

Status of the landfills in the country?

Ghana currently has only five engineered landfills; however, most of them are dysfunctional. Accra, for example, has no landfill site; therefore, most of the waste collected from the city is taken to Kpone in Tema, a city 24 km from Accra.

A study showed landfill sites were found very close to residence, water bodies and highways. 65%-75% of generated municipal solid waste ended up in landfills. Open dumping was the predominant form of landfill types in Ghana as it was found in most of the communities in municipalities and districts. Result obtained from the study revealed that vehicles and equipment cost are the highest contributor to the operating cost in all the three sites; it ranged between 58.4%-61.9% of the total operating cost. The cost of fuel and lubrication fluids represented about 22% of the total operating cost. Frequent break down of equipment, lack of funds to run a more efficient operation, inaccessible nature of the road during raining seasons and encroachment due to absence of fence, were some of the challenges facing landfill operations in Ghana. Recycling of waste was highly recommended to divert more waste from ending up in landfills, thereby increasing its life span. Metropolitan, Municipalities, District Assemblies and private service providers should be made to follow the basic operational controls and standards in relations to landfills in Ghana as specified in landfill operational guidelines with strict enforcement of the policy by Environmental Protection Agency. [source](#)

Are there any recycling programme in the country (including both private and public/governmental recycling facilities)? A study reported that the absence of effective waste management and recycling systems is causing public health concerns in developing countries. This leads to diseases, hardship, and negative effects such as loss of income due to illness, and increased health care expenditure for the underprivileged. Experience shows that regular supply of waste bins at various collection points improve easy accessibility for the residents to dump waste.

The study also revealed that waste disposal sites are not engineered, leading to solid waste littering in open spaces because of using "archaic" practices in waste management. Recommended methods such as recycling and engineered landfills are either absent or rarely used. Instead, archaic practices such as open burning, landfilling, and open dumping of waste are increasingly being used in the Municipality. These archaic practices release toxic organic pollutants such as polycyclic aromatic hydrocarbons, dioxins, and furans into the air, with negative effects on the eco-systems. The findings suggest poor adherence of the two study waste companies to Ghana's Environmental Sanitation Policy (ESP) on final disposal methods. Ghana's ESP specifically recommends technologies for solid disposal such as sanitary landfill, controlled dumping with cover, incineration, composting, and recycling as standards for the final disposal of urban and large industrial waste. To ensure adherence to the ESP, regulatory

agencies such as local authorities in Ghana need to be strengthened to strictly enforce legislation and by-laws on sanitation and solid waste management in the municipality.

To address the problem of waste management, Government has over the years put in place adequate national policies, regulatory and institutional frameworks. An Environmental Sanitation Policy was formulated in 1999. This policy has currently been amended and strategic action plans developed for implementation. Various relevant legislations for the control of waste have also been enacted. These include the follows:

- Local Government Act, 1990 (Act 462)
- Environmental Assessment Regulations, 1999 (LI 1652)
- Criminal Code, 1960 (Act 29)
- Water Resources Commission Act, 1996 (Act 522)
- Pesticides Control and Management Act, 1996 (Act 528)
- National Building Regulations, 1996 (LI 1630).

In addition to the above policies and legislations, the Ministry of Environment, Science and Technology, the EPA, Ministry of Local Government and Rural Development and the Ministry of Health have prepared the following guidelines and standards for waste management:

- National Environmental Quality Guidelines (1998) [link](#)
- Ghana Landfill Guidelines (2002)
- Manual for the preparation of district waste management plans in Ghana (2002)
- Guidelines for the management of healthcare and veterinary waste in Ghana (2002) [link](#)
- Handbook for the preparation of District level Environmental Sanitation Strategies and Action Plans (DESSAPs). [link](#)

For more information on waste management company contact details, please see the following link: [4.12 Waste Management Companies Contact List](#).

Non-Hazardous Waste Disposal

Poor sanitation and municipal solid waste management has contributed to pollution and unsightly conditions hindering economic development and causing public health problems. It is estimated that the average daily solid waste production is 0.45kg per capita per day. Accra for example, generates about 1500 tons of solid waste per day (Ghana landfill guidelines, July, 2002) of

which only about 55% is collected and disposed of. It is therefore common to find mountains of solid wastes uncollected for months especially in the urban areas. [source](#)

Domestic wastewater in Ghana is mostly discharged directly into drainage systems that empty into water bodies such as rivers, lagoons, and streams. By 2000 about 80% of sewage treatment

facilities in Accra were not functioning thus placing a lot of pressure on the receiving streams and rivers in the city (EPA, 2000). The extent of pollution especially in the Odaw River in Accra

is so intense leading to drastic decline in desirable aquatic organisms. It is also estimated that the Chemu lagoon in Tema also receives over 2million m³ of discharges per day from industries in the catchment area. [source](#)

<https://ghanawasteplatform.org/wp-content/uploads/2021/11/National-Solid-Waste-Management-2020.pdf>

Hazardous Waste Disposal

The EPA oversees and governs all matters pertaining to hazardous waste in the nation, coming whether from homes or industries. MMDAs, or Metropolitan Municipal and District Assemblies, are responsible for managing garbage "on the ground," while EPA offers technical assistance by establishing environmental standards and guidelines. Over the years, MMDAs have focused on managing solid and liquid waste due to financial, infrastructure, logistical and technical limitations of managing hazardous waste.

Following a reform in 2010, contractors had to register polluters within their allocated zones for waste collection and disposal. The polluter would have to pay a monthly fee to the contractor for collecting refuse twice a week. This reform was adopted by most MMDA's in the Greater Accra region and has worked well for them. Should a contractor come across hazardous waste in the discharge of their duty, the MMDA of the area would be notified for transfer to an approved disposal location. [source](#)

Medical Waste Overview and Disposal

Ghana's attempt to regulate health care waste management started in 2002 with the development of guidelines on health care waste management by the Environmental Protection Agency (EPA). In 2006, the Ministry of Health developed the health care waste policy and guidelines. This guidance document improved health care waste management in the country.

With support from the UNDP-GEF medical waste management project, the Ministry of Health has revised the existing National Health Care Waste Management (HCWM), policy and guideline, 2006 and has produced two separate documents- A National Health Care Waste Management Policy and a National Guideline for Health Care Waste Management countrywide. This policy is replacing the 2006 policy and introduces new technical and administrative policy issues to enhance waste management in health care facilities. [source](#)

The greater part of waste generated by health institutions are not hazardous and can be managed like household waste. This constitutes about 75 - 90% of all waste generated in health institutions. However, the remaining 10 - 25 % is hazardous and requires special arrangements for management (WHO, 2014). Examples of hazardous health care waste are pathological waste (e.g. tissues and body fluids), pharmaceuticals (expired or unused drugs etc.), sharps (e.g. syringes, disposable scalpels, scalpel blades, etc.), non-sharp infectious waste (swabs, bandages, disposable medical devices, etc.), chemicals (solvents, disinfectants, nano-medical waste etc.) and radioactive (spent sources of radioactive materials etc.), as well as wastewater including effluents from mortuaries.

Healthcare waste management in developing countries does not comply with best practices and regulatory framework for healthcare waste management. An appraisal of healthcare waste management in developing countries conducted by the WHO showed a significantly high number of healthcare facilities did not implement guidelines on healthcare waste management. Much needs to be done to manage healthcare wastes in developing countries like Ghana to address the environmental and health implications associated with poor healthcare waste management. The understanding of the characteristics of healthcare waste and the best practices for its management are critical to proper healthcare waste management.

Healthcare waste, also called medical waste, comprises of non-hazardous general healthcare waste (or domestic waste) and hazardous healthcare waste such as sharps, infectious, chemical, radioactive, and pharmaceutical waste. The general waste is that waste which is uncontaminated with blood, body fluids or other harmful agents, and composes of material such as paper, fabrics, glass, food residues and containers. Infectious waste is considered hazardous due to actual or presumed biological, chemical and/or radioactive contamination. It comprises those waste that is suspected to contain pathogens and therefore poses a risk of transmission of diseases. These include waste contaminated with blood and other body fluids, cultures from the laboratory, microbiological stocks, excreta, and other materials that have had contact with patients with highly infectious diseases in isolation wards. Materials or items contaminated by or containing pharmaceuticals and expired pharmaceutical products that are expired or no longer needed are classified as pharmaceutical wastes.

WHO and UNEP recommend guidelines for safe healthcare waste management and prevention of accumulation of waste generated. The technologies for treating and disposal of healthcare waste include locally built incinerators, open pit burning, hydroplanes, sharp pits, autoclaves, superheated steam sterilization and microwave disinfection, and landfilling of residue after treatment. [source](#)

National legal and regulatory framework:

Waste management in Ghana is a multi-sectorial effort with the Ministry of Sanitation and Water Resource, Ministry of Local Government and Rural Development (MoLGRD) and the Environmental Protection Agency (EPA) playing key roles as implementer and regulator respectively. The responsibility for implementation is discharged through the Municipal, Metropolitan and District, Assemblies (MMDAS) which are directly under the Ministry of Local Government and Rural Development. The Hazardous and Electronic Waste Control and Management Act, 2016 instituted by the EPA has “Medical waste management” as one of its schedules. The Hazardous waste regulation has also been developed and passed to ensure effective implementation of the policy by all stakeholders. Other existing laws which have relevance for Health Care Waste Management assign certain functions to some institutions such as district assemblies and the EPA but lacks specific provisions for dealing with health care waste in a comprehensive manner. The following existing laws are those having relevance for Health Care Waste Management in the country:

- The Constitution of the Republic of Ghana, 1992
- The Environmental Protection Agency Act, 1994(Act 490)
- Environmental Assessment Regulations, 1999(LI 1652)
- The Local Government Act, 1993 (Act462)
- National Building Regulations, 1996(LI 1630)
- Town and Country Planning Act, 1945 (CAP84)
- Food and Drugs Law 305b (1992) 18
- Mortuaries and Funeral Facilities Act, 1998 (Act 563)
- The Criminal Code, 1960(Act 29)
- Public Health Act of Ghana, 2012 (Act 851)
- Hazardous and Electronic Waste Control and Management Act, 2016 (Act 917)

The Constitution of Ghana enshrines the human rights of the individual and requires the President to report to Parliament at least once a year on all the steps taken to ensure the realization of policy objectives contained in Chapter 6 and, the realization of basic human rights, a healthy economy, the right to work, the right to good health care and the right to education (Article 34)

UNDP-GEF Medical Waste Management Project

Ghana's Policy on Healthcare Waste Management (2006) has been reviewed to meet currently accepted best practices, paying attention to the requirements in relevant international conventions on waste (Basel, Stockholm, and Bamako Convention). A new National Guideline has been developed providing step-by-step processes on how healthcare facilities can

efficiently manage their waste to reduce risks associated with improper HCWM and environmental pollution. Notably, the new guideline harmonised into one document, previously existing guidelines enforced separately by MOH and Environmental Protection Agency (EPA). The harmonisation was done to enhance consistency in enforcement. There are now two documents to guide HCWM in the country:

- National Policy on Healthcare Waste Management to be enforced by Ministry of Health.
- National Guidelines on Healthcare waste management to be enforced by the health and environment sectors.

A national implementation plan has also been developed to enhance the implementation of the policy and guideline.

Under the UNDP-GEF Medical Waste Management Project, three autoclave treatment facilities have been installed at the Tegbi Health Center, the Eastern Regional Hospital, and the Cape Coast Teaching Hospital for the treatment of infectious health care waste. These autoclaves facilities have capacities of 250litres, 500 litres, 500 litres and 400litres respectively, and have transportation systems to enhance the movement of infectious waste in nearby healthcare facilities to operate as a cluster infectious health care waste treatment system. Additionally, the project has promoted the utilisation of a private non-incineration central treatment facility (Zoompak) in Accra and has facilitated an increase in its clientele by over 80 health facilities in the Greater Accra Region through advocacy on adoption of best HCWM practices.