

**PROBLEM EMERGING FROM INDISCRIMINATE WASTE  
DISPOSAL AS PERCEIVED BY HOUSEHOLDERS IN OVIA  
NORTH EAST LOCAL GOVERNMENT AREA IN EDO STATE**

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**JUNE, 2015**

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**A PROJECT RESEARCH SUBMITTED TO THE  
DEPARTMENT OF HEALTH, ENVIRONMENTAL  
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BENIN CITY.**

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## CERTIFICATION

We certify that this work was carried out by Mr. Egbu Dominic Iheanacho in the department of health, environmental education and human kinetics (HEK), Faculty of Education, University of Benin, Benin City, Edo State, Nigeria, as adequate in scope and quality for the partial fulfillment of the award of the B.Sc. (Ed.) degree in environmental education.



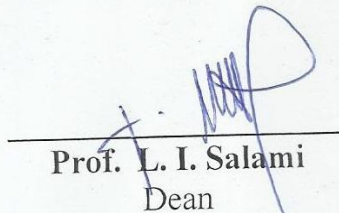
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## **DEDICATION**

This research is dedicated to God Almighty the beginning and the end who see me through my years in this school and to my Father Mr. Egbu Augustus and my brother Mr. Egbu ifeanyi who through their support in all areas made me what I am today.

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My profound gratitude goes to the Almighty God my all in all. The owner of my soul, who deliver me from the scepter of the fowler. Be magnified forever.

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I also use this opportunity to show my gratitude to the following

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## **ABSTRACT**

This paper undertakes a study of the problems emerging from indiscriminate waste disposal as perceived by householders with a view toward finding ameliorative measures that would help reduce their negative effects on urban beautification and sanitation. Inadequate and un-scientific municipal solid waste management practices and the poor state of sanitation in most cities of the developing countries have resulted into the pollution of the environment: contamination of both surface and ground water which is in turn a serious human health risk. Nigeria's major urban centres are today grappling with the problems caused by mounting heaps of solid wastes from their environments.

To study the phenomena, a literature on problems emerging from waste disposal was undertaken. The stratified random sampling technique is applied based on the division of the study area, the districts include Ekosodi, Oluku, Iguosa, Uhogua, Utekon, in each of

these communities, households were chosen using stratified random sampling, the first house is selected at the beginning of each Street and the next two houses are skipped before the fourth is also sampled. This method is applied on both parts of the street. In each of this five (5) districts, 20 questionnaires were administered to the selected streets.

The observation was that householders perceive ill-health as the most severe problem that emerged from indiscriminate waste disposal.

Recommendation were made that communal refuse containers should be provided at approved sites within every 100 meter radius.

The local authorities should ensure that householders should participate actively in monthly environmental sanitation imposed by the federal government

# **CHAPTER ONE**

## **INTRODUCTION**

### **Background to the Study**

Municipal solid waste is generated from residential and commercial sources. Municipal solid waste is generally made up of paper, vegetable matter, plastic, metals, textile, rubbers and glass (USEPA 2002, Gary 2009). Commercial solid waste disposal is a major concern in Benin metropolis because the local government authority are solely in Charge of the disposal of waste especially those generated in the open market places.

In last few decades waste appears to be the most prominent among the multitude of problems existing in the urbanizing Benin City. Solid waste is seen in huge Heaps on any piece of unused land around buildings and in the open market places. Living with solid waste littered around appears to be an acceptable way of life among the Metropolitan in recent years. Wastes are generated from domestic commercial and industrial activities in Nigeria. Protecting man's environment and promoting his health, waste disposal and

management should be more aggressively address in our society. Waste is more easily recognize than define. Something can become waste when it is no longer useful to the owner or it is used and failed to fulfill its purpose (Gualay, 2012).

Refuse are waste that have been thrown away. The statutory definition of refuse is not based on the physical form of material. That is whether or not this solid has opposed to liquid or gas but no the fact that the material is a waste. The United States Environment Protection Agency (2011) defines refuse as any garbage, refuse, sludge from a waste water treatment plant, water supply treatment plant or air deed materials human has always produced waste that include not only the discarded bones of animals slaughtered for food but a lot more.

Refuse according to Clesceri (2008) can be divided into main groups these are that which is mainly dry and can be put directly in the dustbin and that which is liquid and maybe drained away through pipes. The dry household refuse can be disposed using galvanized iron or plastic bins having a well fitted lids and handle for easy transportation.

The effect of indiscriminate waste disposal in man are numerous that flora and fauna on the environment in form of health problems ranging from convulsion, dermatitis, irritation of nose, vomiting, diarrhea, lungs cancer to death. Other health effects includes flies which carry germs on their bodies and legs and also excreted them, mosquitoes breeds in stagnant water, blocked drains in favorable locations (Freeze and cherry, 2006).

Some household in Ovia North East burn their refuse, while some indiscriminately dispose it along the road. Indiscriminate disposal, burning and burying of refuse pose major environmental and health threats through soil and water which put the entire ecosystem of an area in danger. The contamination of waste cause severe problems for human and animals alike. The major environmental effects include air pollution which includes odor, smoke, dust and so on. The rapid growth of cities in the developing world in recent decade has resulted in increased consumption of resources to meet the growing demand of urban population and industry, this situation lead to generation of large amount of waste.

Seventy to eighty percent of refuse in Africa cities are disposed off by dumping in open space, water bodies and surface drains as a result of inadequate infrastructure and ignorance of householders (United Nation Environmental Program 2010). Indiscriminate waste disposal is detrimental to health because it creates unsanitary environment that have adverse impacts for urban residents where sanitary facilities are scarce and the household refuse are not disposed properly, compound the health hazards. It has been suggested that the quality of waste generated in the state is proportional to population size. As population increases so also waste generated also increases. A healthy man is a wealthy man, if a nation is healthy the nation will be wealthy. A healthy man brings about a wealthy man which brings the expression "health is wealth".

The danger of indiscriminate waste disposal are all around the nooks and crannies of the country and the effects constitute nothing but negative effect to the inhabitants, the rate of health hazard examples are, disease environmental hazard; accident on the environment; social effect and economic effects;

## **Statement of the Problem**

The rapid growth of cities in the developing world in recent decades has resulted in increased consumption of resources to meet the growing demand of urban population and industries. This situation leads to the generation of large amount of waste in cities and major towns.

The main cause of the problems of Nigeria cities poor environmental condition according to Sule (2011) can be ascribed to improper disposal and management of rules of waste disposal due to weak institutional capacities and lack of resources. Both human and capital waste management and sanitation in many third world cities particularly in Africa are in very deplorable condition.

Indiscriminate disposal of organic waste is detrimental to health because it create unsanitary environment that have adverse effects for urban residents where sanitary facilities are scarce, household solid waste also tend to be mixed with feacal matter, further compounding the health hazards (killed, 2011). People apathetic and lackadaisical

attitudes towards matters relating to personal hygiene and environmental cleanliness of which waste management in general is a focal point that cannot be whisked away.

### **Objective of the Study**

The general objective of the study is to ascertain the perceived problems emerging from indiscriminate waste disposal by householders within Ovia North East metropolis. In order to suggest appropriate intervention strategies the specific objectives of the study are to

1. Explain why householders of Ovia North East metropolis dispose of refuse indiscriminately.
2. Determine the extent to which the householders know the problems of poor waste disposal in the metropolis.
3. Ascertain what the householders think could be done to address waste disposal problems.
4. Identify strategies that could be employed to eliminate or reduce indiscriminate waste disposal practices.

### **Research Questions**

1. Is pollution a problem emerging from indiscriminate waste disposal?
2. Does indiscriminate waste disposal reduce/or alters the aesthetics nature of the environment?
3. Does indiscriminate dumping of refuse in drainage contribute to flooding?
4. Do householders perceived ill-health as a problem emerging from indiscriminate waste disposal?

### **Significant of the Study**

The environment in which householders reside and undertake most of their activities can impact on their health and quality of live. This study may therefore create awareness and appreciation of the values of creating healthy environment among householders. It may therefore be a significant contribution to the field of environmental health education. Findings of this study may provide the government at both state and local level where this study will be conducted the need to ensure that waste disposal are giving urgent and prompt attention.

The environmental officers in Ovia north east local government area may see this study as a wakeup call to duty. Thus ensure that the wastes generated by the householders are properly managed in order to prevent outbreak of diseases. The findings of this study will remain significant to the field of knowledge in environmental health education and waste management.

It is also significant to other student researchers who may find it useful for the purpose of replication and also as a document from which new problems could be generated for the study. It is also a contribution to existing knowledge regarding to the problem of the study.

### **Limitations of the Study**

Several limitations were observed during the course of this study, they include

1. The researcher does not have much time as expected during the administration of the questionnaires.
2. Time and financial constrain
3. Lack of available material as a result of no research has been

carried out on indiscriminate waste disposal on the study area.

### **Delimitation**

This study will be restricted to householders in Ovia north east local government area Edo state. This will help to manage the scope of the study in order to effectively carry out the research work.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

In this chapter certain sub-topic will be discussed and they are as follows.

1. Review of related literature
2. Global concern for domestic waste management
3. Problems of waste disposal
4. Prospect of waste disposal
5. Problems of indiscriminate waste disposal on flooding
6. Problems of indiscriminate waste disposal on the aesthetics of the environment
7. Perceived ill-health and indiscriminate waste disposal
8. Problems of pollution emerging from indiscriminate waste disposal

#### **Review of Related Literature**

A lot has been said, written and demonstrated about waste disposal and its associated problems. According to a United Nations conference on human settlement (UNCHS) report, one third to one

half of solid waste generated within most cities in low and middle income countries are not collected they usually ends up as illegal dumps on streets, open spaces and waste lands (UNCHS 1995). In the same vein Macomb (1997), emphasis on irregular service rendered to householders by waste management board compel them to find ways of disposing off refuse. He observed that the main method adopted by householders is open burning, composition or indiscriminate dumping.

This is very pertinent in Ovia north east where waste management services are largely inefficient and ineffective.

### **Global concerns for Domestic Waste Management**

Global concerns for addressing environmental issues call for giving specific attention to pertinent global issues such as population growth and its implications for natural resources requirements to meet the increasing demand for food and energy (Simmons, 1996: 163-170). The alarming rate of resource depletion and waste generation, associated with population growth and increasing urbanization, is posing a grave problem across the globe (Palmer and

Suggate, 1996: 109-122). In particular waste discharges are already beginning to change the way the biosphere functions, and the depletion of the ozone layer and climate change are beginning to reduce the productivity of global ecosystem at a time when millions of people are looking for livelihood and sustenance to be provided by the environment (Simmons, 1996: 163-170). While each of these problems generally require global attention the issue of waste management - disposal and recycling - seems to be the most urgent especially in the developing world where domestic waste management technology is still limited (UN-Habitat, 1988: 12-29; Palmer, 1988: 35-37). The rising standard of living in most parts of the world also implies changing tastes, and increased consumption of both energy and materials. Increased production of human waste due to changing life styles create a critical problem especially in developing countries such as Nigeria, which often have more urgent issues to attend to, such as food security and threat from epidemic and pandemic diseases which includes Hiv/Aids, malaria, tuberculosis and so on (Coinstreau, 1987: 1-30; UNEP, 1996: 20-35). However, failure to adequately

address waste management problems can only aggravate the health situation, as most tropical diseases bear a direct linkage to sanitary and hygiene standards (UNEP, 1994: 20-35). In most cases, especially in the absence of a strong government commitment, stringent rules and regulations the general tendency in big cities is for people to dispose of their domestic waste as quickly and conveniently as possible, often leaving large volumes of more complex residual waste. This is evident in most unplanned cities especially in Africa, where huge piles of solid waste are dumped in the outskirts; while waste contaminate rivers from an unpleasant habitat for disease vectors and organisms (Beede and Bloom, 1995: 133-150). This situation has now led most countries to include waste management in their country position papers (CCPs) on the environment, clearly highlighting the evidence of domestic waste management and disposal (Miller, 2002: 523-531).

### **Problems of Waste Disposal**

The deterioration of the Nigeria urban environment in terms of irresponsible dumping and accumulated solid waste is most apparent in our growing cities today, the dehumanizing effects of these

circumstances in our urban lives and blighted environment have often been cited and noted as contributing causes of the Nigerian urban decay (Asuquo, 1999).

From the United Nations statistics, world population reached 6.1 billion with an annual growth rate of 1.2 percent of 77 million people per year. Evidence of the increase in population is reflected in poor estimated of over 750 million people living in urban areas. This growth in Human population gives rise to mountainous Heaps of waste which characterizes our cities and towns like that of Nairobi of Kenya, Mexico City of Mexico, Lagos of Nigeria.

As population increases, as more people move to this few primate cities in search of better life, the generation and disposal of waste becomes a major public issue affecting both health and the aesthetic value of urban Centre. Oldnira (2005), argue that one of the major environmental health problems facing Nigeria especially in the major cities is poor waste management. Edu (2003) stated that waste is the greatest physical problem that persistently poses a grave challenge to man health. The indiscriminate dumping of waste along

Streets, market place, residential axis in Benin City constitutes nuisance which causes serious health hazard as dumping leads to percolating to polluted ground water supplies, breeding ground for such annoying and disease bearing organisms, such as rats, cockroaches, flies etc.

Uchegbu (2003), has observed that decomposed waste emits carbon dioxide (CO<sub>2</sub>), methane gas (CH<sub>4</sub>), which enhance global warming white nitrite and nitrite emission causes health hazard such as carcinogenic and mutagenic nitrous amines. Refuse dumps serve as breed place for disease causing organism such as rats are known to be involved in the spread of bubonic plagues to humans. Rats may contaminate food with their urine transmitting leptospirosis and infective hepatitis. They can transmit salmonella and other infective organisms (Odiete, 2011).

The problem with waste disposal is multi-facet in nature, as most of our cities have been overtaken by mountainous Heaps of refuse on roadway, streets, and drainage. This phenomenon can be traced to several factors that includes poor institution framework for

waste management by the government, inherent rural attitude of most urban dwellers, poor state of public infrastructure and high urban poverty among others, (Okpechi, 2007).

In Ovia north east, the issue surrounding waste disposal is annoying, waste are indiscriminately dumped on the street drain ages, backyards. This becomes a major problem as the aesthetic nature of the place is reduced. Waste obstructs traffic and even lead to accident especially at night where visibility is poor.

### **Prospect of our Environment**

In view of a prospective solution to any of the above mentioned problems, their effects causes nature which include urban decay Akintola (2001), demands first an understanding of its nature. Various scholars have attempted the cause of our deteriorating urban cities like Turner (1969), Abraham (1978).

Elizabeth dowdewell UNEP officer said that "the right to health is an extension to the right to life". As environmental conservation and management lies solely in human responsibility. According to principle one (1) of the UNEP resolution (1992) "humans are entitled

to a healthy environment in harmony with nature".

In other to ensure an effective waste management and sanitation, both urban dwellers and government should come together to maintain a legal and institutional workable framework for waste disposal management.

Therefore, a clear understanding depends not so much on the intrinsic nature of the physical environment as objective science would provide them to be, but rather on what man have imagined or conceived in regard to influence around him (Ebong and Bassey, 2004). Therefore, a clear understanding of the cognitive imperative and behavior of people constitute a prerequisite for effective waste disposal vis-a-vis management.

Additionally, a clear understanding that man is an inseparable part of the environmental system constituting his culture and biophysical, equally serving as an invisible guiding hand regulating the relationship between man and the aesthetic and hygiene status of his environment, (Stepp and Swan 1970).

### **Problems of Indiscriminate Waste Disposal on Flooding**

Udeh (2001) opined the flooding is a major man-made hazard. It is an extreme geographical event greatly beyond Hyman expectation in terms of man and his activities.

The vision of Nigeria to be among the first twenty (20) nations with leading economy by the year 2020 may be a Mirage, if lives and properties are not safe from the frequent occurrence of flooding in the country. Flood is one of the major factors that prevent Africa's population from escaping poverty level (Action aid 2006). European Union (2007) sees flooding as a temporal covering of land by water, not covered by water before the incident. Though, flooding may be temporal as believed by the European Union, but the effect may not be temporal when such occurrence claim several lives and properties.

Flood not only affect the victims, but also has a gross effect on the national economy of the country where poverty level rise due to the incidence.

Halley (2001) identifies the causes of flooding in Nigeria to be inadequacy of drainage in the country.

Flooding can be very dangerous, only 15cm of fast flowing

water are needed to knock ones off his feet. Below are some of the problems of flooding as it affects householders.

1. Flooding water can seriously disrupt public and personal transport by cutting off roads and railways line, as well as communication links when telephone lines are damaged.
2. Floods disrupt normal drainage system in cities and sewage spills are common, which represent a serious health hazard.
3. Flood can distribute large amount of water and suspended sediment over vast area restocking valuable soil nutrients to agricultural lands. In contrast, soil can be eroded by large amount of fast flowing water ruining crops, destroying agricultural land/buildings and drowning farms animals.

Unfortunately, flooding not only discus many people lives each year, but it frequently creates personal tragedies when people are swept away and drowned.

### **Problems of Indiscriminate Waste Disposal on Aesthetics of the Environment**

Nigeria's urban centre's are today fighting to clear mounting

Heaps of solid waste from their environment. These strategic centre's of beauty, peace and security are being overtaken by messy nature of overflowing dumps, unattended heaps of solid waste emanating from household or domestic or kitchen sources, market, shopping and business centres.

In spite of the formulation of Federal and National Environmental Policy, the environment has not been adequately protected. Interest is mainly on aesthetics, which is rarely achieved (Agunwanba, 1988). Waste collection is regular and restricted to major cities, thereby endangering public health by encouraging the spread of odor and disease (Adewale, 2004).

In reaction to the inescapable environmental impact of delay in waste removal, the federal government for example introduced the monthly environmental sanitation in the early seventies. It is expected that government would in due cause arrive at the means to combat waste and reduce their negative impact in area residents and the perception of our cities as being dirty, chaotic and full of trace of rotten or fermenting garbage that is unsightful.

## **Perceived ill-health and Indiscriminate Waste Disposal**

The management of Municipal solid waste is becoming a major public health and environmental concern in urban areas of many developing countries (Harris, 2004). The indiscriminate disposal of waste represents a source of environmental pollution and poses risks to human health (Puri et al., 2006) Municipal waste in Ovia north east contain human excrete, animal excreta, hazardous chemical pollutants and sharps which can facilitate the spread of disease and injury particular among children playing around waste dumpsite (Da zhu et al., 2008).

Indiscriminate waste disposal is associated with spread of vector borne diseases like malaria and dengue fever (Mckenzie et al., 2006; Puri 2008). Mosquitoes are responsible for the transmission of malaria a life threatening disease through their bites (Human Protection Agency, 2009). Malaria accounts for an estimated 300-500 million cases globally which is an epidemic disease in Sub-Saharan Africa. It account for 1.5 million deaths yearly, most of them among children under five years (WHO, 2009).

Uncontrolled waste disposal create a breeding environment for rodents that are capable of transmitting various forms of diseases such as plague, salmonella and leptospirosis (Lucas and Gillas, 2004). Rodent also attract snakes whose bite kills especially where immediate intervention with anti snake venom.

### **Problems of Pollution Emerging From Indiscriminate Waste Disposal**

According to Okukpon (1988), she identified the major sources of environmental pollution which are,

1. Air and atmospheric pollution
2. Water pollution
3. Over population
4. Toxic waste

#### **Air and atmospheric pollution**

Air pollution in Nigeria setting is caused by a combination of economic, political can personal lifestyle factors including opposition to effective control by powerful industrial interest, wasteful habit of personal consumption and lack of organized pressure for control. Dust

particle which are also air pollutions could result from vehicular movement, wind, Bush burning as well as dust pollution from cement and steel. Air pollution in our environment can be contaminated or polluted in many ways namely:

1. Fumes from frying food in a room
2. Exhaust fumes from passing cars or motorcycles or from electricity generating plants.
3. Smoke from kerosene, wood or local fires in household
4. Overcrowding in a poorly ventilated room
5. Fumes from Bush fire or burning refuse
6. Fumes from burning mosquitoes coils
7. Fumes from burning incense during religious activities in the fellowships
8. Smells from decaying food and refuse dumped around the street and in gutters.

Gwinn et al., (1999) asserted that air pollution is mainly caused by the discharge of gasses and particles from factories, domestic fires, and other motor vehicles. In industrial cities in certain

conditions, these pollutants build up proportions which apart from causing discomfort, becomes a serious danger to health.

### **Effect of air Pollution on Householders**

Contaminated air produced a number of bad effects. The most serious of these effects is on man's respiratory system which letter affects the functioning of the whole body and it also affects the physical health of the human and animals.

### **Water Pollution**

Water pollution is another problem caused by households reaction to the water bodies, when a water body is loaded with waste materials or heat, such that it's natural ability for self purification can no longer cope with the situation, such water is said to be polluted.

In Benin City, water pollution has been a primary health problem, most of the householders have no enough water and most of the water sources are not properly taken care of. In Ovia north east, water pollution is present everywhere around the residents and most water from the bathrooms, kitchen, and even the toilet does not have outlet to control proper flow to the drainage and this pose a lot of

danger and health problems for householders such as mosquitoes and flies related diseases which includes;

1. Malaria fever: most households have been a victim of this, there have been cases of malaria out break where household are been taken to University of Benin Teaching Hospital to receive malaria treatment.
2. Typhoid fever: this is another serious and devastating problem, the Major carrier of the diseases are mosquitoes and flies which have succeeded in breeding in the collected water in the resident and other strategic places around the homes.
3. Inconvenience: A dirty and smelling environment is usually not suitable for human habitation, it is usually not suitable for human habitation and it is uncomfortable for man. Foul smell and the buzz of decayed decomposed waste filled the air.

### **Land Pollution**

The genesis of the establishment of the federal Environmental Protection Agency (FEPA) can be traced back to the Kokomo toxic waste episode. However, the federal ministry of works and housing

in the federal ministry edition of its newsletter. "The Nigeria environ that the generality of Nigerians were unaware that toxic waste were dumped at Kokomo part in the Bendel State, now delta and Edo state. In August (1987). The awareness was not created until nine months later, in May 1988. It became public knowledge through the patriotic initiatives of Nigerians students in Italy, who alerted the federal government and the Nigerian mass media. This action, made both government and the mass media rises to the occasion by ensuring public enlightenment as well as the application of government to tactful diplomatic pressure on the Italian government who had to succumb to accepting responsibility for the toxic waste dumpsite and this made the government forms bodies with enabling power to handle environmental protection agency (FEPA) and the state environmental protection agency (SEPA).

Coming down to the study area, most of the domestic waste are deposited on the soil. Householders even went as far as putting or throwing waste in gutters and drainage.

All types of pollution - air, water, and soil pollution have an

impact on the living environment (WHO 2001). Indiscriminate waste disposal is unsightly and dangerous to mankind. It often consists of plastic, metals or glass material that do not easily decompose in the environment. Householders especially children are in the high risk of sustaining injury by a broken or a rust piece of discarded metal (Bankole 2009).

Environmental pollution has become a major concern of developing countries in the last few decades. There is a growing sense of global urgency regarding environmental pollution by householders' activities (Palaniappa et al., 2008) soil and water biodiversity are fundamental elements of ecosystem. The quality of life on earth is extractable linked to overall quality of the environment.

In February 2007, a report by the inter-government panel on climate change (IPCC), representing the work of 2,500 scientists, economist and policy makers from more than 120 countries opined that human have been the primary cause of global warming since 1950. Human have ways to cut green house gas emission and avoid the consequences of global warming (Wito 2001).

## **Solution to Indiscriminate Waste Disposal**

Scattered in the existing literature are several prescriptions to how to solve indiscriminate disposal of waste and the inherent/associated problems. For instance, writing on options for effective sanitation, Booth et al (2001), among others things are of the opinion that effective waste management requires a metropolitan authority that is open to new or bold ideas, relatively efficient and politically stable; and not overwhelmed by civil unrest, high levels of debt and rampant corruption. The authors added that it also requires an improvement that is based on low-cost, innovative and often unorthodox technology that depends heavily on community input and suggestions, and is based on providing a toilet for each individual household. From the above, it would be purely speculative to say whether or not the Metropolitan authority in Nigeria are open to new and bold ideas or whether they are corrupt, but with certainty, one can say that they are political stable at least, for the past couple of years. Commenting on improvement, it is common knowledge that most of the technologies operating in the country are highly orthodox, lacking

innovativeness and usually above the means of the ordinary person. It is also clear that choice of technologies does not usually depend on community input and suggestions, it is in view of these observations that the suggestions are considered with much importance.

On their part, Lucas and Gilles (2003) opined that sufficient containers or bins are needed to cope with the volume of waste prior to collection whether or not this is the case in towns and cities is the big question. Lucas and Gilles further direct that the waste storage containers must be convenient to access both for the users and the collector. On collection, the author suggests that where the collection of domestic waste is possible, collections should be at regular and consistent intervals. The frequency of collection will often depend on the capacity and quality of the storage containers used, what pertain in many metropolitan and metropolitan areas in Edo state is clearly the direct opposite of these suggestions. It is however, understandable in some cases in view of huge financial requirements which can simply not be mobilized by some metropolitan assemblies.

The solutions to waste problems continue with the suggestion

that there is need to involve beneficiary communities in program choice, design and implementation (Cotton and Saywell, 1998). Another suggestion is mandating sanitary disposal of human excreta (use of toilet) through legislation and intensification of health education (Lucas and Gilles, 2003). The adoption of appropriate technological design of toilet facilities is also suggested by Zajac et al., (1999) while Whittington et al., (1992) suggest the sharing of ownership of latrines by households to reduce cost of acquiring them.

Recommended solutions to indiscriminate waste disposal pertaining to householders in Ovia North East, for the purpose of this study are based on what the study found as predisposing factors to the problem and what is practicable, reliable, acceptable and sustainable.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **Introduction**

This chapter examines the research design or method and procedure employed for the collection and analysis of data. The issues addressed include:

- Research design
- Population of study
- Sample and sampling techniques
- Instrument for data collection
- instrumentation
- Validity
- reliability of instrument
- Administration of instrument

#### **Research Design**

This study employed the simple descriptive survey design to explore the issue at stake. This design was chosen because the study requires sampling people's opinion, fact finding on the issue at stake

(the problems emerging from indiscriminate waste disposal as perceived by householders in Ovia north east local government Area.

### **Population of study**

The population of Ovia north east is about 154,000 in 2006 (census, 2006). The total household was one-sixth( $1/6$ ) of the total Population which is 25,666 households since average of six people make a household. It is a heterogeneous population consisting of male and female, indigenes and non indigenes, public and private workers, and traders residing in different areas in Ovia North East Local Government Area.

### **Sample and Sampling Techniques**

In other to study the problem of indiscriminate waste disposal in Ovia north east local government Area, the stratified random sampling techniques is applied based on the division of the study area, the districts include Ekosodi, Oluku, Iguosa, Uhogua, Utekon, in each of these communities, households were chosen using stratified random sampling, the first house is selected at the beginning of each Street and the next two houses are skipped before the fourth is also

sampled. This method is applied on both parts of the street. In each of this five (5) districts, 20 questionnaires were administered to the selected streets. Data about each respondent was gotten through the administered questionnaire. This formed a total of 100 respondents in the five(5) district.

### **Instrument of Study**

The research instrument of this research work is a structured questionnaire which comprises of twenty(20) questions drawn from the various research questions and five questions from each question.

The instrument is made up of two sections A and section B. Section A comprises of the sex, age and marital status while section B comprises of twenty(20) questions drawn from the four research questions.

The respondents are expected to indicate by ticking "Yes" or "No" in the response.

### **Validity/ Reliability of Instrument.**

The draft copy of the questionnaire was validated by the project supervisor and another expert in educational research assessed the

questions to ensure that the content of the questionnaire was valid and relevant to the topic of study

### **Administration of Instrument**

The questionnaires were administered directly to the respondents in Ovia North East who are 18 years and above. The researcher explains the purpose of the study and solicits the cooperation of the respondent.

### **Method of Data Analysis**

Data were analyzed using simple percentages and frequency counts.

## **CHAPTER FOUR**

### **DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULT**

#### **Introduction**

This chapter emphasis on the research carried out on the problems emerging from indiscriminate waste disposal as perceived by householders.

In other for the researcher to collect data a structured questionnaires is issued out that contained twenty (20) questions to test for each research question and appropriate table are drawn and expressed in simple percentage and presented in tabular form.

#### **Procedure for Data Collection**

The questionnaires were distributed to the respondents by the researcher. The respondents were advised to answer the questions with utmost honesty and they were made to understand that their responses are highly dependent on knowing the problems emerging from indiscriminate waste disposal. The questionnaire was collected after completion by the respondent.

## Section A

### Table One

#### Age Range

<b>Age Range(years)</b>	<b>Respondent</b>	<b>Percentage of respondent</b>
18-25	65	65%
26-36	29	29%
36 and above	6	6%
Total	100	100%

From the above table, the age range of the respondents is from 18-36 years and above. About 65% respondents are between the age of 18-25years and 29% respondents are between the age range of 26years-35years while 6% of the respondents is between the age of 36years and above.

### SEX

<b>Sex</b>	<b>Respondent</b>	<b>Percentage of respondent</b>
Male	45	45%
Female	55	55%
Total	100	100%

Table two shows the sex distribution, indicate that 45% out of the 100 respondents are male while 55% are female each thus representing the perception of man and woman in the respective communities, on the problems emerging from indiscriminate waste disposal

## Section B

### Research question one

Is pollution a problem emerging from indiscriminate waste disposal?

**Table One**

Items(1-5)	`response		`no response
	`Yes	No	
1	85	15	-
2	80	20	-
3	78	16	6
`4	9	91	2
5	55	45	-

Total number of respondents/ no response

<b>Response</b>	<b>Number of Respondent</b>	<b>Percentage of Respondent</b>
Yes	305	61%
No	187	37.45%
No response	8	1.6%
Total	500	100%

The table above, shows that 61% of the respondents agreed that pollution is a problem emerging from indiscriminate waste disposal and 34.4% of the respondents disagreed as a result the research deduced that pollution is a problem emerging from indiscriminate waste disposal as perceived by householders in Ovia north east local government Area.

## Research Question Two

Does indiscriminate waste disposal reduce/ alters the aesthetic nature of the environment?

**Table two**

Item (6-10)	Response		No response
	Yes	No	
6	71	28	1
7	64	33	3
8	99	-	1
9	92	7	1
10	51	48	1

Total number of responses in table two(2) above

<b>Response</b>	<b>Number of response</b>	<b>No response</b>
Yes	377	75.5%
No	116	23.2%
No response	7	1.4%
Total	500	100%

Result in the table two above shows that 75.4% out of 100 says Yes and 23.2% says No. This responses indicate that indiscriminate waste dumping reduce / or alters the aesthetic nature of Ovia north east.

### **Research Question Three**

Does indiscriminate dumping of refuse in drainage contribute to flooding?

**Table three**

<b>Items(11-15)</b>	<b>Response</b>		<b>No response</b>
	Yes	No	
11	59	39	2
12	9	88	3
13	76	23	1
14	70	25	5
15	14	81	5

Total number of response in table three (3) above

<b>Response</b>	<b>No of response</b>	<b>Percentage of response</b>
Yes	228	45%
No	256	51.2%
No response	16	3.2%
Total	500	100%

The result in table three(3) above shows that 45.6% says Yes and 51.2% says No, this response indicate that householders does not perceive indiscriminate dumping of refuse in drainage to contribute to flooding, as a result of most of the residents in the study area lacks drainage. The householders dispose off their waste by the means of open waste burning, decomposition, and landfill.

#### **Research Question Four**

Do householders perceive ill-health as a problem emerging from indiscriminate waste disposal?

**Table four**

<b>Item(16-20)</b>	<b>Response</b>		<b>No response</b>
	Yes	No	
16	83	15	2
17	51	49	-
18	62	36	2
19	68	32	-
20	29	70	1

Total numbers of responses in table four above

Responses	Number of response	Percentage of response
Yes	293	58.6%
NO	202	40.4%
No response	5	1.0%
Total	500	100%

The table above shows that 58.6% out of 100% says yes and 40.4% says No. These responses indicate that householders perceive ill-health as a problem emerging from indiscriminate waste disposal.

## **CHAPTER FIVE**

### **Summary, Conclusion and Recommendations**

#### **Introduction**

This chapter summaries the study and draws conclusion in respect of what has been achieved regarding the purpose of the study. Recommendations as to how to address the problem emerging from indiscriminate waste disposal in Ovia north east are outlined in this chapter.

#### **Summary of the research design**

In broad terms, the study sought to ascertain the problems emerging from indiscriminate waste disposal within the Ovia north east metropolis area and the possible effects with specific objective being to: find out why householders in Ovia north east metropolis area dispose of refuse indiscriminately; determine the extent to which residents know the link between poor waste disposal and health; ascertain what strategies to be employed to improve upon waste disposal practices in Ovia north east metropolis; ascertain what the Metropolitan assembly think could be done to address waste disposal

problems in the area; and suggest measures that could be employed to eliminate or reduce poor waste disposal practice in the metropolis.

The design adopted for the study was the descriptive survey type with the study population being householders in Ovia north east, males and females, aged 18years and above.

The tool for the data collection was a structured questionnaire schedule with twenty(20) question items. Administration of the instrument was carried out by the researcher. Analysis of data was done using simple percentage and presented in tabular forms.

### **Summary of Research**

From the findings as stated in chapter four, it has been deduced that the problems of indiscriminate waste disposal in Ovia north east include environmental pollution due to inadequate refuse dumping sites or collection containers couple with irregular removal of filled refuse containers by the Edo Waste Management Board (EWMB). Other problems include unsightliness as heaps of waste littered on the streets and unused land in the metropolis. Regarding problems on ill-health indiscriminate waste disposal and open dumpsite pollutes

underground water body which is the main source of water supply to the householders, this often result to disease outbreak such as cholera, typhoid fever and diarrhea. It has been deduced from the findings that indiscriminate waste disposal and heaps of waste dumps attracts rodents that are capable of transmitting various forms of diseases such as plague, salmonella and leptospirosis which are trait to human health.

Other findings of the study are that residents of Ovia North East possess adequate knowledge regarding the link between indiscriminate waste disposal and diseases, and that the difficulties faced by the Ovia metropolis assembly include lack of adequate sanitary infrastructure; non-adherence to building laws leading to unauthorized developments that impede waste management services planning; inadequate political support; and budgetary constraints. Suggestion regarding solution to problems emerging from indiscriminate waste disposal include the provision of approved dumpsite close to household and work place and urgent removal and collection of household waste as of when due by Edo Waste

Management Board (EWMB). Other suggestions include health education, enactment of stiffer sanitary laws and keeping public toilet clean and construction of drainages.

### **Conclusions**

The conclusion arrived at from the findings of the study has been that pollution is most perceived problems emerging from indiscriminate waste disposal as a result of inadequate waste disposal facilities couple with poor maintenance of toilet facilities and irregular service rendered by the Edo Waste Management Board, stemming from the inadequate sanitary infrastructure. The environmental impacts of delay in waste removal arise to unsightliness thus, reducing the aesthetic nature of the resident.

### **Recommendation**

From the findings of the study, the following are recommended as strategies to reduce upon problems emerging from indiscriminate waste disposal among householders in Ovia north east local government Area Edo State.

- Communal refuse containers should be provided at approved

sites within every 100 meter radius to be manned by employees of Edo State Waste Management Board.

- The "pay as you dump" system should be introduced and the money's collected by those who would man the dumpsite. This will provide the Assemble with the needed fund to ensure regular removal of the refuse as well as remunerate those who would man the dumpsite.
- Drainage system and water channel should be constructed in metropolis in other to reduce the rate of frequent flooding during rain fall.
- Planting of trees should be encourage by householders in other to improve the aesthetics nature of the environment and aid quality ambient air.
- The use of fumigation practice should be adhered to by the householders to eradicate rodents around the vicinity.
- The local authorities should ensure that householders should participate actively in monthly environmental sanitation imposed by the federal government.

- A public education unit of the assembly (if already not in existence) should be established and adequately resourced to embark on regular public sensitization regarding waste management.

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**DEPARTMENT OF HEALTH, ENVIRONMENTAL  
EDUCATION AND HUMAN KINETICS FACULTY OF  
EDUCATION UNIVERSITY OF BENIN  
BENIN CITY.**

**TOPIC: PROBLEM EMERGING FROM INDISCRIMINATE  
WASTE DISPOSAL AS PERCEIVED BY HOUSEHOLDERS IN  
OVIA NORTH EAST LOCAL GOVERNMENT AREA**

Dear Respondent

The purpose of this questionnaire is to obtain information for a research project on the above topic. Your accurate response and cooperation in filling the questionnaire is therefore solicited.

Your information will be used strictly for the purpose of this study and will be treated as strictly confidentially, objective and frank as possible.

**INSTRUCTION**

The Respondent is to provide answer to the questions by ticking (√) in the appropriate box/column.

## **SECTION A: DEMOGRAPHIC DATA**

AGE RANGE: 18—25years [ ] 26—35years [ ] 36 and above [ ]

SEX: Male [ ] Female [ ]

MARITAL STATUS: Married [ ] Single [ ]

RELIGION: Christian [ ] Islam [ ] others [ ]

EDUCATIONAL BACKGROUND: Primary [ ] Secondary [ ] Tertiary [ ]

## **SECTION B**

Before you respond to these questions, it is important you read each item carefully and tick the appropriate column/box.

1. Are there waste bins in your flat? Yes [ ] No [ ]
2. Do you make use of them? Yes [ ] No [ ]
3. Are the waste bins emptied when they are filled? Yes [ ] No [ ]
4. Do you empty your waste bin along the road? Yes [ ] No [ ]
5. Are there bodies set up to monitor the cleanliness of the environment in your area? Yes [ ] No [ ]
6. Is your environment attractive? Yes [ ] No [ ]

7. Do you perceive indiscriminate waste disposal as an eyesore?  
Yes[ ] No[ ]
8. Do you keep your environment clean? Yes[ ] No[ ]
9. Does indiscriminate waste disposal have an impact on the  
unsightliness of the environment? Yes[ ] No[ ]
10. Are workers employed and paid to evacuate the generated  
waste in your flat? Yes [ ] No[ ]
11. Have you witness flood in your street? Yes[ ] No[ ]
12. Do you dispose off your waste in drainage? Yes[ ] No[ ]
13. Does indiscriminate waste dumped in drainage result to  
flooding? Yes [ ] No[ ]
14. Do you clean up your drainage when littered with waste? Yes[ ]  
No[ ]
15. Have you lost property or love one's due to flooding? Yes[ ]  
No[ ]
16. Is your environment healthy? Yes[ ] No[ ]
17. Do you fall sick as a result of unhealthy environment? Yes[ ]  
No[ ]

18. Do you perceive ill-health as a result of indiscriminate waste disposal? Yes[ ] No[ ]

19. Does waste attract rodents within your home? Yes[ ] No[ ]

20. Do you often suffer from malaria? Yes[ ] No[ ]