Waste Management Problems in Nigerian Urban Cities

By

Christopher Oyemwinmina PhD
Institute of Public Administration and Health Services Management
University Of Benin, PMB 1154 Benin City, Edo State, Nigeria.
E-MAIL: christopher.oyemwinmina@uniben.edu
GSM: +2348025782782
&
Florence Onyemeachi Oahimijie
Institute of Public Administration and Health Services Management
University Of Benin, PMB 1154 Benin City, Edo State, Nigeria.
Email: florence.oahimijie@uniben.edu
GSM: 08158736056

Abstract

Municipal solid waste management has emerged as one of the greatest challenges facing environmental protection agencies in developing countries. Solid waste management is a subset of environmental sanitation. As a result of the rapid in population, the problem of waste and their disposal has become complex. The result of such complexity is the contact of diseases such as cholera, dysentery, typhoid fever, malaria etc. which increases the rate of morbidity and mortality. This paper is a review of existing literatures, observation and information on municipal waste management in Nigeria. This paper examined the hindrances or obstacles to effective solid waste management in Nigeria and proffer the strategies for addressing the problems. It was discovered that absence of concrete Government Policy and political will, lack of citizen mobilization, lack of effective private partnership involvement initiative, and among others constituted the problems. Citizen mobilization, environmental education, legislation and proper monitoring and surveillance *amongst others were recommended.*

Keywords: Management, Waste, Municipal

Introduction

One of the most problematic phenomenon's in the today Nigeria is the management or disposal of solid waste in the course of our daily activities, the generality of the people continue to manipulate the environment thereby creating garbage, which are nuisances that are inimical to the health of the people. These wastes are either biodegraded or non-biodegraded and are mostly conspicuously along the streets and public drains.

Drains and water ways are blocked with refuse while streets are littered with papers, empty packs of sachet water, leaves used in wrapping food, cellophane etc with all drains blocked thereby emitting offensive odour and liable to cause disease outbreak.

According to Akpovi (2004), indiscriminate disposal of refuse creates unhealthy conditions of unsightness, air and water pollution, breeding of flies and other disease vector and agents. This invariably leads to outbreak of diseases such as malaria, cholera, dysentery etc. Njoku (2006), attesting to this, some of the Lagoon front in the country has been turned into a dump for human and all sorts of solid waste. Trucks fully loaded with feces queue up in large numbers to discharge the contents into the lagoon.

Cities are the engines of economic growth, but the environmental implications of such growth need to be assessed and managed better. The critical and most immediate problems facing developing countries and their cities are the health impact of urban services, poor urban and industrial waste management, as well as air pollution especially from particulates which constitutes part of solid waste (Okoli, 2020).

According to (WHO, 2007) about 2.4 billion people globally live under highly insanitary conditions and have such poor hygiene behaviours that their proximity to risks of incidence and spread of infectious diseases are enormous. In Nigeria, there is rapid growth of informal settlements in cities with large urban population and it is also observed that poor sanitary habits by the populate are on the increase, residence lack safe toilet facilities and proper solid waste management apparatus as they engage in open burning of refuse in their domain.

Before the colonial era, solid waste management did not pose a challenge as the density and content of waste generated were more of organic bio degradable wastes which were easily disposed off, into the environment without these wastes constituting a hazard as the receptacle for the wastes were large forests and bushes. Settlements were not as clustered as they are today and most wastes generated soon became part of an intricate constituency of nature food chain. Waste disposal by this means was efficient as it posed no danger to man and his environment. However things changed through the urbanization of many Nigerian cities. The globalizing influences that resulted in these urban growths led the emergence of a new pattern of waste generation and disposed poor planning compounded the already delicate nature of waste management till the present day waste management continues to be a policy challenge and an enforcement debade across the length and breadth of Nigeria.

In the early 1983, a world environment survey report ranked Lagos, the then capital of Nigeria as one of the dirtiest cities in the world. This prompted the Buhari/Idiagbon Government in 1984 to declared War Against Indiscipline, which was culminated into a war on filth (wastes). The presence of solid wastes in heaps around every corners of our surroundings is actually a source of worry and they occupy public places in the town at an alarming rate. Somehow, it mirrors the declining values of our society and Government itself is embarrassed by the poor image created by this development. (Egiyeno, 2010).

The problem of adequate solid-waste management in Nigeria cities has reached mammoth proportion as heaps of refuse are found along major roads, riverbanks, and in open spaces. The level of awareness and environmental education about potential hazards relating to a polluted environment is still abysmally low as people are more concerned with daily survival. This paper aims at educating the necessary stakeholders and the citizenry on the problems of solid waste management in Nigeria with the view of identifying the various strategies to enhance a formidable management of solid waste.

Conceptualization

Management

Management is the harnessing and co-ordinating of personnel, funds, materials and equipment towards the actualization of the organizational goals and objectives. The concept of performance is central to management. It is however obvious that management is not one-person business which means that the concept of management is co-operative effort of the people in carrying out assigned or specific duties, (Aibieyi, 2012). According Edosa and Agbadudu (2004) management is the act of getting things done through and with people. In other words, it is the employment of available materials, financial and human resources in such an efficient manner for the achievement of predetermined goals.

Waste

Waste is any substance which is discarded after primary use or is worthless, defective and no use. Examples include municipal solid waste, hazardous waste, waste water, radioactive waste and others.

Municipal

Municipal is a single urban administrative division having corporate status and powers of self-government or jurisdiction as granted by national and state laws to which it is subordinate (Wikipedia, 2014).

Theoretical Framework

The theoretical Framework adopted for this study is a system theory which is the functionalist theory of Talcott persons. System theory is an organizational theory that explains complex system. It describes any system that works together to produce some results. The general systems theory analyses the nature of relationship between the components of a system; the effectiveness among the various components of a system to the survival of the whole system; and what changes and direction in which the change occurs. Talcott Parsons view society as system, he argued that any social system has four basic functional prerequisites adaptation, goal attainment, integration and pattern maintenance. For effective solid waste management, there it is necessary to engage Parsons functionalist model as a potent way to deal with the concept.

The goals of solid waste management remain the proper isolation of hazards from the populace. The failure of past governments to deal with solid waste can be explained from this theoretical viewpoint as governments have failed to adapt to the emerging problems posed by solid wastes in Nigeria. Also no conscious effort to deal effectively with the waste collected as open dumpsites remain poorly organized by the respective authorities. It has become a matter of necessity for the relevant authorities to adapt the latest technologies and right managerial approach to deal with the menance and also the engagement of the private sector and many such initiatives that can achieve goals of the solid waste management.

Types of Solid Waste

There are two major types of waste, namely High Risk Waste and Low Risk Waste.

Low Risk Waste (Communal Waste)

All solid waste belongs to this category. These include plastics can's cellophane bags bottles, office paper, boxes, edible items, packaging materials etc.

High Rick Waste

Under this category is the Healthcare waste. These include:

1. **Infectious Waste:-** Waste from surgical and autopsy on patience with infectious diseases, as well as waste from surgery patients in isolated ward such as excreta and dressings from infected patient.
2. **Pathological or Anatomical Waste:** These consist of human tissues, body parts, focus, placenta, etc from surgeries.
3. **Sharp Waste (used or unused):** These consist of needles, syringes, scalpel blades, knives, infusion sets, saws, contaminated broken glass and nails.
4. **Pharmaceutical Waste:** These include expired, unused, split and contaminated pharmaceutical product, drugs and vaccines
5. **Genotoxic Waste:** These are vomit, urine or faces from patient treated with cytotoxic drugs.
6. **Chemical Waste:** These consist of discarded solid, liquid and gaseous chemicals.
7. **Radio Active Waste:** Any solid, liquid, or pathological waste contaminated with radioactive isotopes of any kind. (Egiyeno, 2010).

Types of Solid Waste Management

According to Seo (2004) there are four most common methods of municipal solid waste management, namely land filling, incineration, composing and anaerobic digestion. Incineration, composing and anaerobic digestion are value reducing technologies.

Landfilling is the economical, especially in developing countries where it typically involves pitching refuse into a depression or closed mining site. It health and social impacts include odour nuisance; fire and explosion hazards from build-up of methane; increase in the number of vermin which act as disease vectors (birds, rodents and insects) (Osinibi, 2014).

Leachate forms as water percolates intermittently through the refuse pile, and can contain high levels of nutrients e.g. nitrogen, potassium etc. leachate from landfill can enter ground systems, leading to increases in nutrients levels that cause eutrophication (Omenka, 2016).

Incineration is the high-temperature combustion of wastes. Non-combustibles must be sorted out before incineration. It reduces the volume of waste and used for the production of energy in the form of electricity and heat (Seo et al, 2004). Incineration impacts society by production of odours and in the unsightliness of facility (Sridhar, Olubonde & Uwadiegwu, 2017).

Composing and anaerobic digestion use natural microbial organisms to decompose the organic fraction of solid waste (Seo, 2004). The non-organic fraction must be landfilled or incinerated. And the end products can potentially be used as agricultural fertilizers or motor vehicles fuel (Sonesson, 2002) many microorganisms found in compost are known respiratory sensitizers that can cause a range of respiratory symptoms including allegic rhinitis, asthma, and chronic bronchitis (Swan, 2002).

The Problems of Solid Waste Management in Nigeria Municipal Cities

Nigeria is a nation that exemplifies chronic solid waste management problems in conjunction with population growth. It is the most populous country in Africa,

with over 120 million residents (World Bank 1996) and over the past 50 years has had the third largest urban growth rate in the world at 5.51% annually.

The sheer magnitude of solid waste problem in Nigeria is hard to comprehend. There are no public waste bins, as the amount of trash that accumulates in a matter of hours would be more than waste collectors could haul in a day. Nigerian garbage "dumps" are located on the side of the highway at the fringe of cities and slums. Since there are no means for containment, trash often spreads to the road, blocking traffic (Nnamdi, 2012).

The poor and improper management of waste in Nigeria is as a result of the following:

1. Lack of Effective Private Partnership Involvement Initiative

In Edo State, the problem of waste processing are particularly noticeable for many years garbage was located in premise, markets, residential areas and drainages. The overwhelming number of citizens believes that the activities of private operators are much more effective. They remove waste faster the state-owned companies. Private organizations clean up the inner zones more often while state companies mostly work on the main roads (Akande, 2018). However, there is legal tussle between the private waste evacuators and the government operated waste evacuators over rights to operate side by side. The case is currently in the court of appeal. But most of the people in the state believe that the private operators have been more efficient in the operation.

In Ondo State barely 35 per cent of the state capital is currently served by the state agency who rather than increase tariff on a concentrated population, should have increased its coverage of the waste collection services to boost the revenue generation for the state (Alemms-Ozwrawa, 2017).

2. Absence of Adequate Policies, enabling Legislation on Waste Management

The Government policies on the waste management are piecemeal where they exist and are poorly implemented. Most people instead of cooperating

with the waste operators, because they don't want to pay for the service rendered, they bring their wastes to the roads and markets to drop thereby making the roads to be filled with leaps of refuse. This is unacceptable and the Government appears to be turning blind eye, resulting to ripple effects due to non-enforcement of the environmental law.

3. Wrong Attitude of the Public Towards Solid Waste Disposal

Some residents at the urban cities are sabotaging Government's effort in waste management. This is a major challenge some cities have being facing for some time now. This is some resident's inability to bag their wastes and dispose appropriately instead engage in blocking the water channels with their refuse as a result of non acceptance of the refuse dumps that are meant to keep the state clean.

4. The State of the Dumpsites

According to an operator in Lagos State the state of the dumpsites is appalling, especially when it rains, it sometimes takes two or three days for a truck to dump its waste and their vehicles also get damaged due to the poor access road to dumpsites. That a brand new truck that goes to the dumpsite under two months becomes a rickety vehicle following the body dents from the caterpillar push. And despite their association's several letter to the government, nothing has been done. (Guardian, 2017).

5. Rapid Population Growth

The rapid population growth in the urban cities has compounded the problems of solid waste management in the areas. Many reasons are responsible for they geometry increase, amongst are the activities (attack) of Herdsmen in rural areas of Nigeria, lack of social amenities in the rural areas – electricity, pipe borne water, hospital etc, unemployment etc. the rural dwells are drifting to the urban cities in the seek for good life and in process the urban cities are over-populate having it effect on the waste management.

6. Poor Funding

According to Agunwamba (1998) up to now the activities of the state environmental agencies have been hampered by poor funding, inadequate

facilities and human resources, inappropriate technology. All these required huge amount of money which the government only cannot handle, and in the process, effective solid waste management becomes a problem.

7. Lack of Motorable Roads

The lack motorable street is one of the hardicap imposed on garbage collection in most residential areas. The lack of roads into many of the most densely populate sections of the urban areas does not allow access to the municipal garbage collection lorries. In such areas, the length of the walk to the nearest garbage bins especially for women is a deterrent to their use.

The failure of the people to acquire the right attitudes towards garbage disposal and this to join the system of having their garbage regularly carted away instead of the throwing it away near their homes.

8. Poverty

Nigeria has one of the world's highest economic growth rates, averaging 7.4% according to the Nigeria economic report released in July 2014 by the World Bank. But poverty still remains significant at 33.1 in the Africa's biggest economy (Wikipedia 2014). According to Akpovi (2012) poverty induces or forced people to avoid paying for the disposal of wastes instead dispose the waste in any convient place such as an open gutter or vacant plot.

Consequence of Hazards of Solid Waste

1. Public Nuisance (Unsightly)
2. It cause injuries
3. It produces offensive odour
4. Transmission of infectious diseases, such as cholera dysentery, hepatitis A, B, C HIV/AIDS
5. It can cause environmental pollution or degradation e.g. of air, water and soil
6. It may cause fire

Conclusion

Nigeria urban cities are municipal that have chronic solid waste management problems in conjunction with population growth. Successful solid waste management in Nigeria urban cities requires a collective responsibility of both the government and the citizens.

Recommendations

For the attainment of effective solid waste management in Nigeria the following recommendations are proffered.

1. Waste management campaign should be conducted in the urban cities, which the people are encouraged to preserve the environment, and prevent the pollution of the streets and natural sites.
2. Private companies should be allowed and encouraged to function alongside with the respective Government authorities charged with the responsibility of the waste management.
3. The habit of good sanitation should be inculcated into the urban dwellers
4. The Government should introduce environmental sanitation day e.g the last Saturday of every month where every Nigerians will be mandated to carry out compulsory environmental clean-up around their respective dwellings for few hours.
5. The Federal Environment Protection Agency (FEPA) which was established in 1988 to control the growing problems of waste management and pollution in Nigeria should be revived and strengthening to perform their statutory functions.
6. Non-compliance with the environmental laws should be sanctioned accordingly.
7. The Government should embark on the grading or construction of the road linking the various areas in the town to enable the waste disposal vehicles access the areas for the collection of waste without any obstacle or hinderance.
8. The dumping sites should not be too far from the town, the road should be made passable to courage proper disposal of the waste by the refuse vehicles.

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