

## THE POLITICAL ECONOMY OF REFUSE COLLECTION AND DISPOSAL IN NIGERIAN URBAN CENTRES

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### ABSTRACT

The management of waste is one of the major challenges confronting city managers globally. In Nigeria, the rural-urban migration pattern for greater economic and social opportunities has compounded the waste generation and disposal challenges of these cities. As the population of cities like Lagos, Ibadan, Onitsha and Port Harcourt increases, the waste generation capacities of these cities increases while the competence of the city managers to regularly collect and dispose waste declines. The type of waste and the method of its collection and disposal within the society have negative impact on the climate through the emission of gases. The management or mismanagement of solid waste in the cities does not only predispose them to natural disasters as a result of climate change, it actually leads to climate change through the emission of dangerous gases to the atmosphere.

In fact, most State governments do not have a well structured refuse collection and disposal system on ground to proactively handle the management of waste within the capitals alone not to talk of other major urban cities in the state. In most urban areas in Nigeria, garbage is collected either by a government agency or private contractors. Sometimes these contractors lack the equipment/capacity to handle the waste generated in these areas leaving the public to suffer the health hazards such polluted environment portends.

In the developing countries of Africa, refuse collection and disposal have become a major environmental health concerns just like water provision (Bartone, 2000).

This paper will rely on systems theory and qualitative method of data collection to demonstrate how an aspect of urban planning and activity (refuse collection) could threaten and actually endanger the health of people in the community. Lagos will constitute the study area. The state will be purposively divided in to two, mainland and island to capture various population and environmental dynamics within the state. Instruments of data collection include in-depth interview, and non-participant observation. The paper will bring to fore the problem of waste management and recommend ways of resolving it in Nigeria.

**Keywords:** Waste, disposal, challenges, health hazards, urban centres

### BACKGROUND TO THE STUDY

Refuse collection and management has continued to pose a major challenge to both developing and developed countries. The increase in population of major cities in Nigeria has compounded the waste management capacity. Even Lagos, the

commercial nerve centre of the country is still grappling with the challenges of waste collection and management. Waste management is a problem city planners seem to forget while planning the city. This is why even newly created states like Bayelsa, and new cities like Federal Capital Territory (FCT) Abuja are confronted with waste collection and management problems.

Transport of waste from households, factories, and other generation sites is a growing problem. The rapid urbanization of much of the developing world leaves little time for adequate layout and planning; many of the most rapidly growing parts of cities are at the periphery of existing settlement. Garbage dumps, with their associated disease, odour and frequent fires (in some cases) would ideally be located on suitable land away from the most densely populated areas. A new visitor to Lagos is welcomed with the foul odour from Ojota dump sites. The population density equally makes waste transportation difficult and time consuming. Lagos is noted for traffic jams at the major roads within the state. So the stress of waste transportation doubles in the state. Many cities employ neighbourhood-level collection points, where households are responsible for dumping their refuse for the government or private agents to collect and transport to the dump site. However, most times the government seems to be ill prepared for the magnitude of waste generated within these areas.

The decomposition of waste into constituent chemicals is a common source of local environmental pollution. This problem is especially acute in developing nations; very few existing landfills in the world's poorest countries would meet environmental standards accepted in industrialized nations, and with limited budgets there are likely to be few sites rigorously evaluated prior to use in the future. The problem is again compounded by the issues associated with rapid urbanization. As land becomes scarce, human settlements encroach upon landfill space, and local governments in some cases encourage new development directly on top of operating or recently closed landfills.

A major environmental concern is gas release by decomposing garbage. Methane is a by-product of the anaerobic respiration of bacteria, and these bacteria thrive in landfills with high amounts of moisture. Methane concentrations can reach up to 50% of the composition of landfill gas at maximum anaerobic decomposition (Cointreau-Levine, 1996). In well designed and well-sited landfills there is the potential for methane recovery; few landfills in the developing world are designed to capture and make use of methane; in all of Latin America and the Caribbean, only three such landfills were in operation, all in Chile (UNEP 1996). So the management of waste portends numerous challenges for developed societies not to talk of developing nations like Nigeria. The issue of poverty and illiteracy make waste management in Lagos to be more daunting. These factors combine to affect sustainable development in Lagos, Nigeria negatively. The poor handling of waste and increase in population of the city of Lagos jeopardises the chances of growth and development in the future. The natural environment was depleted and polluted. The present generation struggle to survive and the future generation are not provided a conducive environment to live and work.

## **STATEMENT OF THE PROBLEM**

The increase in population in most urban cities in developing countries like Nigeria has implications on waste generation, collection and management by the government. Recently a lot of efforts have been made to clean and beautify the state. These efforts will amount to nothing unless there is a corresponding effort by government to collect waste generated within the state and transport same to a relatively safe site for recycling. It is not just enough to plant trees and flowers,

waste management or mismanagement could rubbish all the resources and efforts put in beautifying the environment. Diseases like malaria and tuberculosis which are rampant in some African nations can be traced to dirty and polluted environment. Every year, the government of Nigeria spend billions of naira to roll back malaria, without focusing on some environmental factors such as poor waste management that makes malaria to thrive. Blocked drains provide stagnant water which facilitates the breeding of mosquitoes and other sickness causing germs.

The negative disposal and collection method of waste management within Lagos has caused environmental problems like over flooding due to blockage of drainage with plastic and nylon waste. These flood disasters are mainly child's play compared to the effects of poor waste management on climate change. So, poor waste management practice can affect other aspects of the social and financial institutions negatively. According to the United States environmental protection agency (EPA) (2006), there is a linkage between waste management and green house emission. So the way solid waste is managed by the city government (state or local) equally affect climate change. Disasters caused by climate change distort the natural order and intensity of seasons and causes hardship to the people.

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## **RESEARCH QUESTIONS**

The study focused on the following research questions;

What is the level of awareness of green house emissions and climate change in Lagos?

What are the common challenges faced by the public in waste collection and disposal in Lagos?

Is there a better way of waste management in Lagos?

## **STUDY OBJECTIVES**

The main objective of this study is to examine waste collection, disposal and management pattern in Lagos. The specific objectives includes to;

Examine methods of refuse collection and waste management in Lagos.

Reveal the level of awareness of green house emissions from waste dump sites in Lagos.

Suggest better ways of refuse collection and waste management in Lagos.

## **METHODOLOGY**

The study utilized qualitative method of data collection and analysis. Lagos was purposively divided in to two, main land and island areas. The mainland covered Ikeja, Agege and Egbeda areas while the island covered Obalende, Ikoyi, Victoria Island and Lekki.

In-depth interviews was used to collect data from the key informants (community leaders), while non-participant observational method was adopted to comprehend the waste collection and disposal technique within the city.

### **Study Area (Lagos)**

Lagos is a port city and the most populous city in Nigeria. Officially the population of Lagos was recorded at 7,937,932. Lagos is the second fastest in the world (citymayors.com). Lagos is a huge metropolis which originated on Islands separated by creeks, such as Lagos island, and Victoria island. The city has expanded on the mainland covering areas like Ikeja, Agege, among others.

The city is populated by people from all walks of life from all the ethnic groups in Nigeria and foreigners too. This conglomeration of people from all backgrounds makes Lagos the melting pot of Nigeria. This population possess a huge challenge in waste generation and disposal. The densely populated areas of Lagos makes waste disposal difficult.



**MAP OF LAGOS**

### **SIGNIFICANCE OF THE STUDY**

The study will create awareness about green house emissions from waste dumps and their negative impact on climate change. A lot of awareness is being created on the dangers of indiscriminate refuse dumping on the drainages without any effort to educate the public on modern waste disposal methods. The study will contribute on existing literature on waste management and processing in Nigeria.

## **BRIEF LITERATURE REVIEW/ THEORETICAL FRAME WORK**

### **Waste Generation:**

According to (Franklin & Associates, 2000), total waste generation is the product of the per-capita waste generation rate and the state population. This shows that there exist a relationship between waste generation and the state population. Lagos as a densely populated state therefore is still grappling with waste management challenges.

The management of solid waste is one of the challenges facing any urban area in the world. An aggregation of human settlements has the potential to produce a large amount of solid waste; the collection, transfer and disposal of that waste has been generally assumed by municipal governments in the developed world. The format varies, however in most urban areas garbage is collected either by a government agency or private contractor, and this constitutes a basic and expected government function in the developed world. Municipal solid waste (MSW) management has become a major issue of concern for many under-developed nations, however, especially as populations increase. The problem is compounded as many nations continue to urbanize rapidly; 30-50% of populations in many developing countries is urban (Thomas-Hope 1998) and in many African countries the growth rate of urban areas exceeds 4% (Senkoro 2003). Although developing nations do spend between 20 and 40% of municipal revenues on waste management (Thomas-Hope 1998, Schübeler 1996, Bartone 2000), this is often unable to keep pace with the scope of the problem.

Lagos is a unique state with a large number of the rich and the poor coexisting within the same environment. This has implications on urban slum growth and the corresponding social problems including waste generation and management problems.

### **POLITICAL ECONOMY OF WASTE MANAGEMENT**

According to (Olar Zerborok,2003),developing countries have solid waste management problems different than those found in fully industrialized countries; indeed, the very composition of their waste is different than that of 'developed' nations. This includes differences in volume generated and also content. Before one can examine individual problems in waste management, it is important to understand the political and economic framework in which governments must frequently work in developing countries.

In most cities in Nigeria, refuse collection and waste management is part of the functions of the local government authorities. However, over time these Local government authorities appear to be incapacitated due to poor resources, obsolete trucks and population increase among others. To reduce these challenges, state governments took over the responsibility of waste management within the cities. In view of this, Lagos state created Lagos state waste management authority (LAWMA) to take charge of refuse collection and waste management.

This agency is yet to adequately handle this challenge within Lagos state.

Meeting the financial demands of MSW management will continue to be a problem in the cities of developing countries. In areas where residents are assessed fees for waste removal, the rate of collection can be quite poor (Schübeler 1996). Further, fewer and fewer people will be willing to pay in the face of poor or declining service. Many municipalities may not even be aware of the degree to which revenues are collected, or the true costs of their entire MSW operations. The problems are compounded when revenues from MSW collection are simply rolled into the general treasury, as opposed

to returning to waste-related operations. Many municipalities have turned to privatization as a potential solution; certainly the financial picture is cleared somewhat when the entire system is turned over to outside contractors. However, local governments will still be held to account if service declines.

With increased urbanization, demand for services will undoubtedly increase. Municipal tax and fee revenues, however, are not likely to rise as quickly as the population. This is due to the fact that of the people moving to the city, the majority are likely to be poor migrants from rural areas in search of employment, unable to contribute significantly to the revenues of the municipality. Although they may demand marginally less services due to their lower level of consumption, they are likely (at least at first) to congregate in the poorer, more densely settled areas, exacerbating the health and sanitation problems posed by these often unplanned communities.

Additionally, the high moisture content and organic composition of wastes in the developing world may lead to problems of increased decomposition rates in areas with high average daily temperatures; high seasonal or year-round rainfall would only compound these problems, presenting additional challenges with insect populations and conditions conducive to disease. To mitigate these problems, much more frequent collection is needed in hot, humid areas to remove organic wastes before they are able to decompose than would be needed in cooler, drier climates. Although daily collection has proven unreliable or unworkable in many cities (Cointreau 1982), perhaps a twice-weekly collection of organic material (possibly in conjunction with a municipal composting operation), would be sufficient to reduce decomposition.

### **Human health risks**

There are some human health risks associated with solid waste handling and disposal in all countries to some degree, but certain problems are more acute and widespread in underdeveloped nations. Cointreau (1982) has classified these into four main categories: 1) presence of human fecal matter, 2) presence of potentially hazardous industrial waste, 3) the decomposition of solids into constituent chemicals which contaminate air and water systems, and 4) the air pollution caused by consistently burning dumps and methane release.

According to (Olar Zerbock 2003) industrial waste can pose significant health risks for those involved in the collection and ultimate disposal of solid waste. The presence of toxic compounds in municipal solid waste is highly regulated in modern developed nations, where special procedures must be followed to ensure minimum environmental contamination and human exposure.

### **Environmental issues**

The decomposition of waste into constituent chemicals is a common source of local environmental pollution. This problem is especially acute in developing nations; very few existing landfills in the world's poorest countries would meet environmental standards accepted in industrialized nations, and with limited budgets there are likely to be few sites rigorously evaluated prior to use in the future. The problem is again compounded by the issues associated with rapid urbanization. As land becomes scarce, human settlements encroach upon landfill space, and local governments in some cases encourage new development directly on top of operating or recently closed landfills.

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A second problem with these gasses is their contribution to the so-called greenhouse gasses (GHGs) which are blamed for global warming. Both gases are major constituents of the world's problem GHGs; however while carbon dioxide is readily absorbed for use in photosynthesis.

### **Waste reduction**

It would seem that the easiest and most effective way to reduce the amount of waste to be disposed of would be to simply produce less in the first place. (Johannessen 1999). Hoornweg, et al (1999) state that for every metric ton of unsorted municipal solid waste (containing 0.3 Mt carbon), 0.2 Mt are converted to landfill gasses. Of this gas, carbon dioxide and methane each comprise .09 Mt. Since it is believed that landfill gasses supply 50% of human-caused methane emissions and 2-4% of all worldwide greenhouse gasses (Johannessen 1999), this is clearly an area of concern in global environmental issues. So there is the need to educate the people on the need to sort their refuse before disposing them.

### **THEORETICAL FRAMEWORK**

This study was anchored on the systems theory.

Systems theory generally looks at the inter-dependence, and inter-connections of different parts to sustain, or encourage the harmonious function and stability of the entire system. Waste management as a part of the entire system within the society could have implications on health, environment and even climate change if not well planned by the government. So waste disposal becomes as important as water and electricity or provision of other infrastructural facilities within the society.

### **SUMMARY OF MAJOR FINDINGS**

Lagos state government through its agency responsible for waste management (LAWMA) is trying very hard to deal with the problem of refuse collection and disposal, but the population of the city and insufficient trucks are hampering their efforts. Even the public private partnership (ppp) is not helping the situation. Most times their trucks come when people must have gone out to work and nobody will be around to drop the refuse in the truck.

This has made the people to now drop their waste outside the gate or on the road side hoping that when the trucks come they will pick it up. This does not happen so quick thereby leaving the refuse to decompose out side before they are eventually disposed.

According to a respondent;

The whole arrangement of refuse collection

Here is not well organized. The government

Do not consult us to know how best we feel

To dispose our refuse. They just use force

To compel every body to patronize their trucks

IDI/Ikeja lagos

This showed that there is the need for the government to get the views of the people as regards the disposal of their refuse within the community. The government trucks should compete or operate along side private trucks or hand pushed

trucks. Infact the hand pushed trucks should be engaged to penetrate all nooks and crannies of the cities especially the non- motor able areas.

It was equally observed that there is no significant change in refuse collection and disposal patterns between Lagos mainland and Lagos island residents. The state has a common waste management culture which is not environmentally friendly and affects the aesthetic value of the state. While the state government spends so much money to plant trees and grasses to beautify the city, bags of refuse litter the major roads and even bus stops within the metropolis.

The awareness of gas emissions from decomposing garbage was low among both residents on the Island and residents on the mainland. People were only aware of the dangers of dumping refuse on the drains particularly during raining season. However, refuse were seen on the drainages by the researcher. There was no effort to educate the people to reduce their waste or even to sort or separate them for disposal.

One respondent said that;

I know about green house gas emission  
Affecting the ozone layer negatively  
And causing climate change, but I never  
Knew that it has anything to do with waste  
Or garbage dumps at all  
(IDI/ Obalende Lagos)

This shows that awareness of gas emissions from garbage dumps was very low as at the time of this study among Lagos residents. A proper education is needed to sensitize the people on the dangerous effects of gas emissions from refuse dumps and the need to dispose refuse properly in the state.

It was observed that women and children usually engage in waste disposal in most families. Most times these refuse were dumped indiscremenently at night there by rubbishing the efforts of the government in cleaning the city. Also most markets in Lagos generate a lot of waste without proper disposal arrangements on ground. The people were forced to do their buying and selling around smelly heaps of refuse. This could have health implications on the populations.

## **CONCLUSION**

Municipal solid waste issues represent major problems to the governments of developing nations. As poorer nations grow and develop, improvements in infrastructure and technology should help to overcome barriers to the safe disposal of urban waste. Environmental regulations, intelligently designed to protect the health and integrity of ecosystems and human populations, should be created and enforced now in order to prevent the need for costly remediation measures in the future.

Refuse collection and disposal is a major problem in developing countries with high population density. Lagos state generates a lot of waste due to its population increase. The increase in urbanization in the state has implication on dump site or landfill sites allocations. The negative attitude of the people towards refuse disposal such as dumping of refuse in drainages and on the streets affect the environment negatively. Flood and erosion have become rampant in many parts of



Lagos due to this poor waste disposal culture. The people of Lagos are yet to completely accept modern means of refuse disposal because they are not used to paying for waste disposal.

Most city planners neglect the management of waste generation and disposal in the city, leaving it in the hands of the people. This negligence, affects all aspects of the city activities such as transportation, health, school attendance and building collapses due to flooding. Though Lagos now wears a beautiful look, this beauty cannot be sustained if waste management issues are over looked by the government. With proper planning waste generated in Lagos could be recycled in to useful products that will generate wealth and help in sustaining economic growth in the state.

Waste management culture in Nigeria is poor. People do not want to patronize the local government agencies responsible for waste collection because it will involve money. So it is really difficult for people to get used to spending money to dispose their waste. To make the society cope with waste generation and disposal challenges, the family and other agents of socialization must help to re-orientate the children on the need to generate less waste and how to dispose waste generated without destroying the environment. This culture will help to promote sustainable development among the people.

The awareness of gas emissions from waste is very low among Lagos residents.

The private public partnership (PPP) in waste collection and disposal in Lagos need to be revisited to reflect the socio-cultural realities in the state. The type of neighbourhood and the status of its population affect the type and volume of waste generated. So town planners must provide different waste collection methods for poor densely populated areas and industrial and high brew areas within the state.

The presence of land boarder and sea ports in Lagos facilitates the influx of second hand electronics in to the state whereas there is no proper channel of disposing these e-wastes after they become obsolete.

Poor refuse collection and disposal methods affect the health of the people as well as pollute their environment. The waste management system in Lagos needs to be evaluated to refocus it to serve the people in a more efficient way.

Lagos is a coastal state and therefore poor waste management system will affect the aquatic environment negatively too.

Poverty and illiteracy are the major push factors for improper waste management practices in Lagos state. The government must create the enabling environment for private businesses to thrive, so as to reduce unemployment and hardship among the people. It is poor neighbourhoods that generate most moist waste that decompose and pollute the air. Breeding germs and mosquitoes that cause malaria. Education and adequate enlightenment will help to improve the consumption patterns of the people and change their waste generation and disposal

In conclusion, waste generation and disposal patterns are affected by poverty, educational attainment, living condition, and neighbourhood planning. Both the government and the citizens have a lot of roles to play to enhance better refuse management practices in Lagos Nigeria to achieve a sustainable environment that facilitates economic and social development.

## RECOMMENDATION

The following recommendations were proffered from the study findings;

1. There is the urgent need to enlighten the residents of Lagos about the dangers of poor refuse collection and disposal on the environment and climate change.
2. Refuse collection and disposal should be deregulated so that more private hands could come in to cope with the increase in population and waste generated.
3. Communities should be encouraged to organize their waste collection and disposal methods to facilitate a more effective enforcement of sanitation rules within the community.
4. Sorting of refuse before disposal should be encouraged to facilitate recycling of waste and job creation.
5. Waste reduction culture should be encouraged by government and NGOs to promote a better consumption pattern among Nigerians.
6. Government should be strict with the influx of used items into the country to avoid the use of the country as a dumping ground for waste by developed countries.
7. Location of refuse dumps and mode of waste transportation within the city should be re-evaluated to reflect the socio-economic status of the growing population of Lagos. As mega-city, Lagos state must take waste management and processing very seriously to ensure sustainable waste management system that can stand the test of time.

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