

Status of Solid Waste Management in Umuahia Municipality, Abia State, Nigeria.

Egesi O. C., Ikeuka P. I. & Alum-Udensi O.

Department of Fisheries and Aquatic Resources Management,
Michael Okpara University of Agriculture Umudike,
Nigeria.

Uchendu, U. I.

Department of Environmental Management and Toxicology,
Michael Okpara University of Agriculture Umudike,
Nigeria.

Email: okeyalum@yahoo.com

Abstract

Umuahia, like most towns in Nigeria has experienced population growth and urbanization. The increasing difficulty in managing solid wastes in Nigeria has become one of the most intractable environmental issues. There is unprecedented increase in the volume of waste generated by urban centers, industrial plants and educational institutions and markets around Umuahia. This paper highlights the current solid waste management practices in Umuahia, Abia state Nigeria.

Keywords: Municipal Solid Waste (MSW); Umuahia; Landfill; Skip bins.

INTRODUCTION

Waste generation has been part and product of human activity since the beginning of time. Improper waste handling and management is a great threat to the environment, public health and safety. Nature has the capacity to handle much of the waste produced within an environment over time through dilution, dispersion, degradation, transformation thus, reducing the impact of unwanted materials in the environment. This is the natural assimilative capacity of the environment and imbalances may occur where the natural assimilative capacity has been exceeded (Tchobanoglous *et al.*, 1993). The increasing difficulty in managing solid wastes in Nigeria has become one of the most intractable environmental issues. There is unprecedented increase in the volume of waste generated by urban centers, industrial plants and educational institutions and markets. In Nigeria, the commonly practiced waste management option involves the collection of mixed waste materials and subsequently dispose same at designated dumpsites without treatment. It is not common practice to separate waste materials at source or at any point during its management (Adekunle *et al.*, 2011). Municipal Solid Waste (MSW) Management is a globally challenging issue, especially in developing countries (Zamorano *et al.*, 2009; Jalil, 2010; Adekunle *et al.*, 2011). The standard of waste management is poor and outdated in many developing countries, with little or no documentation of waste generation rates and composition (Achankeng, 2003). Municipal solid waste management in these countries is dotted with inefficient collection and storage systems, indiscriminate toxic and

hazardous waste handling and inefficient utilization of disposal facilities and site space where available.

Umuahia, like most towns in Nigeria has experienced population growth and urbanization. Unplanned urbanization such as experienced in Umuahia affects land use and city plan, which invariably affects municipal services such as waste management leading to illegal dumping or fly tipping. Illegal dumps with time become Dump Mountains in the middle of residential areas, with health hazards and threatening odours. They also provide habitat for rodent and pest, disease vectors and reduces the aesthetic value of the surrounding environments as well as contaminate natural resource. The high volumes and rapid growth in waste generation rates and high cost of waste disposal is a challenge in many cities (Onwughara, *et al.*,2010). It has become necessity due to the above mentioned to have an overview and examine the current state and challenges of solid waste management in Umuahia.

Waste generation and composition is greatly influenced by population, income, economic growth, season, climate and social behavior (Anyanwu, and Adefila, 2014). In Nigeria waste streams generally consist of vegetation parts, plastics, paper, textile, metal, medical waste, glass and electronics. The waste is rarely segregated at the source or at any point during handling (Onwughara *et al.*, 2010) and comprises of hazardous and non-hazardous waste.

A reconnaissance survey of the study area was done between January 2014 and April 2016 with the objective to obtain available relevant information on solid waste management in the study area;. The outcome of the preliminary survey was the identification of key facilities and operational modules of ASEPA.

Municipal solid waste in Umuahia: Waste generation in Umuahia is relatively low when compared to other towns in South Eastern Nigeria due to due to the economic status and population density of the town but similar in composition to that of other towns and cities in Nigeria. The increasing dependency of Nigerian on packaged food products has caused upcoming towns and rural areas to have high waste generation from food containers; beverage packs and wraps. The waste is heterogeneous, with mixture of degradable and non-degradable materials (Acheke, 2013). The bulk of the waste consists of plastics, paper, glass, metal and other recyclable components. Automobile waste and abandoned vehicles litter Ohiya section of Umuahia and in some of the streets; paper waste from offices, garbage from residences, medical waste, construction waste (rubble and disused wood), garden waste from streets (particularly after environmental sanitation exercise), industrial waste (ash, saw dust) is common. The degradable components consist, of kitchen waste and garden waste, while oils and lubricants from automobile workshops, medical waste and disused electronics constitute the hazardous waste.

Waste Collection and Storage

The Abia State Environmental Protection Agency (ASEPA) is in charge of solid waste management in Umuahia and the entire state. Routine waste collection is managed by ASEPA and some private companies contracted by them for waste collection, with variations in number of weekly collections in different neighborhoods. Collections in some neighborhoods such as Ehimiri estate are periodically consistent, while in others it is not. Influencing factors such as insufficient collection vehicles, insufficient number of staff etc has affected efficiency. House to house waste collection is not carried out in Umuahia. Homes empty their waste at skip bins placed strategically nearest to them. Waste segregation at source is not practiced in Umuahia, vehicles for waste collection are simple skip trucks which lift the waste-filled skips away to landfills. In Umuahia the agency has provided waste storage containers of various types and sizes. Residential homes purchase plastic bins of about 250litres while shops are expected to have bins of sizes ranging from 15 – 50 litres volume depending on the volume of waste generation.

The agency has provided commercial areas, housing estates, streets and public institutions with large skip bins. Theses skip bins serve as central collection points where smaller bins are emptied and are regularly collected by the agency. Waste collection vehicles used by the Agency include the waste compression trucks which reduces volume of collected waste by compaction before moving them to the landfill located long the Umuahia – Aba Highway near Ubakala.

MSW disposal

Most of the waste from the Umuahia municipality consist of materials that can be recycled, but the ASEPA doesn't recycle waste. Recycling is currently carried out by the informal sector and scavengers. Paper, aluminum cans and glass are sort after by some private recycling companies. In the Municipal waste generated in Umuahia, Abia State, 2% of waste are from individuals, 6% from households, 12% from coporate bodies and 80% from markets (Onwughara, *et al.*, 2010). Scavengers and recycle collectors go house to house to purchase recyclables from home and also collect some

Plate 1: Abandoned Vehicles on streets of Umuahia.



Plate 2: Disused Refrigerators and freezer, abandoned in front of a residential building in Umuahia.



Plate 3: Skip truck dangerously packed across the road while attempting to evacuate a skip bin.



Plate4: Skip bin are wrongly placed on roads in Umuahia. They block the roads and obstruct free flow of traffic.



Plate 5: Indiscriminate dumping of waste on roads by resident.



Plate 6: Solid waste and leachate blocking the highway at the Aba-Umuahia Highway Landfill free from the large skip bins within the town or the ASEPA landfill where every wastes ends up.



The Abia State Environmental Protection Agency owns a poorly managed land fill outside the town along Umuahia – Aba highway. Improperly disposed solid waste poses danger humans and the environment Kadafa, (2013)

At these location all the wastes from thee town are dumped. The Land fill is currently full and overflowing onto the highway causing traffic problems.

Conclusion and recommendations

Rapid development, population increase and changes in consumption pattern have directly and indirectly resulted in the generation of enormous amount of waste, ranging from biodegradable to synthetic non-biodegradable waste. Improper solid waste management has contributed greatly to river pollution and environmental degradation.

Solid waste management in Umuahia can be improved by a better waste management plan, allocation of sufficient funding towards equipment purchase, staff training, maintenance of structures and equipment's, funding to execute a Solid Waste treatment plant, and proper remediation of Aba – Umuahia Highway Landfill. The government should consider the building of a modern waste management facility including a waste recycling plant to ensure that waste from the municipality and its environs is properly managed. Currently, Umuahia has reasonable number of skip bins strategically located, however these bins block roads as no provision was made for their proper placement before acquisition. The bins can be moved off the roads to prevent accidents and the constant traffic holdup caused by their narrowing of roads.

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