



## An Appraisal of Domestic Waste Management in Oba-Ile, Akure. Ondo State, Nigeria.

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### ABSTRACT

*Research has shown that most developing countries have policies that have failed to address domestic waste management problems. This research therefore looked at domestic waste management in the study area with a view to suggest policy framework that will improve on existing policies. This research shows that the people of Oba-Ile in Akure North Local Government Area of Ondo State live in a poor environment and thus have no access to good waste disposal services, hence the indiscriminate dumping of refuse everywhere with its attendant problem. The paper concluded by asserting, that if not properly checked, indiscriminate waste dumping will spell great doom for the people health wise, but if properly addressed can be a source of income generation for the people as well as the government, it can also be a source of alternative power supply.*

### Keywords:

Waste management, poor living condition, environmental health, waste generation, waste to wealth

### 1. INTRODUCTION

Over the years, there has been little documentation of the quality and composition of wastes generated in different areas of Nigerian cities and this has limited the capacity to develop effective domestic waste management. Domestic wastes, garbage and sewage are being produced everyday in our urban cities and in an attempt to dispose these materials; man has relentlessly polluted the environment. However, man's health and welfare are being affected by environmental pollution and these pollutants are substances that are present naturally in our environment but when released in significant amount by humans, it becomes toxic.

It is important to realize that the type of domestic waste generated vary from one environment to another and also the volume of waste generated in an urban settlement will be higher than those generated in rural settlements due to the population of population of people living there. Obviously, when wastes are generated, they are expected to be effectively collected, treated or processed and disposed off



in a manner that does not jeopardise human and animal life, as well as the environment.

The United State Environmental Protection Act defines waste as any substance which constitute scrap materials or an effluent or unwanted surplus substance. Waste can also be said to be substance or object discarded as worthless or unwanted, defective, or of no further value from manufacturing or production process. Waste is also described as an integral part of human activities and condition of existence.

There is no city in the world today regardless of the level of technological advancement that does not experience domestic waste management issues but it is their ability to manage waste that sets the developed nations apart from the developing nations. Nigeria like any other developing country is at present faced with severe domestic waste management issues especially in the urban centres where it has almost become an epidemic in some parts of the country. Virtually all aspects of man's activities on land involved the generation of waste, thus the need to develop a robust waste management policy so as to protect and safeguard our environment so that it can be sustainable becomes paramount.

The waste management policy of Ondo State government have so far not been able to adequately address the waste management issues in the state and Oba-Ile in Akure North Local Government Area of the State is no exception from the scourge associated with poor domestic waste management policy. The system has not delivered the optimum economic and environmental result for now and has not provided enough room to adapt to

future pressure. Problems associated with utilities such as water, electricity and communication services are treated with importance so that society may have clean and adequate water, constant energy supply at homes and offices and effective communication system, but the problems associated with domestic waste have not been handled in a similar manner. Domestic waste generation is one of the public infrastructure that is based on a specific type of physical infrastructure to provide the goods or services, and in this respect, it resembles the electricity, natural gas, and water sector.

This project is aimed at examining the problems of domestic waste management with a view to suggest possible solutions by identifying the various types of waste generated, identifying existing waste disposal methods and also suggest policy framework that can lead to improvement in domestic waste management practices in the state.

## 1.1 STATEMENT OF THE PROBLEM

The United Nations in 2008 said that the rapid growth of cities strains their capacity to provide services such as energy, education, health care, transportation, sanitation, and physical security because governments have less revenue to spend on the basic upkeep of cities and provision of services, cities have become areas of massive sprawl, serious environmental problems.

The location of Oba-Ile as a suburb of Akure has further aggravated sanitation problems in the town. This is because of the rapid development currently being experienced in the town which is exerting much pressure on the existing sanitation facilities. Residents



across the town lack access to proper domestic waste management disposal methods which in turn affects the sanitation of the town.

The existing waste management system in the state has not been able to keep pace with the demand for the present and ever growing population of the area. Due to this fact, the residents indiscriminately drop refuse in any available open space, inside drainage and river bodies, uncompleted building, abandoned sites, among others, this uncontrolled waste disposal methods thus expose the residents of the town to different health hazards associated with air pollution and water contamination.

## 1.2 THE STUDY AREA

Oba-Ile is a suburb of Akure the capital city of Ondo State, the people in the town engage in primary activities like farming, trading, lumbering, hunting, e.t.c. Oba-Ile is in Ward 9 under the Akure North Local Government and has many areas that are covered with uncollected waste and this creates problems.

## 2. MATERIAL

The ever increasing rate at which refuse is been generated in the environment today is determined by the rate of urbanization which is now common in most developing countries of the world. According to Ogedengbe and Oyedele (2006) [1], the composition and quantities of waste generated in both developed and developing countries are astronomical, they further posited that the higher the level of economic growth and the higher the population, the greater the volume of waste generated. This increase in waste generated has brought alongside serious environmental challenges associated with improper waste disposal,

especially domestic waste which are often discarded in different ways (Nze, 1980)[2]. In discussing the effect of poor waste disposal method in Nigeria, studies have shown that most inhabitants had a very poor orientation towards waste disposal. Studies have also shown that wastes of different kinds that are indiscriminately discarded serves as breeding ground for insect and these are the major causes of disease outbreak (Onokerhoraye, 1998)[3].

Solid and domestic wastes from urban area are discarded directly into stream and other water bodies. The composition of domestic waste mainly includes garbage, household waste, nylon, plastic, paper, and refuse among others and these are often indiscriminately discarded (Ogundele, 2006)[4]. Poor domestic waste management (either liquid or solid) represents a serious threat to the environment. The present crisis of domestic waste management is not limited to the developing countries alone, but rather a worldwide crisis. For instance, reports have shown that Americans throw out over 400,000 tons of domestic waste every day, these include construction waste of which 160 million tons of domestic wastes are tossed out each year (Awake 1990)[5].

Nigeria urban centres now sit on heaps of refuse and this refuse is increasing and will continue to increase in the future as long as the current trend of urbanisation continues. In their study, Akinola and Salami (2001)[6], opined that one of the greatest challenges facing urban centres in the developing countries is the poor management of solid waste which can be attributed to the unprecedented increase in rate of urbanisation. Nigeria is thus not exempted from this challenge and also sadly enough there

has not been a noticeable adequate management capacity anywhere in the country to deal with the situation. Given the very high potential of continued escalation or increase in the rate of urbanization, the evidence of serious and very high generation of domestic waste is bound to occur (Mabogunje, 1990)[7].

Open dumps are the preferred method of disposing of solid waste as an alternative of landfills in most African countries. In open dumps refuse is simply dumped in low lying areas on open land they are characterized by an absence of engineered measures, no waste management or consideration of landfill gas management, and few if any operational measures, such as registration of users, control of the number of tipping fronts, or compaction of waste (Zerbock, 2003)[8]. Wastes are dumped haphazardly, this method is neither hygienic nor safe but African countries have very little choice but to hang on to this method. Local governments think that uncontrolled waste disposal is the best that is possible, because of financial and institutional constraints. Most local governments in Africa have weak economic base, underfunded and are faced with growing populations; hence they cannot raise enough funds to construct properly engineered landfills.

In some developing countries, semi-controlled or operated landfills are used. For these, waste is dumped at a designated site and the dumped refuse is compacted, then a topsoil cover is provided daily to prevent nuisance. All kinds of waste whether domestic, industrial, or clinical/hospital waste is dumped without segregation. The dumpsite is not engineered to manage the waste discharge and emissions of landfill gases.

Sanitary landfills are properly engineered and found in developed countries. They have facilities for the interception of waste generation and its treatment using a series of ponds, and they have arrangements for the control of gases from waste decomposition. These are costly to construct and most developing countries cannot afford them unless they get external funding (Oyaro, 2003)[9]. This is the desired method, but due to the high costs involved in establishing them, they remain a pipe dream.

While examining the problems of domestic waste management, study shows that there exists a relationship between domestic waste characteristics and management. It observed a lot of shortcomings, particularly administrative inefficiency in the management of domestic waste in Africa generally. Afolabi[10], in his study in 1988, also shows the relationship that exists between housing quality and the disposal of domestic waste. Substandard and poor quality housing are often found in poor neighbourhoods, when buildings are located in squalid environments, there is tendency that domestic waste will be disposed of indiscriminately within the residential area.

## 2.2 DOMESTIC WASTE GENERATION

Wastes are unwanted, unusable items, remains, or by products or household garbage. They are also include excrement, used or contaminated water etc. Wastes are generated in our homes on daily bases. And these wastes must be handled and managed proper to avoid been a source of danger in our homes. There are various types of wastes generated in our homes that require different management system. These wastes are classified into two major forms namely **solids** and **liquids**. The liquid

forms are easy to handle and manage they are connected from their sources to septic and soak away pits. These are evacuated as soon as they are filled up by waste management operators. The solid wastes are relatively different in their management; this is because there are no built facilities to handle them like the liquid waste. But they could be handled by proper understanding of the various types of solid wastes and their sources. The types and sources of solid waste in our home are but not limited to:

➤ **Kitchen waste.** These form the bulk of daily generated wastes and this is due to the fact that we feed daily and these waste if not properly handled can start to decompose after 24 hours.

➤ **Glasses.** These wastes come from processed products we purchased from stores such as drinks, creams, broken doors and windows etc. These can be a great source of hazard in our homes if not properly handled and disposed.

➤ **Metals** -These wastes come from metal containers of foods and drinks we purchase and they should be handled with care to avoid been a source of injury.

➤ **Plastics and polythene.** These have become a major source of waste in our homes, these wastes do not rust or decay easily and so need to be handled with care.

### 3. RESEARCH METHODOLOGY

This data for this study were obtained from both primary and secondary sources. The primary source of data collection for this research was obtained through the use of structured questionnaire as well as personal observation, while the secondary data were gotten mostly from, journals textbooks, library materials and published materials.

The population of Oba-Ile according to the 1991 population census, was 6722 and this was projected to 2012 using a growth rate of 2.5%, which gives a total of 9041. According to Sanitation Fact Sheet, the average household size is 7. The projected population of Oba-Ile was divided by the average household size, from which 10% was taken as the sampling size, this gives a total of 129 to which the questionnaires were administered using the systematic sampling technique.

### 4. DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

**TABLE 1: SHOWING SOURCE OF WASTE GENERATION**

Source of waste generation	No of respondents	Percentage
Domestic activities	93	72
Industrial activities	9	7
Trading activities	27	21
Total	129	100

**Source: field survey, 2013**

From the table above, it could be seen that domestic activities is the major source of waste generation which is 72%, compared with trading activities which is 21% and trading activities which is 7%.

**TABLE 2: SHOWING WASTE DISPOSAL METHOD**

Waste disposal method	No of respondents	Percentage
Burning within/outside premises	12	9
Dumping inside river bodies	20	16
Open dump	79	61
Central collecting point	18	14
Total	129	100

*Source: field survey, 2013*

Table 2 above shows that majority of the residents in the study area dispose of their waste in open dump, which is evident by the sheer number of open dumps found within the study area (9 were identified). Open dumps are often a breeding ground for rodents and other vermin, they also constitute visual pollution. Also the number of people that dump their refuse into river bodies is worrisome because the dumping of household and industrial wastes directly into rivers pollute the environment as well as poses serious danger to humans as well as aquatic animals, since high concentration of waste and other hazardous materials will increase the toxic levels of such water and endanger aquatic and human life. Also the contamination of groundwater is a high probability through the pollution of shallow aquifers.

**TABLE 3: SHOWING AVERAGE MONTHLY INCOME**

Average monthly income	No of respondents	Percentage
Less than 18,000	75	61
19,000-34,000	20	16
35,000-50,000	17	14
51,000 and above	9	6
Total	121	100

*Source: field survey, 2013*

The analysis of the average monthly income of the respondents show that 61% of the respondents earn below 18,000.00 naira monthly, 16% earn between 19,000 and 34,000 naira, 14% earn between 35,000 and 50,000 while those that earn more than 51,000 are only 6%. The implication of these is that majority of the respondents are poor hence their inability to afford houses that are of good quality, and the quality of housing has been found to be directly related to waste management practices.

**Table 4: Environmental Impacts of Waste Management Methods**

S/N	Refuse Disposal Method	Environmental Impacts
1	Burning within/outside premises	-Co2 emission -Reduce air quality -Contributes to global warming
2	Central collection point	-No negative impact -Cleaner residential environment
3	Open dump/river bodies	-Blockage of drainage channels; flooding -Air pollution -Breeding ground for mosquitoes

		and other harmful insects -Contributes to prevalence of diseases such as; cholera, typhoid, malaria, dysentery, etc
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Source: adapted from Fakere A. et al (2011)[11].

Table 4 above highlights the impacts of the various methods of waste disposal prevalent in the study area, there is urgent need to address this menace before it turns into an epidemic within the study area. Information obtained from the waste management board in the state revealed that the agency does not have enough operational vans for waste collection, as the time of writing the report, there are only 20 vehicles serving Akure and the metropolis which is grossly inadequate considering the fact that Akure has a population of 3,640,877 as at 2006 and projected population of 3,895,367 to the year 2010. They further revealed that the staff of the agency are also not adequate thereby making it difficult to cover the entire area. Also of great importance is the poor environment of the study area which makes it difficult to access some of the streets.

## 5. RECOMMENDATION

Having observed firsthand the activities of residents viz- a- viz the indiscriminate disposal of refuse in Oba-Ile, it is imperative to make recommendations that will guide against the looming health crisis within the town, if urgent actions are not taken.

### 1. INTEGRATED WASTE MANAGEMENT

This includes waste reduction, recycling, composting, and reuse. Composting is an excellent way of recycling biodegradable waste from an ecological point of view (Zurbrugg, 2002)[12]. However to guide against the failure of such schemes as evident in other parts of the world, it is important to identify a market for compost products. Also the local government can make use of the compost materials in the flower beds as well as gardens which are part of the beautification projects of the current administration

### 2. AWARENESS AND ATTITUDES

Public awareness and attitudes to waste can affect the population's willingness to participate and cooperate in adequate waste management practices. The population needs to be reminded time and again of the importance of a clean environmental as well as the health risks associated with poor waste management practices

### 3. WASTE RECYCLING ACTIVITIES

It is safe to admit that the tonnes of waste generated annually in this country can be a source of income to the people as well as provide alternative source of energy as evident in the developed world. So it is high time the government stop paying lip service to the waste to wealth programme and take a decisive action that will not only act as a catalyst for economic growth but also provide an alternative source of energy supply.

**4. IMPROVED FUNDING:** It is important that adequate funding of government departments or sanitation boards responsible for domestic waste management be made a priority as this will go a long way in assisting them to procure better and more equipment for domestic waste collection and disposal.

**5. EFFECTIVE MONITORING:** The Ministry of Environment and their agencies, local authorities should strengthen their training programme for the monitoring staff to make them conversant with current trends in the world, in relation to monitoring of the town to check the activities of residents who despite the provision of waste disposal vans will still want to dump their waste in public and illegal places.

**6. REVIEW OF EXISTING LAWS:** there is need to review the existing law guiding sanitation in the state, this is necessary so that the laws can be improved upon and thoroughly enforced to not only punish erring residents but also serve as a deterrent to would be offenders.

## 6. CONCLUSIONS

This project work has highlighted that Nigeria lack efficient management of waste. This constitutes a serious problem to urban administration in the country because urban environmental quality depends to a large extent on adequate disposal management of waste created by a mass consumption society characteristic of urban centres.

Open dumps are a threat to the environment as litter is blown out of the site and poisonous wastes continue to contaminate groundwater. It is important to ensure that the open dumps are improved upon and given proper attention so as to reduce and eliminate the associated environmental hazards.

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