**EFFECTS OF ENVIRONMENTAL POLLUTION AND IT'S POSSIBLE CONTROL**

**ABSTRACT**

The primary objectives of this study were to ascertain the causes and consequences of environmental pollution in Nigeria, evaluate the repercussions of such pollution, and propose remedies for the obstacles it presents. The research investigation utilised a descriptive survey design. A validation was performed on 86 responses obtained from the survey. The analysis of the collected responses indicated that the burning of refuse and an increase in population and traffic are the primary contributors to pollution in the region. In contrast, waste recycling and legislative measures aimed at environmental protection are regarded as the two most effective approaches to mitigate or eliminate pollution in the area. Moreover, environmental degradation constitutes a significant obstacle in Nigeria. As a result, the study suggests that local governments enact environmental protection laws, supplemented with penalties and sanctions for those who violate them. Furthermore, it is imperative to promote waste recycling within the vicinity and install drainage systems to mitigate erosion.

**CHAPTER ONE**

**INTRODUCTION**

**1.1   BACKGROUND TO THE STUDY**

    There are a total of 983,213 square kilometres of land that make up the country of Nigeria, which is located in West Africa. The World Bank has released figures that indicate the country currently has a population of more than 150 million people. This translates in an average density of more than 120 persons per square kilometre, which is a significant increase from the previous population density. In the annals of Nigeria's long and dramatic history of economic progress, the modern sorts of industrial activity are a relatively new occurrence. This is because they are relatively new. A considerable craft sector existed in Nigeria throughout the pre-colonial period, despite the fact that there was no contemporary manufacturing activity in the country at the time. At the same time as there was a rise in the need for industrial raw materials in Europe, the beginning of the Second World War and the aftermath of it caused significant disruptions to the economy of Nigeria. At the same time, there was also an increase in the demand for raw materials in Europe. A pattern of assembly-type import substitution emerged as the main form of industrial expansion as time went on (Abumere, 2022). This was due to the poor technical base that existed at the time. However, the country's achievement of political self-determination in 1960 opened the door to the possibility of expanding its strategy of import substitution and developing its potentials for a genuine economic takeoff through the production of capital goods. This was made possible by the fact that the country was able to achieve political self-determination. The agricultural sector was the largest contributor to the Nigerian economy prior to the discovery of crude oil in Oloibiri, which was located in Rivers State in the year 1956. Up until the year 1970, this continues to be the situation. During the 1970s, there was a considerable increase in the number of industrial endeavours that were carried out as a direct result of the oil boom that took place. As a result of the abundance of financial resources derived from oil and the lack of a development goal, urbanisation and industrialization occurred without any discernible direction. Despite the fact that this growth was much desired and necessary, it turned out to be a burden not because of the development itself but rather because there were not enough environmental protection mechanisms in place to direct it. This resulted in the establishment of industries without taking into account the impact that they would have on the ecosystem that was surrounding them, which ultimately resulted in the destruction of forests and the growth of deserts. The processing method that was utilised in a number of these industries frequently resulted in the generation of hazardous waste and effluent emissions that were in excess of what was deemed to be acceptable. These events culminated in the destruction of the ecosystem, as well as the occurrence of horrible ecological and human catastrophes. This was the climax of these events. Due to the aforementioned considerations, it became necessary for the expansion of industrial activity to be accompanied by the preservation of the natural environment. The subsequent events led to the enactment of various pieces of legislation for the purpose of protecting the environment, which are also referred to as environmental laws. The researcher, on the other hand, wants to provide an overview of the various environmental pollution issues, as well as the difficulties that have been encountered in developing an efficient environmental enforcement programme and the potential solutions that have been proposed by the government in order to address these issues 202; Acho, 2021). The extraction of oil in the region of Nigeria known as the Niger Delta is the primary factor that drives the economy of the country, but it is also the primary factor that contributes to the major environmental and social problems that confront the region. Throughout the course of Nigeria's history, the exploration, extraction, and refining of oil have resulted in a wide range of environmental and ecological challenges across the country. Environmental problems such as oil spills, petrol flares, the destruction of habitat, contamination of air and water, and the deterioration of land are among these challenges. Additionally, the operations of illegal oil bunkering and illegal refineries that are carried out by indigenous and certain highly placed individuals in government are a substantial cause to the oil pollution that is present in the same region. The pollution that is caused by these activities accounts for a sizeable portion of the contamination. It is not uncommon for the chemical properties of oil that has been spilled to have an impact on the productiveness of the soil and to contaminate water bodies. This, in turn, may cause harm that cannot be undone to agricultural areas as well as aquatic bodies. The flaring of petrol is a significant environmental and economic problem in Nigeria, and the country's annual emissions of carbon dioxide are approximately 70 million metric tonnes (Agbola, 2021). According to Agukoronye (2022), this has a detrimental effect on the socioeconomic activities of the communities that are located in the surrounding area, which are primarily dependent on the fishing and agricultural industries. Flaring is estimated to be responsible for 49 premature deaths, 5000 respiratory disorders among children, around 120,000 asthma attacks, and 8 new causes of cancer each year in just one region of the Niger Delta (Environmental Rights Action and the Climate Justice Programme). These figures are based on estimates from the Environmental Rights Action and Climate Justice Programme.
One of the most severe environmental issues that Nigeria is currently facing is the poisoning of its water supply. According to Areola (2022), the enormous forestry sector in Nigeria is the key factor that contributes to the problem of water pollution in the country. Deforestation and improper methods of soil tillage both contribute to an increase in the concentration of soil particles that make their way into water bodies, which in turn leads to an increase in the sediment loads in those water bodies. This cycle continues until the water bodies get an increased amount of sediment. The discharge of waste materials from industrial activities into bodies of water is another key factor that contributes to the pollution problem in Nigeria. As a consequence of discharges from many industries, including but not limited to petroleum, mining, iron and steel, pharmaceuticals, and textiles, the levels of sulphates and nitrates that are found in bodies of water have increased. Furthermore, as a consequence of these discharges, the characteristics of water bodies, such as their colour and odour, have been altered (Aribigbola, 2020). Because of the existence of these metals and other chemical substances, the water bodies and the soils tend to become more poisonous. This is because of the presence of these chemicals. A sizeable population in Nigeria obtains the majority of the water that they use in their homes, including for drinking and cooking, from ponds, streams, and shallow wells. This includes the water that they use for cooking and drinking. As a consequence of this, water pollution is a huge public health problem that puts the lives of around forty million people in jeopardy due to a wide range of infectious diseases, such as cholera, dysentery, diarrhoea, and typhoid (Aribigbola, 2020). The degradation of the environment that has taken place in Nigeria has been significantly influenced by waste that has been produced by both households and industries throughout the country. Significant environmental and aesthetic problems are caused in the majority of Nigeria's urban districts by the improper disposal of municipal solid trash and industrial garbage, as well as by the poor management of both forms of waste. These problems are caused by the fact that both categories of waste are not properly managed. The majority of municipal districts are currently producing more rubbish than they are able to adequately manage (Bain, 2022). This is on account of the fact that excessive population and the growth of slums have contributed to this situation. As a consequence of this, garbage heaps have collected in "many spots, obstructing roadways and making travel along alleyways and footpaths, which is impossible" (Aribigbola, 2020). When it comes to the disposal of waste in Nigeria, the most common method is the transfer of trash from one area to another, followed by the incineration of trash. The initial approach involves transferring debris from a location that is judged to have a higher aesthetic value to a location that is perceived to have a lower value. Moving from one region to another is the movement that is taking place here. Because of the emission of gases and other particulate matter, the practice of incinerating rubbish as a method of waste disposal frequently contributes to the degradation of the environment. These gases and particulate matter include carbon monoxide, sulphur dioxide, oxides of nitrogen, halogenated carbons, and a variety of other gases and substances.
In order for the government to be able to regulate the problems that are associated with environmental pollution, it is necessary for the government to enact and enforce the appropriate environmental laws. In order to put a stop to the recent surge in environmental pollution in Nigeria, it is possible to accomplish this goal by putting in place the appropriate enforcement institutions for environmental pollutant pollution. The government must act in this manner because it is necessary.

**1.2   STATEMENT OF THE PROBLEM**

Irrespective of the numerous environmental laws enacted to protect the environment, environmental degradation has continued unabated. Oil spillage and gas flaring activities are still commonplace in Nigeria, especially in the oil-rich Niger Delta. Gas flaring has also continued unabated irrespective of the Nigerian government’s directive to end flaring by 2010 (Kalu, 2009). The Idoho oil spill incidence of 1997 spilled 40,000 barrels of crude oil into the environment. It travelled all the way from Akwa Ibom state to Lagos state dispersing oil through the coastal states, up to the Lagos coast. According to the Department of Petroleum Resources, between 1997 and 2001, Nigeria recorded a total number of 2,097 oil spill incidents amounting to 1,947,600 barrels of crude oil. Thousands of barrels of oil have been split into the environment through our oil pipelines and tanks in the country. Enforcement of environmental regulations is still poor as industries continue to discharge untreated waste water into the environment. Heaps of refuse are always a constant sight to behold in Nigerian streets and markets.

Most recently, in December 2011, the SPDC’s Bonga offshore platform spilled about 40, 000 barrels of crude oil into Nigerian waters. On January 16 2012, a gas explosion occurred at the Finuwa oil field owned by Chevron Nigeria Limited. The Nigerian government was shockingly silent about these two incidents. This study however wants to identify the problems of environmental pollution and proffer solution to the issue.

**1.3   OBJECTIVES OF THE STUDY**

The following are the objectives of this study:

1.  To identify the issues of environmental pollution in Nigeria.

2.  To analyze the impact of environmental pollution in Nigeria.

3.  To determine the solutions to the challenges of environmental pollution in Nigeria.

**1.4   RESEARCH QUESTIONS**

1.  What are the issues of environmental pollution in Nigeria?

2.  What is the impact of environmental pollution in Nigeria?

3.  What are the solutions to the challenges of environmental pollution in Nigeria?

**1.5   HYPOTHESIS**

HO: Environmental pollution is not a major challenge in Nigeria

HA: Environmental pollution is a major challenge in Nigeria

**1.6   SIGNIFICANCE OF THE STUDY**

The following are the significance of this study:

1.  The outcome of this research will educate the general public on the issues and the adverse effect of environmental pollution in Nigeria.

2.  The findings from this study is going to necessitate measures that will lead to demand for improved implementation of environmental pollution control laws in Nigeria

3.  This research will also serve as a resource base to other scholars and researchers interested in carrying out further research in this field subsequently, if applied, it will go to an extent to provide new explanation to the topic.

**1.7   SCOPE/LIMITATIONS OF THE STUDY**

This study on environmental pollution in Nigeria will cover all cases of environmental pollution ranging from air and water pollution due to oil exploration and refining, effluent waste from industries, dump sites all over Nigeria market and streets and even noise pollution.

**LIMITATION OF STUDY**

**Financial constraint**- Insufficient fund tends to impede the efficiency of the researcher in sourcing for the relevant materials, literature or information and in the process of data collection (internet, questionnaire and interview).

 **Time constraint**- The researcher will simultaneously engage in this study with other academic work. This consequently will cut down on the time devoted for the research work.

**REFERENCES**

Amukam, O., (1997). Pollution control regulation the Nigerian oil industry (Lagos: N.I.A.L.S.1997).

Ogbonna, E.A., and Ekweozor, P., (2000): The Adverse Effects of Crude Oil Spills in the Niger Delta. Urhobo Historical Society.

Ajayi, A. & Ikporokpor, D., 2002. International Environmental law (Ardley son: Transnational Publishcrs).

Orubu, E.A. (2006) The Community of Oil Exporting Countries New York: Cornell University Press).

Kalu V. E., LL.M, BL, (2009): Toxic Wastes And the Nigerian Environment; Dept. Of Private &Property Law, University of Benin: An Appraisal.

Adelegan, M.M., 2004: Nigerian Petroleum Law and Practice (Ibadan. Nigeria: Fountain Books).

Pearson, S.R., Petroleum in Nigerian Economy (California: Stanford University Press,1970).

**CHAPTER TWO**

**LITERATURE REVIEW**

**2.1 Introduction**

The arrival and reproduction of man on earth has caused a lot of impact and havoc on the Biosphere (environment) which supports life and sustains various human activities.[1]

[3], expresses that due to man unchecked actions, for example large scale deforestation of forest for residential and agricultural land uses has changed the habitat organism living in the forest. The hunting of animal by man as led to the extraction of certain animal species. Man has also developed new types of domesticated animals as well as plants to serve his own needs. The rapid increase in activates today in many cities without proper planning and control is the outcome of slums that has penetrated in our physical environment.

This is evident particularly in housing sector, transport, water supply, sanitation, power supply and even in employment sector. Those that are presently not employed are equally polluting our environment by engaging themselves in different harmful activities (stealing, pollution, idleness, Etc.) since there is nothing to keep them busy always in the society. The problem of environmental degradation and pollution of water, air, and noise is always on high increase in many cities without proper check, which evidently has resulted in low standard of living in many of our cities and town in Africa [2]

This chapter basically discusses Environmental and Pollution as well as the various Types of Pollutions, Causes of Environmental Pollution, Sources of Environmental Pollution and Effects of Environmental Pollution, it also includes Environmental laws and Policies, the concepts of Environmental laws and the Historical background of the laws.

**2.2 DISCUSSION ON ENVIRONMENT AND POLLUTION**

**2.2.1 Environment**

The word “environment” may mean different thing to different people. Scientifically, the Physical, environment is different from social or economic. Environment means” that which surround or that which envelop the earth and it consist of the entire ecosystem. Scientifically, the four spheres or division of the earth VIZ: - Lithosphere, Hydrosphere Biosphere, and Atmosphere.[5] This could be broken to include the water body and life therein, landmass, forests, grassland, deserts, animals, man himself and all the interactions taken place among those group. Environment is also defined as the circumstances surrounding or regions in which everything exist. Everything external to the organism is included in it. It also includes open field, mountains, forest, Deserts, snow, Seas, River, Lakes, Wells Springs, atmosphere Etc.

Environmental Quality

Waste disposal and Drainage

Water

Sanitation

Housing

Access to Adequate waste disposal and Drainage

Access to safe convenient and adequate water

Access to adequate Sanitation

Access to health and Housing

Declining what constitute safe water supply, health, housing and Adequate Sanitation

 **Figure 1.** Showing different components of Environmental quality

**2.2.2 Environmental quality and its effects**

Environment quality is a product of many factors that reduce the quality of an environment from what it should be in the physical outfit. General factor such as land degradation, pollutions of water and Air, noise, Sanitation, over pollution, slums, etc., usually reduced the quality of an environment. Since environmental quality involves standard, [8] provided a simple approach for ensuring the quality of an environment with illustrative sketch as shown above (figure 1) [8] also added that the main concerned for the environment are the following:-

i. How the Atmosphere, the rivers and the oceans are being polluted

**ii.** How people might be causing global warming.

**iii.** How people are destroying the world’s forests and other wilderness areas.

**iv.** How people are endangering the survival of other species

v. How people are being careless with toxic (life threatening) washes.

Research also added that the above measuring technique is applicable in many countries of the world. In addition, the account for environmental differences in many countries is based on the following:-

 i. Climatic condition.

ii. Topographic and fertility of the soil.

iii. Availability of industries

iv. Commercial centers and parks.

**Pollution**

**2.3 T**his is the contamination of air, land and water that may harmfully affect life. The four main classified substances are; air, land, water and noise pollution. The pollutants when injected into the biosphere in greater quantities affect the functioning of the ecosystem and exercise adverse effects on plants, animals and man. Much of what we know of our society comes from the waste they left behind.[9] Refuse such as animal skeletons and implements reveals hunting technique, diet, clothing, tool usage and the use of fire for cooking. Prehistoric refuse heaps or middens discovered by the archeologist in coastal areas of North America reveal information about the shell fish diet and eating habits of Native Americans who lived more than 10,000 years ago.

Also, the magnitude and severity of pollution increased as humans developed new technologies in the society.[10] Pollution had evolved from many localized problem to one of global consequences in the environment, but changed atmospheric and climatic conditions interfere with human health, the quality of life or the natural causes, such as volcanic eruption, mostly caused by human activities.[11] Pollutants can be classified into two categories such as biodegradable pollutants such as sewage which can rapidly be decomposed by natural processes. These pollutants become problem when added to the environment faster than they decomposed while non-degradable pollutants are materials that either do not decompose or decompose slowly in the natural environment –once contamination occurs, it is difficult or impossible to remove the pollutants from the environment.

**2.4 Pollution and general view**

The urban environment is usually polluted by three major sources, VIZ, Water, Air, and Noise. The world development report of 1992 highlighted the general effect of pollution on health. It also noted that the Tropical forest- the primary source of livelihood for about 140 million people are being lost at the rate of 0.9% annually. The above facts clearly speak for themselves about the alarming rate and situation that many developing countries are facing, including Nigeria due to environmental Degradation.

Environmental pollution, especially regarding air and atmospheric pollution, according to the [12], is “limited to situations in which the outer ambient atmosphere contains material in concentrations which are harmful to man and his environment”. However, Ibadan metropolis, which had in the past enjoyed fresh and dry air, is today experiencing serious environmental pollution. The spread of pollutants into the air comes mainly through various smokes from vehicles; generators (due to epileptic public power supply), factories and heap of refuse sites which have been found to have direct influence on the environment. The resultant effect of air pollution as smog (mixture of smoke and fog) leads to respiratory diseases, and this reduce human life span and result in cloudiness, which among other effects, reduce visibility and is a potential danger to road traffic and air transportation in Ibadan. [13].

**2.4 Types of pollution**

Pollution exists in many forms and affects many different aspects of earth environment. Point source pollution comes from specific, localized, and identifiable sources, such as sewage; pipeline or industrial smoke stacks. While non-point source pollution comes from dispersed or uncontained sources, such as contaminated water, run off from urban areas or automobile emissions. The effects of these pollutants may be immediate or delayed. Here, primary effects of pollution occur immediately after contamination occurs, such as the death of marine plants and wild life after an oil spills at the sea while secondary effects may be delayed or may persist in the environment into the future perhaps going unnoticed for many years.[14]

Also Dichlorodipheny (trichloro ethene (D.D.T.) a non-degradable compound seldom poisons birds immediately, but gradually accumulates in their bodies. Birds with high concentrations of this toxic chemical lay thin shelled eggs and fail to hatch or produce deformed offspring. These secondary effects threatened the survival of species such as the bald eagle and peregrine falcon, and arouse public concern over the hidden effect of Non degradable chemical compounds. While types of pollution that affects man in the society includes, Air pollution, water pollution, Land pollution and noise pollution to mention but a few.

**2.4.1 Air pollution**

Air pollution means the presence of any abnormal material or property in the air that reduce the usefulness of the air resources. The term pollution may be referred in context with outdoor open atmospheric conditions, localized air condition, and enclosed space conditions.[15]

2.4.1.1 **Sources of Air Pollution**

1. Fuel burning operation for heat and power generation in large steam electric generating plant, in-residence, in hotels, clubs, hospitals and in different processing of laundries, Drycleaners, garage and service station.

2. The refuse burning operation in different, municipalities industries and residential apartment

3. Burning of fuels for modes of transportation which includes trucks, buses motor vehicles, and rail using petrol, diesel and gasoline.

4. Industrial and commercial process emission in different manufacture process namely metallurgical plants, chemical plants, refineries mineral production, etc.

**2.4.1.2 Cause of air pollution**

1. Increase in population and traffic

2. Development of industries

3. Development of automobile engineering

4. Thermal and nuclear generation

5. Development of agriculture etc.

**2.4.1.3 Forms of air pollutions**

1. Smoke

2. Dust

3. Gases

4. Particulate matter from industrials, power generation plants, road-way dust. Etc.

5. Hydrocarbon- from automobile exhaust

6. Sulphur compound

7. Nitrogen compound

8. Carbon compound

9. Fluorine compound

10. Chlorine compound

|  |  |
| --- | --- |
|  **Air pollution** |  **Effect on human health** |

1. Sulphur dioxide Causes suffocation, respiratory disease, Irritation of eyes and throat

2. Hydrogen Sulphide danger of respiratory paralysis

3. Hydrogen Fluoride Cause skin disease

4. Carbon Monoxide Causes lungs diseases and slow poisoning leading to death

5. Oxidants Causes lungs diseases.

Air pollution is particularly a health problem in rural areas. Millions of poor people in urban area also suffer from its effect, however, some estimates suggest that worldwide urban indoor air pollution kills about 600,000 people annually.[16]

Air pollution is a major health problem because worldwide almost 3 billion people rely on biomass fuels which are mostly wood, charcoal, and animal dung for household cooking and heating.[16]

**2.5 Water pollution**

Pollution of water refers to an impairment of water quality that interferes with the use of water, sewage, industrial wastes and agricultural. Chemical such as fertilizers and pesticides are the main causes of water pollution in developing nation; more than 95% of urban sewage is discharged untreated into rivers and bays, creating array or human health hazard. Industrial pollutants that run into streams, rivers or lakes can have serious effect on wildlife, plants and humans [17]. If the source of the water supply is a well or a borehole, it has been observed that during the raining season there is usually a massive increase in coliform counts. This occurs as a result of the flushing-in of fecal materials of mixed human and animal origin [18]. Also the well stands the risk of pollution if the sides are not properly lined. During the rainy season, there is adequate seepage of water into the ground, the indicative organisms or other pathogenic microorganisms thereby find their way into the well. This case occurs when or where the well is so close to a septic tank and so on.

Also, erosion, the wearing away of top soil by wind and rain can contribute to water pollution. Soil and silts washed from logged hill side, ploughed fields, or construction sites, can dig water ways and kill aquatic vegetation. Even a small amounts of silt can eliminated desirable fish species, for example, when logging removes the protection plants cover from hill (sides, rain may wash soil and silt into streams, covering the gravel beds that trout or salmon use for spawning.

Moreover, urban water supplies often are contaminated from a variety of sources, including discharge of untreated industrial wastes, leaching from waste dumps, into surface and ground water, inadequate treatment of sewage and poor solid waste management [19]. Few cities in developing countries have adequate sewage systems; and they often are limited to more advantage areas. Purification and recycling of water waste in sewage treatment plant is rare. Even fewer people have access to improved sanitation facilities than improved water supplies. According to [20] two thirds of urban population in developing countries does not have adequate sanitation in that they lack flush toilet sanitary latrine, or a pit that can be covered over.

In addition, worldwide, about 2.3 billion people suffer from disease that arc linked to water problems [21]. Water related diseases kills millions of people each year preventing millions more from leading healthy lives and undermined developmental efforts [22].

Water related diseases include diarrhea, schistosomiasis, trachoma, ascariasis, trichuriasis and hookworm disease. [23]. Diarrhea diseases are the major water borne malady, responsible for 90% of the health problems related to water supply and sanitation. An estimated 4 billion cases of diarrhea disease occur every year causing 3 million to 4 million deaths, mostly among children [24] other diseases such as cholera can be endemic when there is poor food - hygiene, lack of sanitation or unsafe drinking water [25].

**2.6 Noise pollution**

Noise pollution is at its worst in densely populated areas. Unwanted sound, or noise, such as that produced by air planes, traffic or industrial machinery, or radio repairing shops is considered a form of pollution. It can cause hearing loss, stress, high blood pressure, sleep loss, distraction and low productivity. Sounds are produced by objects that vibrate at a rate that the ear can detect. Most humans can hear sound between 20 and 20,000 hertz, while dogs can hear high pitched-sounds up to 50,000 hertz. Noise pollution is related to the intensity of the sound or the amount of energy it has measured in decibels, noise intensity can range from zero, the quietest sound the human ear can detect, to over 160 decibel. Solution to noise pollution include adding insulation and sound proofing to doors, wall and ceiling using ear protection; particularly in industrial working areas, planting vegetation to absorb and screen out noise pollution and zoning urban areas to maintain a separation between residential areas and zones of excessive noise [26]

Violent noise may cause temporary or permanent impairment of hearing. Noise is also of the major causes of stress and many of the other human affliction associated with tension, anxiety, accident proneness, high blood pressure and other diseases. The noise produce in urban area due to industrial activities, increases in traffic etc., cause tension and stressed related disorders.

**2.6.1 Adverse effect of noise**

i. It can cause loss of sleep

ii. It can increase blood pressure

iii. It can cause irritation of mind

iv. It can cause digestive disorder

v. It can develop hypertension

vi. Sudden loud noise can cause heart failure

vii. The prolong exposure to noise may result into temporal deafness or nervous back down

viii. It affect attitude and psychological reaction

ix. It can spoil the essence of music and speech

x. It can creates uncomfortable living conditions

xi. It usually interferes with speech communication.

**2.6.2 Sources of noise**

i. Domestic noise

ii. Public noise

iii. Traffic noise

iv. Construction noise

v. Industrial noise

**2.7 Land Pollution**

Land pollution basically is about contaminating the land surface of the Earth through dumping of urban waste matter indiscriminately, dumping of industrial waste, mineral exploitation, and misusing the soil by harmful agricultural practices.

Land pollution includes visible litter and waste alone with the soil itself being polluted. The soil gets polluted by the chemicals in pesticides and herbicides used for agricultural purposes along with waste matter being littered in urban areas such as roads, parks, and streets.

Land pollution is the degradation of the Earth's land surface through misuse of the soil by poor agricultural practices, mineral exploitation, industrial waste dumping, and indiscriminate disposal of urban wastes. It includes visible waste and litter as well as pollution of the soil itself. Land pollution is pollution of our planet’s land surface.

**2.7.1 Composition of Land Pollution**

**2.7.1.1 Solid Waste**

Solid wastes are unwanted solid materials such as garbage, paper, plastics and other synthetic materials, metals, and wood. Semisolid or solid matters that are created by human or animal activities, and which are disposed because they are hazardous or useless are known as solid waste. Most of the solid wastes, like paper, plastic containers, bottles, cans, and even used cars and electronic goods are not biodegradable, which means they do not get broken down through inorganic or organic processes. Thus, when they accumulate they pose a health threat to people, plus, decaying wastes also attract household pests and result in urban areas becoming unhealthy, dirty, and unsightly places to reside in. Moreover, it also causes damage to terrestrial organisms, while also reducing the use of the land for other, more useful purposes. Billions of tons of solid waste are thrown out annually. Waste from developed countries typically contains a high percentage of synthetic materials that take longer to decompose than the primarily biodegradable waste materials of developing countries.[27]

Areas where wastes are buried, called landfills, are the cheapest and most common disposal method for solid wastes worldwide. But landfills quickly become overfilled and may contaminate air, soil, and water. Incineration, or burning, of waste reduces the volume of solid waste but produces dense ashen wastes (some of which become airborne) that often contain dangerous concentrations of hazardous materials such as heavy metals and toxic compounds. Composting, using natural biological processes to speed the decomposition of organic wastes, is an effective strategy for dealing with organic garbage and produces a material that can be used as a natural fertilizer. Recycling, extracting and reusing certain waste materials, has become an important part of municipal solid waste strategies in developed countries.

Expanding recycling programs worldwide can help reduce solid waste pollution, but the key to solving severe solid waste problems lies in reducing the amount of waste generated. Waste prevention, or source reduction, such as altering the way products are designed or manufactured to make them easier to reuse, reduces the high costs associated with environmental pollution.

Some of the sources of solid waste that cause land pollution are:

**(a) Wastes from Agriculture:** This comprises of waste matter produced by crop, animal manure, and farm residues.

**(b) Wastes from Mining:** Piles of coal refuse and heaps of slag.

**(c) Wastes from Industries:** Industrial waste matter that can cause land pollution includes paints, chemicals, and so on.

**(d) Solids from Sewage Treatment:** Wastes that are left over after sewage has been treated, biomass sludge, and settled solids.

**(e) Ashes:** The residual matter that remains after solid fuels are burned.

**(f) Garbage:** This comprises of waste matter from food that are decomposable and other waste matter that are not decomposable such as glass, metal, cloth, plastic, wood, paper, and so on.

**2.8 Soil Pollution**

Soil pollution is the buildup in soils of persistent toxic compounds, chemicals, salts, radioactive materials, or disease-causing agents, which have adverse effects on plant growth and animal health. As of now, soil pollution is not widespread. Although the application of fertilizers containing the primary nutrients, nitrogen, phosphorus, and potassium, has not led to soil pollution, the application of trace elements has. The irrigation of arid lands often leads to pollution with salts. Sulfur from industrial wastes has polluted soils in the past, as has the accumulation of arsenic compounds in soils following years of spraying crops with lead arsenate. The application of pesticides has also led to short-term soil pollution.[28]

Unhealthy soil management methods have seriously degraded soil quality, caused soil pollution, and enhanced erosion. Treating the soil with chemical fertilizers, pesticides, and fungicides interferes with the natural processes occurring within the soil and destroys useful organisms such as bacteria, fungi, and other microorganisms. Soil pollution is chiefly caused by chemicals in pesticides, such as poisons that are used to kill agricultural pests like insects and herbicides that are used to get rid of weeds. Hence, soil pollution results from:

a. Unhealthy methods of soil management.

b. Harmful practices of irrigation methods.

**2.9 Environmental Laws and Policies**

Environmental law was developed in response to the public perception that human health and the environment were inadequately protected. It is at this point that the Environment needs protection, and whether law is successful in protection of the environment will depend significantly upon the range of entities that it is able to protect.

It is imperative that Environmental law is a concept that will be discussed in this unit using various scholarlastic ideas in that direction and succinctly, students/readers will be abreast with the facts dealing with the topic. And the Government participation by all tiers is inevitable if measures designed to protect the environment is to be effective. It is at this point that, law has a key role to play regardless of technological or scientific design or devices. The core objective of preservation, conservation and maintenance of purify environment can only be achieved only if the law can be mobilized to operate in partnership with science and technology. Environmental law in Nigeria is that branch of public law which contains rules and regulations which have as their object or effect the protection of the environment.

Environmental law cannot be discussed globally without the concept of the environment. The definition and the concept of the environment law come in as a predictable attendant to protect the environment by way of regulating and regularizing the environment against abuse and ill-treatment by the human elements (who are the presenters and beneficiaries of the environment).

**2.9.1 Definition of Environmental Law**

Generally, the modus operandi for defining the environmental law depends largely on individual environmentalist who is saddled with responsibility of defining the subject matter. “At one extreme, it can mean pollution control law, at the other, Einstein would say that it is the law which belongs to everything that is not one. For most people an acceptable compromise has to be found between these positions” [29]. Another attempt may mean ‘the law relating to the protection of public health and our natural and manmade surroundings. The Environment is where we all live in and the law is what we live in and by. Environmental law is a complex and interlocking body of treaties, conventions, statutes, regulations, and common law that, very broadly, operate to regulate the interaction of humanity and the rest of the biophysical or natural environment, toward the purpose of reducing the impacts of human activity, both on the natural environment and on humanity itself. Rodgers (ref) stated that environmental law cannot repeal the rain and the wind nor can it repeal the law of ecology. What it can do is to attempt to create order out of chaos as law cannot after the environment. In the views of [30], it is the body of the laws to which the label environmental has been attached is concerned with protecting the natural resources of land, air and water, the three environmental media and the flora and fauna which inhabit them.

Environmental law draws from and is influenced by principles of environmentalism, including ecology, conservation, stewardship, responsibility and sustainability. The law is seen as the body of laws concerned with the protection of living things (human beings inclusive) from the harm that human activity may immediately or eventually cause to them or their species, either directly or to the media and the habits on which they depend. Environmental law covers the whole universe including not only human beings but also plants, animals, forests shrubs, refuse, bacteria/diseases and insects [31].

**2.9.2 The Concept of Environmental Law**

The word concept means an abstract notion, a mental impression of an object; it could also be referred to the idea underlying a class of things or the general notion of that thing.

Generally in discussing the concept of environmental law, then an expository look at the word environment cannot be overemphasized. Literally, environment means that which surrounds so, in a sense, the environment is the whole physical universe. However, the Cambridge Encyclopedia defined the environment as the conditions and influences of the place in which an organism lives. The concept of environmental law refers to the integrated rules and Principles, i.e., legal norms, the purpose of which is to achieve environmental conservation. Naturally, in discussing the concept of environmental law our minds will be directed at what constitute the ideas, the policies and the juridical basis that gave prominence to the need to have and develop the word environmental law.

In the words of a former member of International Court of Justice (I.C.J), Honourable Prince Bola Ajibola he added credence to the opinion mentioned above that: “It is the policy of the administration to vigorously pursue the protection of the Nigerian environment in order to preserve the quality of life of all citizens and conserve the resources for the benefit of future generations of Nigerians.”

The concept of environmental issue has taken a serious dimension worldwide and Nigeria is not an exception in the new horizon of not mere control, protection and management of environmental health problems but with legal policing. “The reason for this rapid paradigm shift in Nigeria in recent years may not be divorced from the dumping of harmful toxic waste materials in Koko in the Delta State (formerly part of Bendel State) in June, 1988 and the need to redefine our hitherto concept of the environment”.

In the 1970s, the environment was described as ‘an international issue and these have not spurred the Nigerian national government into action until the event of widely published Koko saga in June 1988, “The Koko Toxic Waste Dump”. This actually stands as a stimulant the Nigerian government waited for to spark off her action. Since 1988, national focus on the Nigerian environment and environmental programs and policies cannot be over-emphasized.

This was supported by late Chief F.R.A Williams (SAN) when he stated that “prior to 1988, legal and administrative measures covered mainly protective and preventive measures relating to environmental sanitation and issue on public health; warning and emergency measures to reduce potential harm in case of natural disasters and context of Nigeria Law which whilst paying due regard to global movements and ideas as well as the increasing interest of the international community on the problems pertaining to the environment”.

It was also categorically stated by Okorodudu – Fubara that “until the adoption of the National Environmental Policy on the Environment in 1989, Nigeria has no distinct and clearly articulated national policy goals for the Nation’s environment” The Koko toxic experience, led Nigerian Military Government to promulgating the Federal Environmental Protection Agency Decree 1988 No 58. It was the first of its kind since Nigeria Independence in 1960 and in line with 1972 Stockholm Conference on Environment which Nigeria was a signatory.

The “Koko Toxic Waste Dump” gave credence to a nationally unified law/national policies and programme on the Environment which eventually led to the promulgation of the two basic Decrees that is Federal Environmental Protection Agency Decree 1988 No 58. The Harmful Waste Special Criminal Provision Decree 1988, No 42;

To this extent Nigeria as a nation moved away from being a mere control and compensation of hazards, however included laws meant for monitoring, reduction and possible prevention of environmental pollution.

Furthermore, the environmental problems on the other hand have no exclusive terrain, but rather a universal global problem. After all, there is only one world environment and no nation can exist in isolation, hence, the environmental problems cut across socio-political, geographical and international boundaries.

**2.9.3 Historical Backgrounds to Environmental Law**

The environment is a beautiful place to live in once treated in that regard, it is to this extent that the environment cannot be discussed without its evolution world over. The environment as beautiful as we have described it is faced with the twin pressure of population and development, and these environmental menaces however, results in its deterioration and diminution of the natural resources at a frighteningly state.

Day in, day out, our environments are been polluted with various unlawful disposals of waste, like the traditional pollutants, despite this the sprain of unimpeded effluents and secretion from hazardous industries has caused pollution of the environment and consequent human health hazards.

The world becoming a global village has really affected the environment and generally the populace are not really ready to take care of the environment in proportion with the world developments, with the spring of reckless industrial growth and this may lead to an over exploitation and destruction of natural resources to an extent such that disaster will be the order of the day as the environmental support system has been damaged beyond repair.

In the words of [26] he stated that there is a need then to strike a balance between environment and the technological development so that we may have sustainable development. He added further that "Environmental pollution which has become a worldwide problem, many nations is giving it some required attentions. The United Nations Conference on Human Environment in 1972 was an initial major effort to diagnose the unsatisfactory state of global environment.

The efforts of the United Nations cannot be overemphasized, despite these efforts most of the nations of the world, has no national policy or laws to protect their environment, despite various threat posed by the environmental hazards. Then the advent of the United Nations Conference tagged the Stockholm Declaration on the Human Environment 1972, which for the first time in the history of the world, presented a communiqué on a legal regime for environmental protection, which highlights the problems and recommends measures to make the system of regulatory environmental management more effective and proactive.

Nigeria as a nation was not an except to the slow development of the concept of environmental law, the nation has no single policy or law relating to the protection of the environment and this has caused a whole lot of hazards to the environment and human in general.

This attitude however brought about the incident of the Koko Toxic waste that was dumped Koko in Delta State (then Bendel State) in 1988. This singular act that is detrimental to the nation brought the Federal Government of Nigeria into action towards promulgating environmental law and enforcement of international declaration on environmental laws.

Africa is not the only continent in the world that is affected by these multi various environmental problems, it is a global problem which the Stockholm Declaration on the Human Environment held by the United Nations Organization on the problems of Human Environment had addressed. In response to this declaration, African nations adopted this report by organizing Lawyers Seminar on the development of environmental protection legislation in the Economic Commission for Africa Region (ECA) which critically discussed at the second meeting of the Technical Preparatory Committee of the WHOLE in Freetown, Sierra Leone in March 1981. This conference report was adopted by the 16th session of the Commission and 7th meeting of the conference of the Ministers which took place in Freetown in April 1981 by its Resolution 412 (xvi).

**2.10 Pre - Koko Toxic Waste**

It is imperative to reiterate that before the advent of the colonial era in Africa and Nigeria in particular, the people have a method of disposal of refuse and cleaning their environment, this is done through community efforts in cleaning and beautifying the environment and refuse are been dumped in the appropriate place created by the community at large. And in achieving this act, the communities were very conscious of their environment. And to this extent mutual rules, regulations, customs, norms, ethics and cultural aestheticism to manage their immediate environment where been formulated. These ways and means of tidying and avert pollution in their surroundings cut across hamlets, villages, towns and cities which formed the communities. The days for environmental sanitation are been fixed, this is still however in place in most communities especially the south west of the country.

However, most of the environmental pollutants in the present world were not on ground in those days, no industrialization as it is now, the population has tremendously on the increase, the pressure on the land, water and air space are too many no vehicle to emit into the atmosphere. Therefore, the ozone layers depletion, scourge of erosion, deforestation, toxic waste disposal/hazardous waste or/effusion were not known or at very insignificant stage unlike the present world where the environmental problems are posing serious threat to the sustainability of the world [25]

In the era of the colonial masters there was no fantastic policy or law on environmental policy and programme. Most of the efforts of the colonial lands were geared towards Economic and Political interests, not in terms of maintenance of personal and public health. Although, the era was actually the beginning of formal policy/or programme and conceptual formulation by the colonial government to address some form of environmental pollution.

However, it may be observed that during colonial times as in the immediate post-independence era in Nigeria, the perceived environmental problems actually for some form of control and management were principally in the area of domestic management. There was no regulated policy on forest conservation at the time which was capable of achieving suitable development, neither was there any legal mechanism in place to check the emerging environmental problems due largely to the economic activities of the colonial powers [20].

In the era of the colonial, there was no national environmental regulation aside the sanitary officers who were available in the urban areas and sub-urban but not in the rural areas.

Naturally it was not unusual that Nigeria government was not paying serious attention to the environmental problems but there were certain laws that were in place and used for the general protection of the environmental especially government formulations to check some form of environmental pollution, in the criminal code Cap 77 LFN 1990, there are provisions which sanction on the pains of punishment of malodorous of water in spring, stream well, tank reservoir, and the burial of corpses within a hundred yard of a dwelling place, the vitiation of the atmosphere so as to make it noxious to the health of persons.

The period between 1960 and 1988 marked the era of political-socio-economic factors which began to enhance the development of the concept of environmental law in this part of Africa. This period however witnessed the development of cocoa industries and many other cash crops, which created many problems in terms of pollution and attracted industrial waste management in variably, infected the environment with various kinds of pollutants.

However, the discovery of oil and subsequent oil boom in the early seventies depicts the state of unpreparedness of the government of the day for the environmental quandary which usually associated with industrial development [33].

In response to the impact of industrialization on the environment, a new course of environmental law had to be charted. This brought about the enactment of some laws such as Factories Act, the Oil Pipeline Act, 1956, the oil in Navigable Waters Regulations 1968, Petroleum Act 1969, Petroleum (Drilling and Production), Regulations 1969, Petroleum Drilling and Production (Amendment) Regulations 1973, Petroleum refining Regulations 1974. And [32] said these laws and regulations to a greater extent depicts a sudden difference in the concept of environmental law from what it was colonial era. [15] posited that the protection of the citizens health, the balancing of his ecosystem, adequate management of natural resources, the problem of compensation of pollution victims, and socio-economic and political consideration actually accounted for this movement in the concept of environmental law.

The dumping of the toxic waste in June 1988 actually changed the perspective the government of the nation to the issue of the environment and naturally brought about more laws in line with the environment, and it is at this point that the government of Nigeria promulgated the Federal Environmental Act of 1988.

**2.11 The Post Koko Toxic Waste**

In Nigeria, the “Koko incident” of 1988 rudely jolted the Nigerian government to the reality of toxic wastes when same were dumped at Koko port in the then Bendel State of Nigeria by some Italian business frauds with the active connivance of poverty stricken, ignorant and hungry villager, Sunday Nana for a miserable sum of N500.00 monthly. Prior to 1988, the government of Nigeria had no meaningful environmental policy. Thanks to the resourcefulness of the Italian businessmen and Sunday Nana, the Nigerian government in its usual fire brigade approach to problems, came out with, the Harmful Waste Decree 42 of 1988. The incidence also facilitated the establishment of the Federal Environmental Protection Agency (FEPA) through Decrees 58 of 1988 and 59 as amended) of 1992. FEPA was then charged with the overall responsibility for environmental management and protection across the country. This was until 1999, when FEPA and other relevant Departments in other Ministries were merged to form the Federal Ministry of Environment, now Federal Ministry of Environment, Housing and Urban Development.

It became a prominent issue at the public and government levels in Nigeria. Worldwide, the environmental threats are noticeable in various forums such as acid rain, ozone layer depletion; global warming and other climatic modification, release of carbon dioxide in several tones, methane and chlorofluorocarbons into the air may lead to imbalances of natural cycles result into warning of the earth, melted ice-caps, deserts and flooded cities. There are also tendencies for the atmosphere to run short of oxygen – the phytoplankton, a primary source of oxygen from the sea/ocean may be affected. The nitric oxide emissions may adversely deplete the protective ozone layer therefore expose man to the deadly ultraviolet rays as a result of the fact that the shield that cover the ozone layer is no more there.

It is not a mere saying that the adverse health hazards associated with exposure of human being to the unprotected work environment and other residential areas is highly noticed not only in Africa but it cut across the globe. In Nigeria for example Toxic Waste in Nigeria at Koko Village in Delta State, in 1988, the recent battery waste dumped at Lalupon – Ilegbon Area in Lagelu Local Government Area of Oyo State by Exide Battery Company that was reported killing the villagers and their animals, it occurred in February 2010.

However, the changes which the 1072 United Nation Conference on the Human Environment held at the Royal Opera House in Stockholm on June 5, 1972 served as stimulus to a lot of nations including the third world countries. Although the efforts of most of the third world did not emerge until towards the tail end of 1980s [12].

Nigeria is a prominent signatory to a number of these multilateral treaties on environmental protections. In another word, Nigeria was among the 114 heads of governments represented at the historic conference held in the United Nations 1972 in Stockholm on the “Problems of the Human Environment” which properly addressed the general needs for greater environmental awareness and concern. Subsequently, in Nairobi Kenya at a conference preceding the Stockholm Conference, Nigeria as a nation have been very prominent, this is the 10th anniversary of the Stockholm Conference which reiterated the participating nation’s commitment to the protection and enhancement of the quality of human environment.

Nigeria was party to the 1979 Rabat Conference of Ministers and Assembly of Heads of State of the O.A.U which corroborated the International Strategy for the Third Development Decade – the African Region. All these efforts are directed towards national awareness of the need to protect the Nigeria environment against environmental hazards. Though Nigeria no doubt is signatory to a large number of international and sub regional treaties, she has not promulgated the constitutionally mandated laws at the national level to give legal effect to most of these international treaties in the country. [17]

It is pertinent to reemphasize that the scenario of generating and regeneration of our environment is still very fundamental to the present Democratic government and as such have made several moves towards formulation of new mechanisms for environmental protection and sustainable development in Nigeria and is coming into place with a new approach to environmentally regulations and enforcements”. All Nigerians and friends of our country are enjoined to join us in this quest to keep our environment wholesome, safe and healthy” (Arch. (Mrs.) Halima Tayo Alao, Hon Minister of Environment, Housing and Urban Development, October 2007 12-14).

In a forum organized by the National Environmental Standards and Regulations Enforcement Agency (NESREA) between 22 – 23 October, 2007 in Abuja after its establishment on July 30, 2007 as a body corporate with perpetual succession and a common seal. It may sue and be sued in its corporate name. It is responsible for the enforcement of environmental standards, regulations, rules, laws, policies, guidelines and policies, such as the National Policy on the Environment, 1999 the Vice President of Nigeria Dr. Goodluck Ebele Jonathan represented the President Alhaji Umar Musa Yar’Adua GCFR stated that: the forum is very timely ‘at a time when world attention is focused on the challenges of environmental protection, climate change and sustainable development”. He also reiterated that at the global level, the United Nations and other multilateral organizations have, through notable global foras, provided the milestones and bench marks for new directions in formulating policies on the presentation of the integrity of the ecosystem and human well-being. They have also encouraged national governments to create institutions for the protection of the environment and human health.”

It is important to further reiterate that the merging of FEPA and other agencies to the Ministry of Environment has however created a vacuum in the effective enforcement of environmental laws, standards and regulations in the country. In addressing this, the Federal Government, created, by law, a new institutional mechanism, the National Environmental Standard and Regulations Enforcement Agency (NESREA). NESREA is however charged with the responsibility of enforcing all the environmental laws, guidelines, policies, standards, and regulations in Nigeria. It also has responsibilities for enforcing compliance with the provisions of international agreements, protocols, conventions and treaties on the environments to which Nigeria is a signatory”.

The government on its part further reiterated it support to provide all the requisite institutional and structural support for NESREA to effectively and efficiently meet her mandate. It is our hope that the management and staff of NESREA will be single-minded about their obligation to ensure that our society becomes innately environmentally conscious. Our desire is for an environment where all the necessary sustainable development principles are applied and enforced”.

Therefore, it is the responsibility of all and sundry to ensure a healthier, cleaner and safer environment for all guided by an abiding dedication to working committedly to secure our environment. (President Umar Musa Yar’ Adua: 2007 NESREA)

In this wise, Africa people and their government are very much conscious of the implications of abusage of their environment either by multinational corporations or themselves and have being taken serious measures to combat environmental menace ravaging the continent. The third world nations are aware of the hazardous implication to their environment, no wonder most of them are now adopting deliberate conceptional approach in formulating policies” which will lead to the procedures and other concrete actions required for lunching ‘third world’ into an era of social justice, self–reliance and sustainable development (in the 21st Century)”[19]

**CHAPTER THREE**

**Research Methodology**

**3.1 Introduction**

The essence of this chapter is to define the method adopted in the study, describing the procedure followed in realizing objectives of this research. This involves adequate description of the research area stressing on the inclusiveness of the chosen area of this study. There are many method of data collection, but the method to be adopted in this chapter proceeded to address in detail the population sample frame, sample size, sample techniques, choice of data collection, instrument, questionnaire design and the technique for data presentation and analysis for the study.

**3.2 Sources of Data Collection**

The sources of data on carrying out this research work are limited to primary and secondary sources.

**3.2.1 Primary Data Source**

The collection of data for this study was through questionnaire, personal observations and complimented with oral interviews from facilities manager and occupants in the study area.

**3.2.2 Secondary Data Source**

The secondary source was obtained from published and unpublished materials; textbooks, journals articles, magazines, gazettes and newspapers, related past dissertation. Information and relevant materials were gathered from the internet.

**3.3 Characteristics of Study Population**

The respondents are the residents of Amuwo Odofin and its environments since they are the ones suffering from the environmental pollution in the area, their opinions would be relevant and reliable.

**3.4 Sampling Techniques**

This helps to identify the respondents that would be sampled for the purpose of this research study. Convenience sampling technique would be adopted for the purpose of this study as the researcher would use his discretion in administering questionnaires to residents of the study area. The sampling was made to ensure an even distribution of the survey and a more efficient spread of sample. Samples from this procedure are generally better representatives of the population than those from a simple random sample of the entire population.

**3.5 Determination of Sampling Size**

The sample size will be determined using random sampling technique. The use of this method is in line with the studies of Ojo (2005) and Yacim, Lawal, Abdullahi, Ayodele and Umar (2012). A total of one hundred (100) questionnaires would be administered to residents of the study area; this number of questionnaires to be administered was arrived by the researcher as it would be enough to get the required information needed for this research study.

**3.6 Sampling Procedure**

The procedure used for sampling this research was based on simple random sampling method. It allows for equal chances of being selected among the population members, each member of the population is given equal right of being involved in the sampling procedure since each is unique and can be selected randomly.

**3.7 Questionnaire Administration**

The questionnaire administration explains the design, the distribution and the response collected from various respondents. The questionnaire would be administered by hand to the respondents and retrieved by same means.

**3.8 Questionnaire Design**

The questionnaire design employed was suitable for the collection of primary data for this research work. It will be close ended. This is to enable the researcher to obtain maximum relevant and useful information from the respondents.

**3.9 Questionnaire Distribution and Collection**

A total number of 100 questionnaire will be distributed to all the respondent who are expected to convey their opinion by providing clear answer to the question that were asked from them, and the questionnaire administration will be collected by hand within few weeks of the questionnaire distribution. Frantic effort will be made for the collection within the few weeks of time in order to avoid delay and loss of questionnaire by respondents.

**3.10 Technique for Data Analysis**

In analyzing the data collected for this study, descriptive statistical tools of analysis will be employed such as tables, frequency distribution, figures and percentage. However, the analysis is more of a descriptive as tables showing frequencies, percentages, mean item score and ranking would be used to analyse the opinions of the respondents.

**3.11 Historical Background of the Study Area**

Lagos state was created on May 27, 1967 by virtue of state (creation and transitional professions) decree No. 14 of 1967, which restricted Nigeria federation into 12 states. Prior to this, Lagos Municipality had been administrated by the Federal Government through the Federal Ministry of Lagos Affairs as the regional authority, while the Lagos city Council (LCC) governed the city Lagos. Equally, the metropolitan areas (Colony Province) of Ikeja, Mushin, Ikorodu. Epe, and badagry were administrated by the Western Region. The state took off as an administrative entity on April 11, 1968 with Lagos Island serving the dual role of being the state and federal capital. However, with the creation of federal capital territory of Abuja in 1976, Lagos Island ceased to be the capital of the state which was moved to Ikeja. Equally, with the formal relocation of the seat of the Federal Government to Abuja on December 1991, Lagos Island ceased to be Nigeria’s political capital. Nevertheless, Lagos remains the Centre of commerce for the country. Since its creation in 1967, the state has been administrated either by a governor and a Housed of Assembly in civilian or quasi-civilian (under Ibrahim Badamasi Babangida’s administration) federal administrations, or by sole Administrations, or military dispensation. Since December 2007, Yoruba has been the second official language of debate and discussion for the House of Assembly after English. In 2003, many of the existing 20 LGAs were split for administrative purposes into Local Council Development Area. Theses lower tier administrative units now number 56; Agbado/Oke-odo, Agboyi/Ketu, Agege, Ajeromi, Alimosho, Apapa, Apapa-Iganmu. Ayobo/Ipaja, Badagry, Bariga, Coker Aguda, Egbe Idimu, Ejibgo, Epe, Eredo, Eti-Osa East, Eti-Osa West, Iba, Isolo, Imota, Ikoyi, Ibeju, Ifako-Ijaye, Ifelodun, Igando/Ikotun, Igbogbo/Bayeku, Ijede, Ikeja, Ikorodu North, Ikorodu West, Ikosi-Ejinrin, Ikorodu, Iru/Victoria Island, Itire Ikate, Kosofe, Lagos Island West, Lagos Island East, Lagos Mainland, lekki, Mosan/Okunola, Mushin, Odi-Olowo/Ojuwoye, Ojo, Ojodu, Ojokoro, Olorunda, Onigbonbgo, Oriade, Orile Agege, Oshodi, Oto-Awori, Shomolu, Surulele and Yaba.



**Map of Lagos State**

**Source:** Google Map

**HISTORICAL BACKGROUND OF AMUWO ODOFIN AREA OF LAGOS STATE**

Amuwo Odofin is one of the 57 Local Government Councils that make up Lagos State, which was created out of the old Amuwo Odofin Local Government on 27th October, 2003. It covers he land mass of 100q.km, divided into two distinct geographical spheres of Upland and Riverine areas. For political expediency, the Local Government is divided into three geo-political zones, that is, the Riverine, the Middle Belt and the Upper Belt. The Riverine area comprises Towns and Villages such as Tomaro, Ilado, Okun Glass, Sankey, Igbo Alejo, Igbologun etc.

The Middle Belt begins with the Local Government boundary adjacent to Apapa Local Government through the Tincan Coconut area, Beach-Land Estate.

The Upper Belt comprises of Amuwo Odofin Estate, Raji Rasaki Estate, Amuwo Odofin New Town, Festac Town, Abule Ado, Trade-fair Complex among others. The Local Government, with a population of over 1,500,000 according to the 2006 Census shares its boundaries with Ajeromi and Ifelodun Local Government I the East, Oriade Local Government in the West, the Badagry Creek to the South and Isolo/Igando Local Government to the North.

**CHAPTER FOUR**

**DATA PRESENTATION AND ANALYSIS**

**4.1 Introduction**

The previous chapter of this research as dwelt on other research work to gather information regarding Environmental pollution in Lagos State, Problems and Solutions, Case study of Amuwo Odofin.

However, this chapter deals with the analysis of data collected from the field survey in the work in order to arrive at a reasonable conclusion. It is of high importance to analyse the data collated from various offices to give a clearer and concise information for better understanding of the outcome of this study.

**4.2 Analysis of the Questionnaire Administered**

 A total of 100 copies of questionnaire were administered across Amuwo Odofin area of Lagos state.

Table 4.1

4.2.1 Administration of Questionnaire

|  |
| --- |
| S/N Nos. of Questionnaire Respondent Percentage (%)  |
|  1 Retrieved 86 86.0 2 Not Retrieved 14 14.0   Total 100 100 |
|  |

Source: Field Survey 2021

The table above shows that 86 copies of questionnaire was retrieved which represents 86% of the total questionnaire distributed while 14 copies of questionnaire representing 14% was not retrieved.

**4.3 Data Analysis According to Questionnaire**

Response from the questionnaire retrieved were analysed and represented sequentially as follows.

Table 4.2

4.3.1 Gender Distribution of Respondent

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|

|  |
| --- |
| S/N Gender Respondent Percentage %  |
|  1 Female 53 61.6 2 Male 33 38.4   Total 86 100 |

 |  |  |

Source: Field Survey 2021

The table above shows that 61.6% of the respondents are female while 38.4% are male; this suggests that more than half of the respondents are female.

Table 4.3

4.3.2 Marital Status of Respondents

|  |
| --- |
| S/N Status Respondent Percentage %  |
|  1 Single 27 31.4 2 Married 59 68.6   Total 86 100 |

Source: Field Survey 2021

The table shows that 31.4% of the respondents are single while 68.6% are married, this means that there are more married respondents than singles living in the area.

Table 4.4

4.3.3 Educational Attainment of Respondents

|  |
| --- |
| S/N Qualification Respondent Percentage %  |
|  1 WAEC 22 25.6 2 NCE/OND 22 25.6 3 HND/BSC 29 33.7 4 MBA/MSC 13 15.1  Total 86 100 |

Source: Field Survey 2021

This table shows that HND/BSc has the highest rank (33.7%) followed by NCE/OND (25.6%), and WAEC (25.6%) with MBA/MSc (15.1%) ranked the lowest. This means that all of the respondents have at least a WAEC certificate and have the required knowledge to understand the questions asked in the administered questionnaire.

Table 4.5

4.3.4 Age of Respondents

|  |
| --- |
| S/N Age Group Respondent Percentage %  |
|  1 21- 30 18 20.9 2 31- 40 37 43.0 3 41- 50 23 26.7 4 51- 60 8 9.3  Total 86 100 |

Source: Field Survey 2021

This table shows that the age bracket of 31- 40 years has the highest rank (43.0%) followed by 41-50 years (26.7%) and 21- 30 years (20.9%), with 51- 60 years (9.3%) ranked the lowest; this shows that the majority of the residents are in there middle age and that there are matured enough to understand the questionnaire.

Table 4.6

4.3.5 Years of living in the area

|  |
| --- |
| S/N Working Years Respondent Percentage %  |
|  1 1- 5 10 11.6 2 6- 10 30 34.9 3 11- 15 40 46.5 4 16- 20 6 7.0  Total 86 100 |

Source: Field Survey 2021

This table shows that the largest number of respondents living in the area from 11-15 years (46.5%) are ranked highest followed by 6-10 years (34.9%) and 1-5 years (11.6%) with 16- 20 years (7.0%) ranked the lowest. This means that most of the respondent has lived in the area for at least 5 years or more to understand the environmental pollution of the area.

Table 4.7

4.3.6 Issues of Environmental Pollution

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **Pollution** |  **Yes** |  **No** |  **Total** | **Mean** |  **Ranking** |
|  | WATER  |  46(53.5) |  40(46.5) | **86****(100%)** | **1.47** |  **4th** |
|  | NOISE |  53(61.6) |  33(38.4) | **86** **(100%)** | **1.38** |  **3rd** |
|  | AIR |  56(65.1) |  30(34.9) | **86****(100%)** | **1.35** |  **1st** |
|  | LAND |  56(65.1) |  30(34.9) | **86****(100%)** | **1.35** |  **1st** |
|  | SOIL |  54(62.8) |  32(37.2) | **86****(100%)** | **1.37** |  **2nd** |

Source: Field Survey 2021

This table shows the issues of pollution in the area, Air and Land pollution both ranking 1st (Yes = 65.1) (No = 34.9) respectively, followed by Soil pollution ranking 2nd (Yes = 62.8, No = 37.2), Noise pollution ranked 3rd (Yes = 61.6, No = 38.4) and Water pollution ranking 4th which is the lowest (Yes = 53.5, No = 46.5).

Table 4.8

4.3.7 Causes Environmental Pollution

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  **S/N** | CAUSES OF ENVIRONMENTAL POLLUTION  |  **Yes** |  **No** |  **Total** | **Mean** |  **Ranking** |
|  | Increase in Population and Traffic |  59(68.6) |  27(31.4) | **86****(100%)** | **1.31** | **2nd** |
|  | Lack of Drainage Facilities |  52(60.5) |  34(39.5) | **86** **(100%)** | **1.40** | **6th** |
|  | Lack of Waste Disposal Facilities |  51(59.3) |  35(40.7) | **86****(100%)** | **1.41** |  **7th** |
|  | Harmful practices of Irrigation methods |  50(58.1) |  36(41.9) | **86****(100%)** | **1.42** | **8th** |
|  | Unhealthy method of Soil Management |  37(43.0) |  49(57.0) | **86****(100%)** | **1.57** |  **10th** |
|  | Development of Industries |  55(64.0) | 36(36.0) | **86****(100%)** | **1.36** | **5th** |  |
|  | Development of Automobile Engineering |  49(57.0) |  37(43.0) | **86****(100%)** | **1.43** | **9th** |  |
|  | Development of Agriculture |  58(67.4) |  28(32.6) | **86****(100%)** | **1.33** | **3rd** |  |
|  | Thermal and Nuclear generation |  56(65.1) |  30(34.9) | **86** **(100%)** | **1.35** | **4th** |  |
|  | Burning of Refuse |  66(76.7) |  20(23.3) | **86****(100%)** | **1.23** | **1st** |  |

Source: Field Survey 2021

This table shows the causes of pollution in the area, Burning of refuse ranking 1st (Yes = 76.7, No = 23.3), followed by Increase in Population and Traffic ranking 2nd (Yes = 68.6, No = 31.4), Development of Agriculture ranked 3rd (Yes = 67.4, No = 32.6) while Thermal and Nuclear generation (Yes = 65.1, No = 34.9), Development of Industries (Yes = 64.0, No = 36.0), Lack of Drainage Facilities (Yes = 60.5, No = 39.5), Lack of Waste Disposal Facilities (Yes = 59.3, No = 40.7), Harmful practices of Irrigation methods (Yes = 58.1, No = 41.9), Development of Automobile Engineering (Yes = 53.0, No = 47.0) all ranking 4th, 5th, 6th, 7th, 8th and 9th respectively, while Unhealthy method of Soil Management ranking 10th which is the lowest (Yes = 43.0, No = 57.0).

Table 4.9

4.3.8 IMPACT OF ENVIRONMENTAL POLLUTION

|  |  |  |
| --- | --- | --- |
| **t**  |  |  |
|  **S/N** | **Impact** |  **1** |  **2** |  **3** | **Total** | **Mean** | **Ranking** |
|  | Cancer to Human health |  46(53.5)  | 18(20.9) |  22(25.6) | **86****(100%)** | **1.72** | **3rd** |
| 1.
 | Troubles with breathing |  53(61.6) |  14(16.3) |  19(22.1) | **86****(100%)** | **1.61** | **2nd** |
| 1.
 | Hearing problems |  54(62.8) |  32(29.6) |  0(00.0) | **86****(100%)** | **1.37** | **1st** |
| 1.
 | Water toxic |  37(29.6) |  25(63.0) |  24(7.4) | **86****(100%)** | **1.85** | **5th** |
| 1.
 | Depletion of the Ozone layer |  28(32.6) |  34(39.5) |  24(27.9) | **86****(100%)** | **1.95** | **7th** |
| 1.
 | Acid Rain |  32(37.2) |  28(32.6)  |  26(30.2) | **86****(100%)** | **1.93** | **6th** |
| 1.
 | Soil Malnutrition |  32(37.2) |  38(44.2) |  16(18.6) |  **86****(100%)** |  **1.81** | **4th** |

Source: Field Survey 2021

This table shows the impacts of pollution in the area, Hearing problem which is caused by noise pollution, Troubles with breathing, Cancer to human health, Soil Malnutrition, Water toxic, Acid rain ranks 1st , 2nd ,3rd, 4th, 5th and 6th respectively and Depletion of the Ozone layer ranked 7th which is the lowest.

Table 4.10

4.3.9 Solutions to Environmental Pollution

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  **S/N** | **Solutions**  |  **1** |  **2** | **Total**  | **Mean** | **Ranking** |
|  | Awareness |  67(77.9) |  19(22.1) |  **86****(100%)** | **1.22** | **3rd** |
|  | Provision of Drainage Facilities |  63(73.3) |  23(27.6) |  **86** **(100%)** | **1.26** | **4th** |
|  | Provision of Waste Disposal Facilities |  60(69.8) | 26(30.2) |  **86****(100%)** | **1.30** | **5th** |
|  | Introduction of Eco-Friendly Raw Materials and Efficient Technologies |  54(62.8) |  32(37.2) |  **86****(100%)** | **1.37** | **6th** |
|  | Waste Recycling |  68(79.1) |  18(20.9) |  **86****(100%)** |  **1.20** | **2nd** |
|  | Legislative laws that will protect the Environment |  73(84.9) |  13( 15.1) |  **86****(100%)** | **1.15** | **1st** |

Sources: Field Survey 2021

The table above shows the Solutions to Environmental pollution in the study area, the most selected feature of the study area according to response of the respondents are Legislative laws that will protect the Environment, Waste Recycling and Awareness, as they ranked 1st, 2nd and 3rd respectively while the least selected feature are Provision of Drainage Facilities, Provision of Waste Disposal Facilities and Introduction of Eco-Friendly Raw Materials and Efficient Technologies ranking 5th, 6th and 7th respectively.

**4.3 RESEARCH HYPOTHESIS**

HO: Environmental pollution (EP) is not a major challenge (MC) in Nigeria

HA: Environmental pollution (EP) is a major challenge (MC) in Nigeria

**Level of significance**: 0.01

**Decision Rule:**

In taking decision for “r”, the following riles shall be observed;

1. If the value of “r” tabulated is greater than “r” calculated, accept the alternative hypothesis (H1) and reject the null hypothesis (H0).
2. If the “r” calculated is greater than the “r” tabulated, accept the null hypothesis (H0) while the alternative hypothesis is rejected

**Pearson Correlation Table showing the relationship between Environmental pollution (EP) is not a major challenge (MC) in Nigeria**

|  |  |  |
| --- | --- | --- |
|  | EP | MC |
| EP | Pearson Correlation | 1 | .821\*\* |
|  | Sig. (2-tailed) |  | .000 |
|  | N | 86 | 86 |
| MC | Pearson Correlation | .821\*\* | 1 |
|  | Sig. (2-tailed) | .000 |  |
|  | N  | 86 | 86 |

Source: Survey data, 2021

\*\*. Correlation is significant at the 0.01 level (2-tailed)

The Pearson Correlation result in Table 1 contains the degree of association between EP and MC. From the result, the Pearson correlation coefficient, r, value of 0.821 was positive and statistically significant at (p< 0.000). This indicates that Environmental pollution (EP) is a major challenge (MC) in Nigeria.

**CHAPTER FIVE**

 **SUMMARY, CONCLUSION AND RECOMMENDATION**

**5.1 Introduction**

This chapter concludes the whole project work and it is in three (3) categories, that is, Summary of the Findings, Conclusion and Recommendations.

This chapter is basically concerned with the summary of findings based on the data obtained during the course of the research work. In view of the findings made, number of recommendations were made and appropriate conclusion were drawn from the research findings and also suggestions were made for further studies in other areas of this study so as to effectively contribute to the body of knowledge.

**5.2 Findings**

This study assessed Environmental pollution in Lagos State, Problems and Solutions, Case study of Amuwo Odofin. It specifically sought to know the Problems of environmental pollution in the area and as well provides Solutions to tackle the identified problems in the area. 100 respondents were selected and out of the 100 respondents selected to participate in the study, 86 respondents representing 86.0% responses were valid, 56.4% are female while 38.4% are males, and about 40.6% of the respondents have been living in the area for about 11- 15 years.

**5.2 Conclusion**

The study has shown that according to the data obtained from the residents of Amuwo Odofin area of Lagos state, it was determined that Burning of Refuse and Increase in Population and traffic are the most important factors causing pollution in the area, while Legislative laws that will protect the environment and Waste recycling are the two preferred solutions to reduce or stop the pollution in the area.

**5.3 Recommendations**

Based on the research carried out on this study, the following recommendations are provided;

* The Local government should make laws that will protect the environment, also this laws should have punishments and penalties to be made by violators.
* The practice of Waste recycling should be encouraged in the area.
* They should be provisions of Drainage systems to reduce erosion.

**REFERENCES**

1. Abumere, S.L. (2002). Urbanisation: In Africa Atlases. Paris: Nigeria Les Editions J.A.
2. Acho, C. (1998). “Human Interference and Environmental Instability: Addressing the Environmental Consequences of Rapid Urban Growth in Bamenda, Cameroon.” Environment and Urbanization, 10(2): 161-174.
3. Agbola, T. and Agbola, E.O. (1997). “The Development of urban and Regional Planning Legislation and their impact on the morphology of Nigerian Cities.” Nigerian Journal of Economics and Social Studies, 39(1): 123-143.
4. Agukoronye, O. C. (2004). “Urban Poverty and Environmental Degradation in Nigerian Cities.” In H.C.Mba et al (eds.) Management of Environmental Problems and Hazards in Nigeria, Hants: Ashgate Publishing Ltd, 161-170.
5. Areola, O. (2001). in T. Agbola and E.O. Agbola (1997), “The Development of urban and Regional Planning Legislation and their impact on the morphology of Nigerian Cities” Nigerian Journal of Economics and Social Studies, 39(1): 123-143.
6. Aribigbola, A. (2008). “Housing Policy Formulation in Developing Countries: Evidences of Programme Implementation from Akure, Ondo State Nigeria.” Journal of Human Ecology, 23(2): 125-136.
7. Bain, J.S. (1973). “Environmental Decay: Causes and Remedies.” England: Little Brown and Co. Inc.
8. Abumere, S.L. (2022). Urbanisation: In Africa Atlases. Paris: Nigeria Les Editions J.A.
9. Acho, C. (2021). “Human Interference and Environmental Instability: Addressing the Environmental Consequences of Rapid Urban Growth in Bamenda, Cameroon.” Environment and Urbanization, 10(2): 161-174.
10. Agbola, T. and Agbola, E.O. (2021). “The Development of urban and Regional Planning Legislation and their impact on the morphology of Nigerian Cities.” Nigerian Journal of Economics and Social Studies, 39(1): 123-143.
11. Agukoronye, O. C. (2022). “Urban Poverty and Environmental Degradation in Nigerian Cities.” In H.C.Mba et al (eds.) Management of Environmental Problems and Hazards in Nigeria, Hants: Ashgate Publishing Ltd, 161-170.
12. Areola, O. (2022). in T. Agbola and E.O. Agbola (1997), “The Development of urban and Regional Planning Legislation and their impact on the morphology of Nigerian Cities” Nigerian Journal of Economics and Social Studies, 39(1): 123-143.
13. Aribigbola, A. (2020). “Housing Policy Formulation in Developing Countries: Evidences of Programme Implementation from Akure, Ondo State Nigeria.” Journal of Human Ecology, 23(2): 125-136.
14. Bain, J.S. (2022). “Environmental Decay: Causes and Remedies.” England: Little Brown and Co. Inc.
15. Bulama, M. (2005). “The Nigerian Built Environment Challenges.” In A.S.Alabi and Sam Epelle (eds.) Proceedings of the first National Built Environment Summit on Built Environment Disasters For National Action Plan organised by the Nigerian Institute of International Affairs, 8th-10th February. Lagos: Nigerian Institute of Architects, 185-196.
16. Eneh, O.C. and Agbazue, V.C. (2011). “Protection of Nigeria’s Environment: A Critical Policy Review,” Journal of Environmental Science and Technology, 4 (5): 490-497, DOI: 10.3923/jest, 2011.
17. Federal Environment Protection Agency (FEPA) (1989). National Policy on Environment. Lagos: FEPA.
18. Federal Government of Nigeria, FGN, (1988). National Policy on Population for Development. Abuja: FGN.
19. Federal Republic of Nigeria, FRN, (1998). “Urbanization” 1991 National Population Census: Analytical Report at National Level. Abuja: NPC, 32-48.
20. Federal Republic of Nigeria, FRN, (2007). Official Gazette on the breakdown of the National and State Provisional Totals 2006 census, S.I N0 23 of 2007, N024, Vol.94 Lagos 15th May.
21. Efobi, K. O. (1994). “Studies in Urban Planning”, Enugu: Fidelity Publishers and Printers Co. Ltd.
22. Goldstein, G. (1990). “Urbization, Health and Wellbeing: A Global Perspective” The Statistician – Special Issue on Health of Inner Cities and Urban Areas, 39(2): 121-133. Available at: http://www.jstor.org . Accessed, June 18, 2007.
23. Hales, D.F. (2000). “Practical Steps Toward Healthier Cities and a Cleaner Global Environment: Global Issue.” Journal of the U.S. Department of State, 5(1): 11-16.
24. Johnson, V. (1992). “What is Environmental Education” in Michael Atchia (ed) “Environmental Education in the African School Curriculum”, Ibadan; African Curriculum Organization.
25. Kadir, K.O. (2006). “Planning Sustainable Cities in Nigeria” Research Journal of Social Science, 1(1): 40-50.
26. Kjellstrom, T. & Mercado, S. (2008). “Towards Action on Social Determinants For Health Equity in Urban Settings” Environment and Urbanization, 20(2): 551-574.
27. Marcuse, P. (1998). “Sustainability is not Enough” Environment and Urbanization, 10:2; 103-111.
28. Mabogunje A.L. (1988). Environmental Issues and Management in Nigeria Development. Ibadan: Evans Brothers Limited.
29. Mba, I. A. and Agaze, U. (2004). “Erosion Phenomenon and Development Dynamics in South- Eastern Nigeria.” In Mba et al, “Management of Environmental Problems and Hazards in Nigeria”, Hants: Ashgate Publishing Ltd.
30. Muoghalu, L.N. (2004). “Environmental Problems and their Effects on Human Life: From Awareness to Action.” In H.C. Mba et al (eds.), “Management of Environmental Problems and Hazards in Nigeria”, Hants: Ashgate Publishing Ltd.
31. Nduka, O. (2004). “Air Pollution: A threat to Human Survival”. In H.C. Mba et al (eds.) Management of Environmental Problems and Hazards in Nigeria. Hants: Ashgate Publishing Ltd
32. Nwafor, J.C. (2006). Environmental Impact Assessment for Sustainable Development: The Nigerian Perspective. Enugu: EDPCA Publication.
33. Obajimi, M.O. (1998). Air pollution - A threat to healthy living in Nigerian rural towns. Proceeding of the Annual Conference of Environmental Protection Society of Nigeria, Ilorin.
34. Omofonmwan, S.I. (2000). Problems of food crops production in Nigeria. Proceedings of the National Conference on Population Growth and the Environment. Iruekpen-Ekpoma: Rasjel Publishers.
35. Onwuioduokit E.A. (1998). An alternative approach to efficient pollution control in Nigeria. Proceedings of the Annual Conference of Environmental Protection Society of Nigeria, Ilorin.
36. Porteous, J. D. (1977). “Environment and Behaviour, Planning and Every Life”. Addison: Wesley Publishing Company.
37. Rio, De Janeiro(1992). The challenges of Sustainable Development in Nigeria. An NGO Report for United Nations Conference on Environment and Development in Brazil 1-1 June 1992.
38. Schmidt, C.W. (2003). Messenger from the White House: Council on Environmental Quality Environmental Health Perspectives 3:4 225- 226.
39. Singh, A. P. (2003). Concept of Environment in Ancient Art and Architecture. Delhi: Prakasham.
40. Taylor, R.W. (2000). “Urban Development Policies in Nigeria: Planning, Housing, and Land Policy”. New Jersey: Centre For Economic Research in Africa, Montclair State University.
41. UN-HABITAT (2005). African Cities Driving the NEPAD Initiative An Introduction to the NEPAD Cities Programme www.unhabitat.org/downloads/docs/2558\_81291\_nepad.pdf.

**QUESTIONNAIRE**

**PLEASE TICK [√] YOUR MOST PREFERRED CHOICE AND AVOID TICKING TWICE ON A QUESTION**

**SECTION A**

**PERSONAL INFORMATION**

**Gender**

Male [ ]

Female [ ]

**Age**

18-25 [ ]

20-30 [ ]

31-40 [ ]

41 and above [ ]

**Educational level**

WAEC [ ]

BSC/HND [ ]

MSC/PGDE [ ]

PHD [ ]

Others……………………………………………….. (please indicate)

**Marital Status**

Single [ ]

Married [ ]

Separated [ ]

Widowed [ ]

**Section B**

**Issues of Environmental Pollution**

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N** | **Pollution** |  **Yes** |  **No** |
|  | WATER  |  |  |
|  | NOISE |  |  |
|  | AIR |  |  |
|  | LAND |  |  |
|  | SOIL |  |  |

**Causes Environmental Pollution**

|  |  |  |  |
| --- | --- | --- | --- |
|  **S/N** | CAUSES OF ENVIRONMENTAL POLLUTION  |  **Yes** |  **No** |
|  | Increase in Population and Traffic |  |  |
|  | Lack of Drainage Facilities |  |  |
|  | Lack of Waste Disposal Facilities |  |  |
|  | Harmful practices of Irrigation methods |  |  |
|  | Unhealthy method of Soil Management |  |  |
|  | Development of Industries |  |  |
|  | Development of Automobile Engineering |  |  |
|  | Development of Agriculture |  |  |
|  | Thermal and Nuclear generation |  |  |
|  | Burning of Refuse |  |  |

**IMPACT OF ENVIRONMENTAL POLLUTION**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  **S/N** | **Impact** |  **Yes** |  **No** |  **Undecided** |
|  | Cancer to Human health |  |  |  |
| 1.
 | Troubles with breathing |  |  |  |
| 1.
 | Hearing problems |  |  |  |
| 1.
 | Water toxic |  |  |  |
| 1.
 | Depletion of the Ozone layer |  |  |  |
| 1.
 | Acid Rain |  |  |  |
| 1.
 | Soil Malnutrition |  |  |  |

**Solutions to Environmental Pollution**

|  |  |  |  |
| --- | --- | --- | --- |
|  **S/N** | **Solutions**  |  **Yes** |  **No** |
|  | Awareness |  |  |
|  | Provision of Drainage Facilities |  |  |
|  | Provision of Waste Disposal Facilities |  |  |
|  | Introduction of Eco-Friendly Raw Materials and Efficient Technologies |  |  |
|  | Waste Recycling |  |  |
|  | Legislative laws that will protect the Environment |  |  |