AN ASSESSMENT

OF

PUBLIC ATTITUDE TO ENVIRONMENTAL SANITATION.

A CASE STUDY OF GARKI DISTRICT OF THE FCT

BY

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PDG/GEO/ 2001/2002/25[illegible]2

SUBMITTED IN PARTIAL FULFILMENT FOR THE AWRAD OF

POST GRADUATE DIPLOMA IN ENVIRONMENTAL

MANAGEMENT

DEPARTMENT OF GEOGRAPHY.

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

NIGER STATE,

NIGERIA.

SEPTEMBER, 2003.

CERTIFICATION

This is to certify that this project work report was carried out and presented by OSODIN DOLAPO OLUFUNKE of the Department of Geography, in partial fulfillment of the requirements for the award of postgraduate diploma (PGD) in Environmental Management.

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DEDICATION

This project is dedicated to my sweetheart, Dr. Tim Osodin and my children, Osamudiamen and Eromomhenle.

ACKNOWLEDGEMENT

All glory and honour are returned back to Almighty God for his protection, Wisdom, Knowledge and Understanding to complete this study.

My gratitude to my lecturers, I say a big thank you for imparting your knowledge unto me.

The project would not have been written without the help of my supervisor, Dr. G.N. Usofor. He gave his time, knowledge, encouragement and above all his understanding. Thanks for your motivation during the course of the project.

Also, I wish to thank Dr. S.P.Akinyeye, Prof. J.M.Baba, Prof. Adefolalu, Dr. M.T.Usman, Dr. A.A. Akhiheme, Dr. S. Abubakar and Mr. Saidu Halilu for their support and encouragement.

My sincere gratitude goes to my sweetheart for his moral and financial support throughout my course of study.

My appreciation also goes to the following people: Osamudiamen, Funke and Williams, for their understanding, support and love.

Special thanks to my mother, sisters, brothers, nieces, nephews and friends.

Finally, I owe a debt of gratitude to all my friends and my fellow classmates especially Mr. Cyril, Mr. Basa, Mr. Joshua and Mr. Ellams for their encouragement and love. I appreciate you all.

ABSTRACT

The work investigates the undesired but existing shortfalls of the attitude of the public in sanitation matters, using Garki District of the FCT as a case study area. Examining several behaviour models and paradigms does this.

The impact and role of the Abuja Environmental Protection Board (AEPB) on the issue is also "x-rayed".

The findings of the research are appended upon the response of a given number of randomly selected respondents after which a number of recommendations were proffered.

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CHAPTER ONE

1.1 INTRODUCTION

Man's activities on the environment have tended to degrade and make the environment untidy and unfit for human habitation because of its poor sanitation nature. Sanitation can be said to be the state of cleanliness. It is a broad concept and connotes the process of keeping something clean. According to K.Patrick (1980), sanitation is the arrangement for protecting the health, especially the removal of the human, industrial and domestic wastes. Sanitation is also a process embarked upon to keep the total of man's environment hazard free.

Generally speaking, sanitation is geared towards the protection and promotion of public health, which means the improvement of the environment.

1.2 HISTORICAL PERSPECTIVE

The Federal Capital Development Authority was established by the federal Government promulgation of federal Capital Territory Act No. 6 of 1976. This was sequel to the federal Government acceptance of the Aguda panel that recommended the creation and relocation of the federal capital for the nation to the area covering 8000 kilometres and situated south of the present day Suleja named Abuja. The federal capital development authority was charged with the responsibility of carrying out speedy development of the federal capital territory, by building of houses, land use, transportation.

infrastructures etc. The authority also monitors project planning and implementation as well as coordinates speedy housing programmes resulting from urbanization to meet the need of the expected population.

These developments were taken to be adequately carried out in accordance with the approved master plan of the city. In order to effectively satisfy the need for controlled development and to coordinate the administration of the territory as well as to ensure the adequate provision of social amenities, it was considered essential to set up an effective actualization in the FCT that would permeate through the grassroots. To this end, eight development areas were set up. These are Bwari, Kuje, Kwali, Gwagwalada, Karshi, Abaji, Rubochi, Yaba and Garki being the municipal. The criteria adopted for the selection of these development areas were population distribution and availability of manpower that could enhance speedy development through adequate supply of labour for effective grassroots development. (The master plan for Abuja)

The federal capital development in its inception was made up of advisory panel and consultants with its headquarters at Suleja which later moved to Garki, Abuja. It oversees the smooth running of the development in the seven development areas so created.

The seven development areas were later converted to local government areas with each serving as its headquarters. Later they were merged to form area councils. Very recently two other new were created in addition to the

existing four area councils to constitute six area councils presently. They are: Kuje area council, Gwagwalada area council, Abaji area council, Kwali area council, Bwali area council and the municipal area council.

However, the Garki area is in the municipal area council, which is divided into residential sections called areas. They are Areas one to eleven.

Nevertheless, only areas one, two, and three, seven, eight, ten and eleven exist, making a total of seven areas excluding Garki village in the Garki District of the Municipal Area Council.

The historical evolution of FCT has been succinctly highlighted to enable us appreciate the magnitude of environmental and ecological effects of development in the FCT and in particular the Garki District.

1.3.4 THE ABUJA ENVIRONMENTAL PROTECTION BAORD (AEPB)

As we enter into the 21st century, the environmental problem comes into sharp focus as priority, which must be halted before disastrous health and irreversible environmental degradation occurs.

The Abuja Environmental Protection Board (AEPB) was established in July 1989 by the Abuja Environmental Protection Decree 10 of 1977 which took effect from 31st July 1997 to provide a suitable development in the FCT.

The objectives of the board are:-

(i) To secure a quality of environment adequate for the health and well being of residents of the FCT.

(ii) To conserve and use the environment and natural resources for the benefit of the FCT

(iii) To raise public awareness and promote understanding of essential linkage between environment and development.

(iv) To cooperate with Federal environmental protection board (FEPA) and adjoining environmental protection bodies to achieve effective prevention or abatement of transboundary environmental pollution.

1.3.1 FUNCTIONS OF ENVIRONMENTAL PROTECTION BOARD.

To realize the above objectives, the board is responsible for the following functions:-

(a) Removal and disposal of liquid waste in the FCT.

(b) Control of:-

(i) Bush burning, poaching and indiscriminate felling of trees.

(ii) Vestor pests, rodents and reptiles.

(iii) The quality of portable water, wastewater and effluent discharges.

(iv) septic tank and sewage maintenance.

(v) Public conveniences and cemeteries

(vi) Stray and wandering animals

(vii) Industrial waste, borrow pits, and quarry sites and in particular to direct construction companies/individuals to refill borrow pits

excavated and ensure that such places are replanted to avoid soil erosion.

1.4 GENERAL PHYSICAL CHARACTERISTICS OF THE AREA

Its physiography, geology, water resources, vegetation, soils and climate can characterize the sit selected. These elements are described as follows:

(a) Physiography:-

The area is typified by gently undulating terrain interlaced by riverine depressions. The height variation from crest of Hill to watercourse varies around 50m, more or less. This produces, in the immediate vicinity of someone on the ground, rather short views of a mile or less. These views are made even shorter by the typical park savannah vegetation of the sight. Clearing of vegetation for roads and other construction will in doubt broaden this usual environment.

A large visual scale introduced by the above mentioned inselbergs gutting from the gently undulating plain. These are intended to be used as design focal points to convey the sense of the larger scale of the city.

(b) Geology

The major rock units underlying the federal city site itself are described in the three categories below:-

(1) Sedimentary Rock including Aluminum located in streams beds throughout the territory, consisting of largely sand, with rare gravel beds and local deposits of clay.

(2) Metamorphic Rock including Biotate – muscovite schist, limited to four narrow out cropbands along ridge tops at the Eastern part of the site: porphyritic Gneiss, underlying the Usuma River Valley in the Northwest portion of the city and Granitic Gneiss.

(3) Igneous Rocks including Biotite granite, large intrusive masses commonly elliptical in shape forming dissected zones of the zuma-Bwari. Also Hills and out-crops of the Gwagwa plains, Biotite granite (fine to mediüm – grained), forms ridge-lines trending Northeast Southwest through the city site. Rhyolite forming small round intrusion surrounded by porphyriric gneiss in the Usuman valley in northwestern portion of the city.

- **Surface Water**

The network of stream valleys and depression covering the capital city site when looked at vertically is in a rough fan shape, draining the crescent of development area. Thus the site of the new capital can more or less neatly be divided into small contiguous watershed, all converging on one point.

The overall city plan has been developed to accommodate this run –off problems. The city has been organized in recognition of the watersheds associated with the major streams flowing into the Usuma river. Urban development has been located so as to cause minimum interference with the natural drainage patterns.

(d) **Vegetation**

Generally, the vegetation of the area is characterized by park savannah. Fringes of thickest and high trees typically skirt riverine depressions. There are occasional patches of forest or heavily wooded areas.

Forested areas in the built up will considered as expandable except as they may fit into planned park systems. Elsewhere they could be protected.

In addition to the coverage of park savannah vegetation the cover type most abundant through the Fct are smaller areas of riverine forest, rain forest, and savannah woodland may occur along stream and in steeper areas and those flat and undulating areas not recently used for agriculture. Where land has been farmed recently, a shrub savannah occurs.

Park savannah is typically a stratified community with a discontinuous canopy, shrub and grass layer. The tree statum is less dense than that of the savannah woodland, but more substantial that that of the shrub savannah. Structurally the shrub savannah may include thick, tall grass layer consisting of Andopogon and Hyarrhemia species and shrub layer in which Terminalia, Piliostigma, Amoria, Nauclea, and Bombax are most common. Canopy species

include those found in savannah woodland, dominated by Albizia, Butyros – permum, Daniella and Parkia.

(e) **Soils**

The soils underlying the capital site generally deep and well drained. Although specific data are not available, presumably these soils are also more fertile than many other soils in the FCT. While some may regard developing the new city on the best soil in the area as wasteful of good agricultural land, there is the equal advantage of making it possible to undertake successful backyard gardening to increase food supplies in the city. Successful landscaping of public places and street tree planting also presumable assumed.

Their suitability for developed land uses varies with depth occurrence of iron pan, texture run-off and drainage. Several constraints for foundations, streets and underground utilities occur where soils are shallow, stony, locally high in swelling clay or iron pan, or poorly drained. Where soils are moderately to highly erodible or have a high run-off potential, special design or construction techniques may be required to mitigate or eliminate potential flooding and sedimentation problem. The soils on the capital city site are generally the deepest and least stony of the soils developed on the basement complex.

(f) **Climate**

A comfortable living environment will depend on maximizing the aspects of the environment, which reduce heat and the effect of humidity and

protect from rain and dust. While derailed climatic information is not yet available, extrapolations from existing airport meteorological stations hve been used to develop the basic description of climatic parameters presented in the site selection report. The description of the climate factors of the FCT, and their planning implications are summarized below.

Temperature

The Fct records its highest temperature and greatest diurnal ranges during the dry season months. When the maximum temperature ranges between 30.40^{0}_{c} and 35.1^{0}_{c}. During the rainy season on the other hand, the maximum temperature ranges between 25.8^{0}c and 30.2^{0}c. Also, the diurnal range is much reduced. Two main factors straggly influence temperature patterns in the Fct. These are cloud, cover and elevation. The cloud cover is much less during the dry season, hence the high temperatures at this time of the year. As a result of differences in elevation between the north and the south, the latter has higher temperatures throughout the year than the former.

Rainfall

The onset of the rains is from about the middle of March. The end of the rainy season, on the other hand, is around the middle of October in the North, whereas it is about early November in the South. Consequently, the duration of the rainy season varies from about 240 days in the south to about 190 days in the north. The mean annual rainfall total ranges from 1145mm to 1631.7mm.

This gives rise to frequent rainfalls and a noticeable increase in the mean annual total from the south to the north.

Rainfall patterns exemplify the transitional character of the FCT., for example. It is located between the zone of double rainfall maxima of the southern part of the country and that of single rainfall maximum of the four northern parts. Thus a large portion of FCT. experiences a double maxima but this feature of the rainfall is, however, not noticeable every year.

Another feature of the rainfall is its mean monthly distribution. There is a very high concentration of rainfall in the months of July, August and September, during which about 57% of the annual total is received.

Relief rainfall is another important feature of the FCT. This type of rainfall is associated with the presence of iselbergs that exert a very strong influence on the local river. These inselbergs trigger-off convectional activity and this gives rise to intense relief rainfall in their immediate surroundings.

Two major air masses dominate the climate of FCT. These are the tropical maritime air mass and the tropical continental air mass. The tropical maritime is formed over Atlantic Ocean to the south of the country and is therefore warm and moist. It moves inland generally in a southwest to northeast direction. The tropical continental air mass is developed over the Sahara desert and therefore is warm and dry and blows in the opposite direction, northeast to southwest.

The duration and iftensity of each type of wind over a particular place vary due to the interfaces of these two masses. The days are very hot but the cloudlessness means that at night there is considerable of heat by radiation from the earth. The temperature drops sharply often to dew point, giving rise to early morning temperature inversion to early morning mist or fog. Setting dust particles, which have effect of reducing visibility to a few hundred metres, further complicates this. With daylight, renewed isolation clears the mist or fog although the dust particles continue to float in the air to settle as a thin film over furniture and other objects: (the master plan for Abuja)

1.5 BACKGROUND AND SPECIFIC PROBLEM STATEMENT

The master plan for the development of the federal capital city Abuja was approved by government and construction of roads, building etc started in 1980. This development paradoxically has been a major source of environmental deterioration. With increase in number of people, the problem of waste management in essence, environmental sanitation problem looms large.

In spite of the public enlightenment through television and radio-sponsored programmes and the use of mobile courts to prosecute defaulting households: there is yet an undesirable trend in the attitudes of the public towards environmental responsibility and environmental stewardship.

The research problems can be posed by the following questions:

1. What category of Garki dwellers tends to be disinclined to participating in environmental sanitation?
2. Are these attitudes towards environmental sanitation exercise as a result of disparities in income levels and educational status?
3. Lastly, is the Abuja Environmental Protection Board (AEPB) effectively executing its functions?

1.6 SIGNIFICANCE OF STUDY

The study will be of great use to the agencies in charge of environmental sanitation, that is, Federal Environmental Protection Agency (FEPA); Abuja Environmental Protection Board (AEPB); States Environmental Protection Agencies (SEPA). Especially in policy making such that they will abundantly recognize salient factors affecting the attitude of the public e.g., housing conditions, nature of campaign programmes, orientation of the people, educational provisions, income levels and availablility of sanitary facilities.

Secondly, since successful operations of sanitation and health care programmes require medical and scientific knowledge, and understanding of community forces that influence individuals' behaviour is highly desirable.

Lastly, the study appreciates the need for relevant recommendations where necessary.

1.7 AIMS AND OBJECTIVE OF THE STUDY

The aim of this project is to assess the impact of public attitude on environmental sanitation in the Garki District.

(1) To illustrate the role of public via the overall participation in environmental sanitation.

(2) To highlight issues influencing the attitude of the public

(3) To examine the relationship between the state of the environment and public attitude of the Garki dwellers.

1.8 SCOPE OF THE STUDY

The study is basically an assessment of attitudinal influence on environmental sanitation using the Garki District of the Abuja Municipal.

Garki district of the Municipal Area Council is one of the series of districts that is being developed within the federal capital territory as recommended by International Planning Association (IPA) report on implementation of Federal Capital City.

The 1991 National Census gave the total population of the territory as 378, 671 people out of which Garki District of the Abuja Municipal Area Council has a total of 212.854 people (NPC.1992)

The Garki District is of the following spatial arrangements.

Generally the Federal Capital City was divided into three phases for the purpose of regulated development, the Garki area is within the phase 1 of the city.

The Garki area itself is further segmented into Areas One to Eleven. In this study, random selection of households will be employed.

1.8 JUSTIFICATION

It is necessary to do this study for the following reasons:

(i) To act as reference point for Environmental Agencies such as FEPA, AEPB in their policymaking.

(ii) References for health care programmes.

(iii) Thirdly, for scientific study and knowledge.

(iv) Lastly, to make appropriate recommendation where necessary.

It will be useful to the government and various agencies concerned with environmental sanitation by helping them to identify the problem areas in environmental sanitation with the view of taking necessary steps in bringing about good environmental management.

The benefits of this study are as follows.

(i) it will promote the physical and mental health and efficiency.

(ii) It will help to prevent the spread of diseases ie, proper hygiene

(iii) It may enhance availabilities of manpower

(iv) It will help to ensure a good standard of living for every individual in the community.

(v) It enhances the economics of the community, the cost if it is not done

(i) Result in diseases such as malaria, skin disease, diarrhea, bronchitis, asthma and typhoid.

(ii) It increases rate of green house gases in the atmosphere such as CO_2 etc which led to the rise in sea level leading to soil erosion, flooding and drought.

(iii) Air pollution

(iv) It increases death rate.

(v) It reduces availabilities of manpower.

1.10 METHODOLOGY

The data collection will be based n the use of questionnaire and direct field observation.

The information to be collected include:

(a) The occupational status of respondents

(b) Educational status of respondents

(c) Income level of respondents

(d) Environmental issues.

The characteristic of the respondents that are relevant to the study will be tabulated and explained.

1.10 THE ORGANIZATION OF THE WORK

To enhance simplification and analysis, this research work is divided into five chapters.

Chapter one is the introduction, scope of study, general physical characteristics of the study area, and specific problem statement, significance of study, aim and objectives of the study, limitation, justification, and methodology and finally the organization of the work.

Chapter two deals with the review of related literature on attitudes, values and behaviour, in environmental sanitation. Equally, is an in depth descriptive review of the effective hierarchy of understanding inconsistencies in environmental sanitation behaviour.

Chapter three dwells on the research methodology.

Chapter four is on data analysis and presentation.

Finally, chapter five gives the summary, recommendations and conclusion based on the research findings.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

Environment is the combination of natural objects (living and non-living), objects made by human being, the interrelationships between these and various circumstances, which surround people on earth.

Most countries in the world are now seriously concerned about problems of environmental pollution, whether it be of water, air or land.

These problems are greatest in the industrially developed countries and in the countries with high population densities, Nigeria is a practical example. (Lester, 1987) said without population, there would be no pollution, and that pollution is the price of progress.

Therefore, it is crystally clear that continued progress is dependent of on pollution abatement in particular and environmental protection in general.

Wastes generation and environmental degradation have been associated with human settlements since the dawn of history. It has been observed that amount, size and complexity of pollution generate by man are profoundly influenced by the level of urbanization and the intensity of socio-economic development of the given settlement.

The problems of refuse collection, disposal and environmental sanitation in our cities and urban areas throughout the country have occupied the attention of the three-tiers of government in the country, the federal, state and

local governments authorities for many years. Public concern on this issue continues to be expressed daily through the media, such as the newspapers, radio and television.

2.1 ATTITUDE

Attitude is a predisposition to respond in a certain way to a person, object, situation, event or idea. A person who shows a certain attitude towards something is reacting to his conception of that thing rather than to its actual state. An attitude is more enduring than a mood because it produces a consistent response. For example, a man who has an unfriendly attitude towards foreigners will show dislike of most foreigners he meets or hears about .

Attitudes are closely related to opinions. However, in that a person can state his opinion in words but may not be able to express his attitudes in the same way. He reveals his attitudes by his actions indirectly by the content of his statements. Attitudes are also related to prejudices. A prejudice is a rigidly fixed attitude, usually unfavourable, though a favourable prejudice is also possible. An attitude becomes a prejudice when the predisposition is so strong that no attention is paid to evidence that might call for a changed reaction. If a man says that all government employees eg, staff of AEPB accepts bribe, he is showing an attitude. If he refuses to accept proof that many of AEPB are honest, he has developed a prejudice.

Attitudes are formed as a result of some kind of learning experience. If for example is molested by a member of a certain sanitation monitoring team, he may thereafter disdain all members of that group. Simply following the example or opinion of a parent, teacher or friend may also learn attitudes. For instance, a child may take on his parents' prejudices about sanitation. In addition to the home, important builders of attitudes are schools, churches, media such as newspapers and television.

The attitude people hold can profoundly influence the way they act in person and larger situation. For these reasons psychologists and sociologists are concerned with how attitude develops, how they affect behaviour, and how they can be changed. To study attitudes, social scientists have prepared measuring scales. One form of scale requires a respondent to read a number of statements, ranging from strongly favourable to strongly unfavourable, about a topic, e.g., sanitation – as is the topic of this research. For example a scale to access attitudes about sanitation might include statement ranging from "Environmental Ethics, Environmental actions, and inactions". Responses to a number of such items can be given a numerical score. Attitude scales in this and other forms have been designed to measure many kinds of attitudes – towards environmental sanitation, towards war, towards schools, parents, political figures etc. scales can be applied to the same group at intervals in order to measure changes in attitude as a result of education or other influences.

2.1.1 VALUES AND SANITATION BEHAVIOUR

Values and attitudes have many common characteristics and often used interchangeably. A value is a belief upon which a person acts by preference. It is a cognitive a motor, and above all a deeply propane disposition (Allport, 1961)

An attitude, on the hand, e.g., a mental and neutral state of readiness, organized through exposure, extending a directive or dynamic influence upon individual's responses to all objects and situations e.g., sanitation. (G. Allport, 1935)

An individual's value affects a wide range of thought and behaviour patterns in part by generating diverse actions. Values the precede the development of environmental attitudes in a manner that moves from the general to the specific from a broad mental set to a narrow one.

For example, luxurious houses are highly "priced" in the Nigerian culture today; this value then predisposes an individual to react positively to environmental sanitization which forms a favourable attitude.

In extreme instances, this value may be overstepped by extravagant use of aesthetics. Thus, an analysis of an effect of knowledge on behaviour must now include the two major interceding variables- attitude and values. These factors allow a rational explanation of the apparent inconsistencies between

undesirable behaviour engage in by rather knowledgeable residents of the Garki area.

Much of our sanitation behaviour lacks consistency because a great number of factors influence our attitudes to environmental sanitation such as:

(1) Level of education

(2) Level of environmental education

(3) Level of income

(4) Level of income

(5) Population structure

(6) Housing condition

(7) Increasing influx of people

(8) Roles of the Abuja Environmental Protection Board.

Asc (1952) reports that in extreme instances the encounter of a contradictory fact can undermine an attitude and produce a movement in the opposite direction not participating in environmental sanitation. More frequently, when people encounter facts that conflict with their attitude, they search for other facts that will support their attitudes.

In spite of the public enlightenment campaigns through the media and use of mobile courts to prosecute defaulting households, a contradiction occurs in the individual's attitude which after the interpretation of facts in such a way that the weight of the message is suppressed. People accomplish this self-delusion in several ways.

1. The person may reject the fact by questioning its authenticity, either the source of the information and the stated penalty is doubted.
2. A second method is to interpret the meaning of the fact so as to reduce its threat.
3. Finally, people can actively seek out facts that support their attitude and avoid those that are contradictory.

People are most at ease when the knowledge they hold is consistent with their attitudes and values. If discord arises, the facts are often reinterpreted so that the contradiction between knowledge and attitude is removed. Much work has been done in these areas of attitude consistency. Festinger's (1957) "theory of cognitive dissonance Newcomb's (1953) concept of strain towards symmetry" and Cartright's and Harary's (1956) expression of balance and symmetry" in mathematical form express the notion that inconsistency is a painful or uncomfortable state. People attempt to rectify this situation by creating a congruity or balance between what they know and how they feel and behave towards this information.

Although differences do exist among these theories there is a congruity between cognitive and affective processes. Festinger's (1957) theory of cognitive dissonance will be discussed and applied since it is the most general and includes the sanitation implications of all the theories.

The theory of cognitive dissonance holds that two elements of knowledge are in dissonant relation of when each is considered alone. "The reverse of one element would follow from the other" i.e. (attitude and environmental sanitation)

Further, since dissonance and achieve consonance. In addition the person will actively avoid situations and in formations that would likely increase dissonance. Any number of interesting consequences of non-participation in environmental sanitation follows from the hypothesis.

The dissonance hypothesis also deals with situations in which a person is forced to express an opinion publicly or make a public judgment that is contrary to his or her own attitude or opinion. In such cases dissonance is developed between the knowledge of the overt behaviour and the privately held belief. For instance, if an avid environmentalist who speaks out against the undesirable situation of the environment during his campaign for chairmanship elections in the Garki Municipal Area Council, and eventually he wins such office, because of the inherent corrupt nature of most Nigerian civil servants to embezzle and loot public treasury for personal aggrandizements, the 'chairman' might not remember his promises of improving all the identifiable factors affecting public attitude to environmental sanitation in the area.

In another instance, the AEPS mobile-courts members are likely to accept gifts of goat and ram from the Garki residents who are illegally or

legally rearing such animals in a way that is detrimental to the environment of the particular area and this unwholesome "tip" will certainly exonerate the offender from prosecution and thus they are placed in a state of dissonance. They soon forget their initial convictions on the ills of such practices.

Although people continually attempt to achieve balance and congruity in their knowledge, attitudes and behaviour, inconsistency and irrationality is often apparent in sanitation behaviour as Hochbaum (1958) pointed out. The hierarchy of value or attitudes helps us to understand the apparent inconsistencies in the environmental sanitation behaviour. Fear of pain, humiliation by friends or family or some other personal emotion may interfere with environmental sanitation action.

2.2 BEHAVIOUR PARADIGMS

We have determined that human behaviour has a strong influence on environmental status and consequently the health status as well.

Both psychological (internal) and environmental (external) forces motivate behaviour. These forces in turn are influenced by cognitive and affective components. A variety of models exists to explain the interrelationships among these components as shall be adaptable by any relevant policy making arm in the environmental protection Agencies in the Nigerian case.

2.2.1 BEHAVIOURAL ADAPTATIONS TO THE EPIDEMIOLOGICAL MODEL.

The basic premise in the beginning of this chapter was that human attitudes through their behaviour are often responsible for environmental degradation and disability. If this is true, then the traditional epidemiological model must be modified to reflect this shift in environmental sanitation in the Garki area. The classic trilogy of agent, host and environment finds its parallel in a model developed by Lazarfield (1962), which is an attempt to explain epidemiological terms.

In this paradigm, the three components of the model include:

The internal tendencies that predispose the individual toward or away from the expected behaviour. The external influences in the environment that favour or oppose the course of action or the inherent attributes of the actions itself or the goal of the action that makes it attractive or undesirable to the individual.

Closer scrutiny reveals the parallel between the traditional and revised models, corresponding to the internal tendencies, is the host to external influences, the environmental and to inherent attitudes the agent.

A. Internal tendencies of the individual that predisposes him toward or away from bahaviour (host factors)

(i) Recognition of the seriousness of the threat.

(ii) Acceptance of personal vulnerability

(iii) Predisposition to act

(iv) Motivation to act

(v) Ability to act

(vi) Knowledge of desired action

(vii) Belief in the desired action

B. External influences of environment that favour or oppose the course of action (environmental factors)

(i) Social pressure

(ii) Incorporation into role performance

(iii) Social acceptability of action

C. Inherent attributes of the action itself that makes it attractive or unattractive (agent)

(i) Effectiveness of action

(ii) Pleasure of action

(iii) Effort required

(iv) Previous experience

(v) Environment where action will take place.

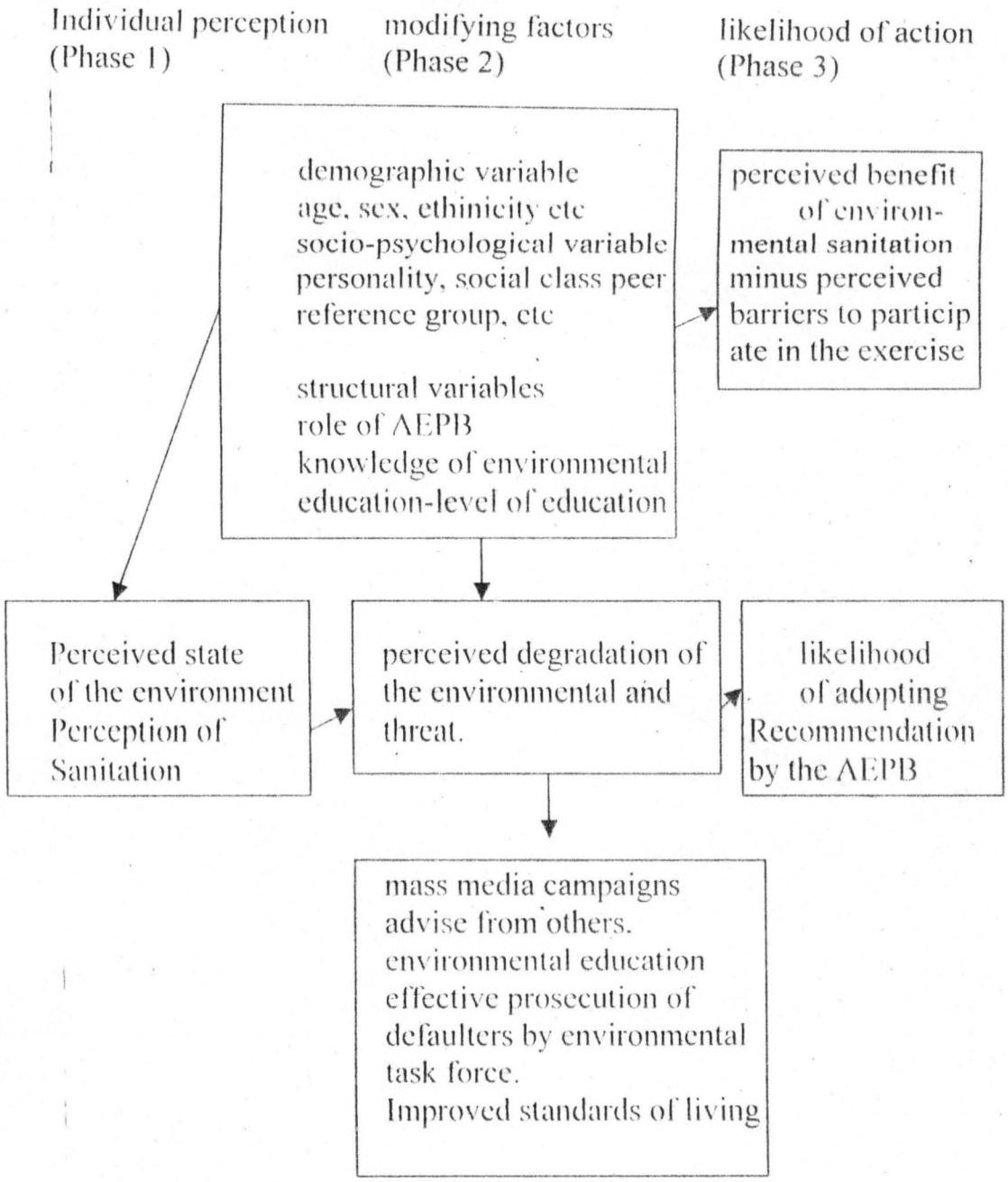

Fig 1. Health Belief model (modified from the copyright society for public health education, inc) Health Education monographs 2.4.1974 pp.328-335

2.2.2 HEALTH BELIEF MODEL

Initially developed in the mid 1950s, the health belief model is perhaps the longest-lived paradigm that attempts to identify and critically evaluate the factors responsible for human behaviour as it relates to an individual's attitude to sanitation. The health belief model is one of the more comprehensive constructs. It focuses on the prevention of environmental degradation through sanitation exercises. Becker (1974), Rosenstock (1974). It should be mentioned that all the contributors to the health belief model are socio psychologists and have been influenced considerably by the works and theories of Lensin (1951).

In essence Lensin's theory is strongly oriented toward individual personal perceptions of the world (environment) and how they motivate his or her behaviour. Aside from this phenomenological orientation the health belief model emphasizes motivation and the historical perspective of the individual based on his or her prior experiences. Thus, current dynamics confronting the individual are emphasized as well as all the factors that motivate behaviour.

From a broader perspective, the individuals' perception of the seriousness of the need for environmental sanitation is an important uninducement for a positive pattern of behaviour. The environmental degradation and deterioration would be considered a threat if it adversely affects the person's health or ability to support a family. The probability by the

individual being motivated to take appropriate course of action is further influenced by a set of intervening variables or modifying factors. Here such elements as demographic characteristics (age, sex etc) sociophychological variable (traits, peer, personality, social class and reference groups) and structural variables (a cognitive component) affect environmental sanitation behaviour.

Just as demographic, psychosocial and structural variables constitute one set of factors modifying sanitation behaviour, an additional set exists which is an essential ingredient in the model. This set of factors is called 'cues to action' which triggers or initiates appropriate sanitation behaviour. Thus some force that triggers the appropriate behaviour is required to set the process in action. Such an event may be internal or external.

The final phase of the health belief model is the livelihood of action. The livelihood of action is enhanced when the benefit of taking this action is realized. Barriers also exist that prevent the individual from initiating the action. The livelihood of positive action is thus estimated in terms of the perceived benefits of the action minus the barriers that prevent it from being achieved. An individual may believe that an action will be effective in reducing the environmental degradation, but the action may be costly, inconvenient and painful. As Schumann (1962) points out. Several alternatives snow arise. If readiness to act is great and the corresponding barrier to the action is low, the probability of action is high. Conversely, if the individual

were not ready to act and the behaviour to action was high, the environmental action would not be achieved should an equal level exist on both variables; the conflict becomes more difficult to resolve.

Sometimes the individual seeks alternative courses of action that result in nearly next to nothing. In summary the health belief model has three phases. Phase 1 identifies the individual's personal perception of the significance of environmental sanitation. The perception is influenced by a variety of motivating factors listed in phase2. Further the state of the individual's perception (phase2) is further influenced by a set of factors called cues to action, which initiates likelihood of action (phase3)

2.2.3 MODEL FOR PERSONAL CHOICE HEALTH BEHAVIOUR

Waingrow and Horn (1966) developed this model, which is a refinement of the health belief model. Any health behaviour can be substituted into this model and in this case, environmental sanitations is substituted. A current interpretation identifies four basic contexts in which human sanitation behaviour may be examined. (Horn, 1976).)"A model for the study of personal choice Health Behaviour")

They are shown in fig 1.2

Cessation or facilitation of environmental sanitation		
1	2	3
Motivation for Change "values"	perception of the environmental sanitation	environmental sanitation facilitation
a: example or role b: aesthetics c: reorientation	a: importance b: personal influence c: need for action d: consequences of not participating actively.	a: influence of mass media b: influence of key group c: interpersonal influences d: general climate of opinion e: environmental task force. f: cultural factors

Fig 1.2 Elaboration of factors governing cessation (or other modification) of the behaviour. (D.Horn. international journal of Health Education 19. 2. 1976. p94).

Factor 1 of the model describes the many factors that motivate an individual to change. In the past health educators have tried to stop maladaptive sanitation behaviour because of its detrimental effect on the environment. Too often. environmental bodies like the AEPB focus on the

actual sanitation exercise and do not recognize other forces that are more influential in modifying sanitation behaviour.

Factor 2 of the model develops the idea that the individual must perceive the needfulness and usefulness of sanitizing if constructive measures are to be undertaken to avoid environmental degradation.

At least four conditions are necessary if the individual is going to engage in environmental sanitation behaviour. The individual must first be aware of the degradation of the surroundings and then accepts the importance of acting. Further, the state of the environment must have personal meaning for the individual.

Finally, the individual must recognize that its imperative to intervene to alleviate or dislodge the impending consequences like diseases outbreak for instance. All four stages of factor 2 are necessary conditions for engaging in environmental sanitation bahaviour. Lastly, factor 3 of the model considers those factors that facilitate or inhibit continued reinforcement of the sanitation behaviour. Radio and Television advertisements and messages, peer pressure, and cultural factors will all influence environmental behaviour both positively and negatively.

Factor 3 of the model for personal choice health behaviour is very similar to the demographic, socio-psychological and structural variables identified in the health belief model. One important difference between these paradigms is found in the component of the likelihood of actions. No specific

mention of the inconvenience to the individual (barriers preventing action) is made in the personal health behaviour model.

Because the AEPB must initiate people towards pattern that will enhance environmental sanitation. The individual must have knowledge of those factors that motivate behaviour.

This chapter explored some of these motivating factors. It is universally accepted that knowledge alone does not always motivate an individual to act in a logical manner. How a person feels and what he or she values will determine whether the environmentally accurate knowledge he or she possesses will be acted upon to enhance desirable environment for the FCT. Thus values and attributes play prominent roles in affecting sanitation behaviour.

The interrelationships among the constellation of variables that affect sanitation behaviour are now being expressed as behaviour paradigms. The chapter examined in some detail the behavioural adaptations of epidemiological model of the health belief model and the model for personal choice health behaviour.

2.5 RELATIONSHIP BETWEEN IGNORANCE AND ENVIRONMENTAL SANITATION ATTITUDE.

Research findings (Eyero, 1976) in the United States. Atchiam, (1978) in Britain and Afica, and Noibi, (1982) in Nigeria concluded that:-

(a) a very strong positive relationship exists between conceptual knowledge of the environmental and attitude (behaviour) towards the environment: and

(b) a very weak relationship exists between Factual knowledge of the environmental and attitude (behaviour towards the environment).

While there is probably no study as yet to suggest casual relationship between environmental awareness and environmental behaviour, studies of correlation mentioned above and experiences all over suggest that a person's level of ignorance of the environment can be said to be actively related to the degree of damage to the environment. This could be exemplified with the following:

(a) the cocoa farmer who allowed nuclear wastes to be dumped on his land not knowing the damage the waste would do to his land and to the health of the people.

(b) The residents of a residential neighbourhood because they are ignorant of the consequences of the pollution.

(c) The farmers who over-graze their land or substitute chemical fertilizers for manure and pesticides for biological

means of pest control without bothering about the implications of their actions on their land.

These are obvious cases of ignorance. There are, however, more subtle cases in which the environment is degraded as a result unimpressive attitude to sanitation. In this regard, the people and the government are responsible for the deterioration of parts of Garki's environment.

The ignorance at the level of government is different. It has to do with lack of information necessary to meet the challenges of the environment. There is as yet no effective system of collecting data at regular intervals.

From the fore going we can infer that ignorance or lack of environmental awareness and action are the greatest contributors to environmental pollution at the level of both the individual and the government.

It is therefore increasingly urgent that we educate every Nigerian child on the impact of environmental degradation on the quality of man's life and influence of unsustainable consumption and production activities on development.

What are the key concepts in environmental education? How could environmental education facilitate sustainable development? Charging over our way of thinking on "population" "Resources" "Environment" and "Development" is a basic for sustainable development.

2.6 ENVIRONMENTAL EDUCATION FOR SUSTAINABLE DEVELOPMENT.

The American ecologist Garret Hardin says that a citizen of the new world must be educated to be literate (able to read) and to "numerate" (able to understand and use numbers) and to be "ecolate" (able to understand and use sustainably the complex environmental systems of which he or she is part)

Environmental Education (E.E) means different things to different people. Some define it as learning to understand, appreciate, work with, and sustain environmental systems on their totality. Others see EE as learning how to manage and improve the relationships between our human society and the environment in an integrated and sustainable way.

In view of the increasing environmental problem, it all requires a new way of thinking if we are to solve them, we must perceive environmental education as fundamental education in problem solving, but problem solving from a philosophical basis of holism sustainability, empowerment and stewardship. The goal is not just to solve it for a short time, but permanently. Not just to make a correction and restore the status quo, but to make things better.

Environmental Education (EE) is concerned with problem solving. EE enhances a whole variety of human attributes from the most rational to the most passionate caring. EE is also concerned with experience, observation, monitoring, and measurement as well as direct encounter with environmental sanitation problems, which helps to get facts straight. EE houses scientific approach to studying parts of environmental systems rationally and separately

with precision and depth and the humanistic approach of taking responsibility for the whole system caringly with respect and reverence.

2.7 POTENTIAL AREAS OF ACTIONS IN ENVIRONMENTAL EDUCATION

Environmental education can be an active contributor to solution of many environmental problems. In particular EE can make its intrinsic link with environment a much more positive partnership, if leading strategies are geared not only to transmit knowledge but more importantly:

(a) To develop intellectual problem solving skills

(b) To inculcate specific attitudes and values

Then environmental education (EE) would already have put in place, the basis for appreciating and conforming to at individual level, the concept of environmental sanitation.

The education of women and children is very important. Firstly, women are most often our children's first teachers and can thus ensure from an early age desirable attitudes to environmental sanitation. Secondly, women education appears to be a consistently powerful factor in reducing birth rates, and concomitantly child mortality rates. In the final analysis this means better childcare, slower population growth, less poverty and less pressure on the environment. Potential areas of actions towards environmental education for desirable sanitation attitudes include:

(1) Orientate formal and non-formal education sanitation

(2) Improve education training and awareness.

(3) Facilitate access to information and improve its communication and impact.

(4) Strengthen community partnership and participation.

In conclusion, there is no doubt that the need for conceptual knowledge of the environment will increase in future because the prospects for further degradation of the environment are high. The magnitude of pollution caused by various human activities is likely to increase with "growth" unsustainable consumption and production activities. In order for the Nigerian citizenry to move towards the path of sustainable life style, each and every one of us must start with an individual environmental desirable attitude. Furthermore, it is basic to purposefully change our conventional way of thinking to unconventional way of thinking. The conditions that would facilitate ecological prospective and promote holistic thinking are therefore basic to the process and attainment of sustainable environmental sanitation attitude.

It is not a policy statement that will lead us to live a sustainable life-style but rather a reorientation of our value system with particular reference to environmental ethics and stewardship.

We can therefore begin to value the principles of sustainable development and develop environmentally friendly habits.

No one needs to wait for anyone else to adopt a human and unlighted course of action. Men generally hesitate to make a beginning if they feel that the objective cannot be achieved in its entirety. It is precisely this attitude of mind that is the greatest obstacle to progress, an obstacle that each man can clear away by himself, and so as to influence others. (Late Mahatma Gandhi).

2.8 DEFINING ENVIRONMENTAL EDUCATION.

At the international workshop on environmental education held in Belgrade 1975, Environmental education was defined as "education aimed at developing a world population that is aware of and concerned about the environment and its associated problems and motivations and commitment to work individually and collectively toward a solution of current problems and the prevention of new ones" The International Union for the Conservation of Nature (IUCN) defines Environmental Education as "the process of recognizing value and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelation between man, his culture and his bio-physical surrounding". There are other definitions of Environmental Education adopted by various governments and organizations which may differ on emphasis on Environmental issues, but have some common characteristics such as:

(i) Interdisciplinary and holistic approach in the study of the environment;

(ii) Protection and conservation of biological species and the environment;

(iii) Impacts of man on biotic and abiotic environment;

(iv) Influence of natural and built environment on man and his activities;

(v) Seeing the environment as an open system, accepting input and giving output;

(vi) Emphasis on values and quality;

(vii) Having local, national, regional and international relevance;

(viii) Finally, Environmental Education as an Outdoor/Field activity.

Nigeria's environmental problems are as complex as those of any other developing countries. This is because they originate partly from the process of development and partly from poverty and environmental illiteracy. Apart from other environment ills, the rural/urban migration has resulted in urban slums where people live in abject poverty and squalor and often exposed to fatal diseases and vices of all types.

Environmental awareness and actions will go a long way in minimizing the problems of environmental degradation and ensuring people's quality of life in Nigeria. It will in addition, bring other citizens who understand the interrelationship between abiotic and biotic components of the environment, and how their socio-cultural economic activities can disrupt the natural order

and cause problems. Above all, environmentally literate people will harmonize their economic and social activities with the environment.

For example, environmentally literate people will appreciate the need to make use the existing sanitation facilities, the need to use pit latrines, the need to plant and look after two trees for every one they cut, the need to did trench terraces for soil conservation, the need to actively participate in environmental sanitation, and the need to recycle wastes and reduce pollution.

Furthermore, when they see the relationship between rapid population growth and depletion of natural environment and resource, they will avail themselves of existing family planning facilities.

This awareness can best be achieved through education. This does not refer to the very narrow conception of education as instruction aimed at helping students pass examinations but rather environmental education in the wider sense of the word. That is instruction based on syllabi coupled with activities which will not only make the pupil pass examinations but which will enable the pupil and students to develop an understanding, skills, interests, attitudes, values and commitments which will both improve the quality of life and enhance the protection and preservation of the environment.

Environmental Education is a philosophy, which is inter-disciplinary and holistic in approach. While it is necessarily local in outlook, it also draws experiences from the rest of the world. To be taught at the school level in Nigeria; it need not increase the workload of teachers or interrupt the time. The

main task now is to reorient the teachers who are involved in the teaching/learning process. This can only be achieved after the teachers have been effectively reoriented to the environmental conservation dimensions in their school subjects.

It is therefore suggested that since education in environmental studies is supposed to be as basic and fundamental as education in any other area and that no man or woman has the right to consider himself or herself an educated person unless he or she has a substantive knowledge about the world we live in, about what we are doing to harm the world, and about what we can do to save it. Environmental education is not a new educational tool, what it is or ought to be, is a new focus for the Nigerian system of education. It ought to infuse curriculum at every level and in every subject. The federal and state ministries of Education should take measures to ensure the introduction and encouragement of environment oriented education at all levels of our education systems.

2.9 CHALLENGES OF ENVIRONMENTAL EDUCATION FOR NIGERIA.

Environmental education has been assigned a position of prominence in developed countries and is assuming a position of increasing importance in developing countries today. Nations and people, irrespective of their stance on the quality and quantity of global environmental pollution, environmentally literate citizens of the world are demanding that science and technology devise

solutions to environmental problems; that organizations and non-governmental organizations implement these solutions and that education effectively communicate to the public and nature and magnitude of the problems the array of alternatives available for their solution and sufficient insight to choices. It is characteristic of all civilized societies to turn education to solve complex social problems.

The publication of the world conservation strategy whose main purpose is to "persuade the nations of the world to adopt ecologically sound development practice" (IUCN) and the United Nations Environmental Programme (1980) underscored the importance of environmental education as a viable means of solving environmental problems. Indeed the U.S.senator Graylord Nelson in introducing the Environmental Education Bill in the Congress, recognized that the problems of checking environmental deterioration is largely a behavioural one. He stated, "Education, I believe, is the only proper way to influence values, attitudes and basic assumptions in a democratic society. Behaviour in the long run, can best be changed through the process of education" (senator Gaylord Nelson, 1970)

2.10 GOALS, OBJECTIVES AND PRINCIPLES OF ENVIRONMENTAL EDUCATION

From our conception of environmental education discussed above, it may be seen that the ultimate goal of environmental education is the promotion of the "quality of the environment" (IUCN, 1970). It is beyond this, as the ultimate

goal of environmental education is the improvement of the quality of life of man specifically, the general goal of environmental education is to develop a citizenry that is aware of the total environment, concerned about it and its associated problems, and which has the knowledge, skills, attitude, motivations, and commitments to work individually and collectively towards a solution of current problems and the prevention of the new ones.

OBJECTIVES

With reference to the general goals of environmental education, categories of objectives which the government/teachers could use to develop a series of objectives for their subjects includes:

Awareness: To facilitate students and social groups acquisition of awareness and sensitivity for the total environment and its allied problems.

Knowledge: To help students and social groups to gain a variety of experiences with the total environment and to acquire a basic understanding of the total environment, its associated problem and humanity's critical responsible presence and role in it.

Attitude: To encourage students and social groups to acquire value, strong feelings of concern for the environment and motivation for actively participating in its protection and improvement.

Skills: To assist students and social groups to acquire skills for working towards the solution of problems and to foster a dialogue between the groups.

Participation: To develop in students and social groups a sense of responsibility and urgency regarding environmental problems to ensure appropriate action to help solve these problems.

To achieve the aforementioned goals and objectives in our school structure and processes are needed to help individuals and groups.

(a) Understand that people are an inseparable part of an environmental and that whatever they do alters their surroundings in both detrimental and beneficial ways.

(b) Acquire a basic conceptual knowledge of environmental problems; their causes and their solutions;

(c) Finally, develop skills useful to understand, prevent and correct environmental abuses.

CHAPTER THREE

3.0 RESEARCH DESIGN AND METHODOLOGY

3.1 RESEACH DESIGN

The emphasis of this chapter is to highlight the methods of data collection and methodology that were used or employed in the process of conducting the research-work. This research is a survey type designed to investigate or assess public attitude to environmental sanitation in the Garki District of the Federal Capital and to determine the effect of public attitude to environmental sanitation in Federal Capital and make recommendations on how to improve public attitude in the study area.

The research relied mainly on primary data and secondary data and structured in a way that will ensure relevance of data collection.

3.2 METHODS OF DATA COLLECTION

Data collection is one of the social pillars in the research findings and the researcher collected data using primary and secondary sources for the purpose of finding out the effects of public attitude to environmental sanitation in the Garki District of the Federal Capital territory.

Also this section has been directed into sub-sections such as questionnaire design, sampling procedure, data collection, questionnaire administration and problems of data collection.

PRIMARY DATA.

3.21 Due to the fact that primary method of data collection gives a first hand information, saves time and better information is obtained, the researcher relied on it in carrying out data collection for this study. The various primary sources of data that were used including the interviews method use of questionnaires and direct field observation method.

3.22 SECONDARY DATA

The researcher consulted textbooks, magazines, newspapers, delivered papers and journals for the purpose of data collection. This helped the researcher in finding out the extent of work done already on the topic and other related areas. This enabled the research to acquire some data and to investigate some areas that require more studies.

3.2.3 QUESTIONNAIRE DESIGN

The questionnaire is tailored to obtain information on environmental actions and inactions in relation to environmental ethics. This arrangement was necessary so as to conveniently interprete the data collected on various measurements.

The questionnaire is structurally a closed one where questions are asked with fixed numbers of answers for the respondents.

The questionnaire is generally characterized by two parts i.e. part 1 and part 2. Part 1 contains the demographic and economic characteristics of the respondents, which comprises name f the respondents, sex, educational level, occupation, and lastly, level of income.

3.3 SAMPLING PROCEDURE

In this study, the random selection technique was used so that all households can be arbitrarily chosen.

For households or regional survey studies, Seymour (1976) suggests that points to be selected should at least be between 200-500 elements. Due to cost and other logistics considerations 203 respondents / households were chosen by the researcher which is within the range suggested by Seymour.

3.4 QUESTIONNAIRE ADMINISTRATION

The questionnaires were administered to the households' heads or any other eligible members of the house and particularly during the weekends as more respondents could easily be reached at such days.

In reference to the introductory chapter, Garki District of Municipal Area Council is divided into seven areas which are:- Area one, two, three, seven, eight, ten and eleven.

In this study 203 questionnaires were administered in all the seven areas and the researcher sought to achieve this by administering 29 questionnaires to each of the seven areas to sum up the 203 questionnaires.

3.5 DIRECT FIELD OBSERVATION.

Field observation was undertaken with the intent of knowing the state of the environment of the Garki area and to concurrently assess the

effectiveness of the Abuja Environmental Protection Board (AEPB) in discharging their sanitary duties in the area in view of the fact that the office is located within the area.

Moreso, during the course of the field observation, photographs of areas or sites of significance to this work were taken. Such photos were hoped to portray the true state of the environment and reflect the attitudes of the public toward environmental sanitation.

3.6 CODING / TABLING

All related data were first coded and later assembled to help in categorizing them under appropriate headings and sections. This is also to help facilitate the editing of the information collected and reduce survey errors.

The questionnaires were separately tabulated to present a summary of all the responses to each major research question to aid the testing. In doing this, the data were first tallied to produce useful relationships and the results of interviews and observations were considered in drawing conclusions.

3.7 STATISTICAL TOOLS FOR DATA ANALYSIS

The data gathered from the various questions were grouped and the tally method, which was the simplest and most straightforward, was applied.

The statistical data were presented using tabular method for easy comparison and in taking decisions. The table also shows that 202 questionnaires out of the 203 questionnaires were returned. This response rate is high enough to be used for analysis.

TABLE 2 RESPONSE RATE

	No of questionnaires Administered	Number returned
Area one	29	29
Area two	29	29
Area three	29	29
Area seven	29	29
Area eight	29	29
Area ten	29	29
Area eleven	29	28
TOTAL	203	202

Source: personal survey.

From the table, out of 203 questionnaires administered, 202 were returned representing 90% of the total questionnaires. Out of 29 administered to Area one, 29 were returned, for Area two, 29 were returned, 29 administered to Area three, 29 were returned, 29 administered to Area seven and 29 were returned, 29 administered to

Area eight and were all returned. 29 to Area 10 and 29 were returned and 29 to Area eleven but 28 questionnaires were returned.

In the next chapter we present the results and our inferences from the data collected.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 INTRODUCTION

In this chapter the data collected from the administration of questionnaires and direct field observation are presented.

The characteristics of respondents that are relevant to this study are tabulated and explained below based on two hundred and two (202) questionnaires received out of the two hundred and three (203) questionnaires that were selected initially at random.

4.2 RESPONDENTS PERSONAL DATA

4.2.1 OCCUPATIONAL STATUS OF RESPONDENTS:

The respondents are dominantly civil servants hence the entire area is mainly residential area for civil servants and whatever deviations exists are merely perhaps due to relatives or friends living with their civil servants hosts.

4.2.2 EDUCATIONAL STATUS OF RESPONDENTS

Table 4.1

	Educational attainment	Numbers
A	Koranic school	6
B	Primary incomplete	2
C	Primary complete	12
D	Secondary incomplete	23
E	Secondary complete	47
F	Higher education	121
G	None	
	TOTAL	211

Source: Field survey 2003

From table 4.1 it is obvious that one hundred and twenty one (121) of the respondents have attained higher education status, hence the area is dominantly residential area for civil servants.

4.3.3 INCOME LEVEL OF RESPONDENTS

Table 4.2

INCOME GROUP	NUMBER
=N10, 000 and below	36
=N11, 000 – =N15, 000	32
=N16, 000 and above	77
TOTAL	145

Source: Field survey 2003

Table 4.2 reveals that income level of =N16, 000 and above has the highest number of seventy-seven (77) as this agrees with higher number of respondents that have attained higher educational status in Table 4.1.

4.3 ENVIRONMENTAL ISSUES (refer to Appendix 2 data)

The under listed fifteen environmental issues in table 1 typify the prevalent environmental issues. The findings of environmental ethics have been broadly classified under environmental action, conditional action and environmental inaction.

Table 4.3 Summaries of Responses on Environmental Ethics.

		ACTION			INACTION	
	Environmental Issue			Conditional action		
		Positive	Negative		Positive	Negative
1	Monthly Sanitation	73,14,28	0	18,7,37,1	0,1,1,22	
	TOTAL	115	0	63	24	
2	Personal Sanitation	35,9,8	3,4	40,20,1,9,17	4,50	
	TOTAL	52	[illegible]	87	54	
3	Dumping of Refuse into About drains Or littered	106,30	[illegible]	31		
	TOTAL	136	14	31		
4	Littering Polythene Bags, plastics And like wastes	105,32	7,2	26		
	TOTAL	137	9	26		
5	Planting flower to beautify Surrounding	32,24,24	35,2		5,13	
	TOTAL	56	37		18	
6	Passing faeces Or urinating Openly (bush)	122,14	22			
	TOTAL	136	22			
7	Cutting of trees for firewood	140,7	5,6	12	6	
	TOTAL	147	11	12	6	

8	Bush burning	148,11		8	10	
	TOTAL	159		8	10	
9	Indiscriminate Hunting of Wildlife	156	5,4,5	2		
	TOTAL	156	14	2	9	
10	Illegal mining	152,5	0,3	1	9	
	TOTAL	157	3	1		
11	Noise pollution Through loud Music or grinding machine in residential areas.	113,17	16			
	TOTAL	130	16			
12	Hawking	143,4	1,8	2,17	8	
	TOTAL	147	9	19	8	
13	Rearing chicken and goats in residential areas	127,12	11,1,6,2	7,4	7	
	TOTAL	139	30	11	7	
14	Having gardens / farms in residential areas.	99,5,12	16,3,7,10	11,12		
	TOTAL	116	36	23		
15	Smoking in public	133,7,16	5	0,1,16		
	TOTAL	156	5	17		

Source: Field survey 2003

From table 4.3 it is obvious that for every environmental issues there are categories of expected responses that is action (positive and negative) As an index however, it must be noted that some environmental actions or inaction could be positive or negative as the case may be and this

this depends on the environmental issue concerned. (Refer to appendix 1, part2), for source of the data. The interpretation of the table is as follows:

ENVIRONMENTAL ISSUES 1: MONTHLY SANITATION.

Positive action: A total of one hundred and fifteen respondents (115) will participate or undertake the exercise either out of their volition or to help propagate the message or will not stop because this is good for them.

Negative action - none

Conditional action - G.D,E.K sixty-three (63) respondents will require to be compelled or only engage in this exercise occasionally or at their convenience both In time and money. Others will stop completely if better alternatives are available.

Positive action - none

Negative action - (I,G,H,A) Twenty-four respondents have either stopped or are unconcerned and do not engage or involve in it.

ENVIRONMENTAL ISSUE 2. PERSONAL SANITATION.

Positive action - B,F,J only fifty-two (52) respondents either engage in or propagate the message or will not stop engaging in personal sanitation.

Negative inaction - (I,G) SEVEN (7) respondents have either stopped completely or are unconcerned.

Conditional action – (D,E,K,C,H) eighty-seven (87) respondents only participate or undertake this exercise occasionally when it is convenient financially or will stop when there are better alternative or any out of compulsion or they are unconcerned because there is a sanitation Board which should do its job.

Position inaction - nil

Negative inaction -(G, A) fifty-four (54) respondents are either unconcerned or do not engage in this practice or involve in it.

ENVIRONMENTAL ISSUE NO 3. DUMPING OF REFUSE IN DRAINS OR LITTERED ABOUT.

Positive action - (A,I) one hundred and thirty-six (136) respondents either do not engage in this practice or have stopped.

Negative action – (J.C) Fourteen (14) of the respondents will not stop because this is the available means of waste disposal and are compelled to engage in this negative act probably because of lack of waste disposal facilities.

Conditional action – (K) thirty-one (31) of the respondents are ready to stop as soon as there is a better alternative.

Positive inaction - nil

Negative inaction – nil

ENVIRONMENTAL ISSUE NO 4. LITTERING POLYTHENE BAGS OR PLASTIC AND LIKE WASTE.

Positive action – (A.I) One hundred and thirty-seven (137)of the respondents either do not in this practice or have stopped.

Negative action - (J.C) Nine (9) respondents will not stop probably because even where bins are provided they are grossly inadequate either in size or in number or due to infrequent collection by the AEPB and thus they are compelled to continue.

Conditional action - (K) Twenty-six (26) respondents will stop if there is alternative. -

Positive inaction - nil

Negative inaction - nil

ENVIRONMENTAL ISSUE NO 5: PLANTING FLOWERS TO BEAUTIFY SURROUNDINGS:

Positive action - (B.F.S) Eighty (80) of the respondents undertake as well as propagate the message and will not stop because this is good for them.

Negative action - (A.C) Thirty-seven of the respondents do not engage in the practice or involve in it, even when they do, it is squarely out of compulsion.

Conditional action - (D.E.K) nil

Positive inaction- nil

Negative - (G.H.I) Twenty-one (21) respondents are either just concerned to have stopped.

ENVIRONMENTAL ISSUE NO 6: PASSING FAECES OR URINATING IN THE OPEN (BUSH)

Positive action - (A.I) One hundred and thirty-six (136) of the respondents do not engage or involve in it or have stopped.

Negative action - (A.C) Twenty-two of the respondents are unconcerned whatever happens to the free population forasmuch as they will satisfy themselves.

ENVIRONMENTAL ISSUE NO 8: BUSH BURNING.

Positive action - (A.I) One hundred and fifty-nine of the respondents (159) do not engage in this practice or involve in it.

Negative action - nil

Conditional action – (K) Eight (8) respondents will stop bush burning if there is a better alternative.

Positive inaction - nil

Negative inaction – (G) nine of the respondents are unconcerned about the consequences of this act.

ENVIRONMENTAL ISSUE NO 9: INDISCRIMINATE HUNTING OF WILD LIFE.

Positive action (A) one hundred and fifty-six (156) of the respondents does not engage in this practice or involve in it.

Negative action - (E,I,J) Fourteen (14) of the respondents either participate or undertake this exercise when they have time or have stopped while others will not stop because it is good for them.

Conditional action - (K) Two respondents (2) will stop if there is a better alternative.

Positive inaction – nil

Negative inaction – nil

ENVIRONMENTAL ISSUE NO 10: ILLEGAL MINING.

Positive action – (A) One hundred and fifty-seven (157) of the respondents do not engage in this practice or involve in it.

Negative action – (E.J) Three (3) of the respondents participate or undertake this exercise when they have the time or will not stop because this is good for them.

Conditional action - (K) only one of the respondents will stop if there is a better alternative.

Positive inaction - nil

Negative inaction -(G) Nine (9) of the respondents are unconcerned about the consequences of this act.

ENVIRONMENTAL ISSUE NO 11: NOISE POLLUTION THROUGH LOUD MUSIC OR GRINDING MACHINES IN RESIDENTIAL AREAS.

Positive action - (A.I) One hundred and thirty (130) respondents either do not engage in this practice or involve in it or have stopped.

Negative action - seventeen (17) respondents will not stop because this is good for them.

Conditional action - (K) Only sixteen (16) of the respondents will stop if there is a better alternative.

Positive inaction – nil

Negative inaction –nil

ENVIRONMENTAL ISSUE NO 12: HAWKING

ENVIRONMENTAL ISSUE NO 12: HAWKING

Positive action - (A,F,I) One hundred and forty-seven (147) of the respondents either do not engage in this practice or involve in it or have stopped this act.

Negative action - (G,J) Nine (9) of the respondents are either compelled to participate or undertake in this practice probably to alleviate their low economic status or low level of income or will not stop because this is good for them economically.

Conditional action- (C,K) Nineteen (19) of the respondents will either participate or undertake this when they have the time or will stop if there is a better alternative.

Positive inaction - nil

Negative inaction- (G) Eight (8) respondents are unconcerned about the environmental implication of indiscriminate hawking.

ENVIRONMENTAL ISSUE NO 13: REARING CHICKEN AND GOATS IN RESIDENTIAL AREAS.

Positive action - (A,I) One hundred and thirty-nine (139) respondents do not engage in this practice or involve in it or have virtually stopped.

Negative action- (B,C,D,J) Thirty (30) of the respondents will either choose to engage in the practice or compelled to engage to ease economic burden and will not stop because this is good for them.

Conditional action - (K,E) Eleven (11) of the respondents wills stop if there is better alternative or will undertake as soon as there is time to do so.

Positive inaction - nil

Negative inaction – (G) seven of the respondents do not are or are unconcerned about the environmental implication of such act.

ENVIRONMENTAL ISSUE NO 14: GARDENING /FARMING IN RESIDENTIAL AREAS.

Positive action - (A,G,I) One hundred and sixteen (116) respondents either do not engage in this practice or involve in it at all or have stopped.

Negative action:- (H,C,D,J) Thirty-six (36) of the respondents undertake in this practice voluntarily or are compelled to do so by their low income level and will not stop because it is good or helpful to them.

Conditional action - (E,K) Twenty-three (23) of the respondents participate or undertake this when they have the time or will stop when there is a better alternative.

Positive inaction – nil

Negative inaction- nil

ENVIRONMENTAL ISSUE NO 15: SMOKING IN PUBLIC.

Positive action (A,G,I) One hundred and fifty six (156) of the respondents either do not engage in this practice or involve in it or have stopped.

Negative action – (B) five of the respondents go ahead to smoke in public regardless of its implication to the health of others.

Conditional action: - (D.E.K) Seventeen of the respondents either will smoke because they can afford it or will stop if they can really quit

Positive inaction - nil

Negative inaction -nil

4.4 FIELD OBSERVATION

Based on personal field observation, it was observed that in all the areas, the building structures were largely that of storey buildings and thus the responsibility of sanitizing the immediate surroundings might not necessarily be that of those residing upstairs but rather it is especially of those in the first floor and therefore this may have influenced the nature of responses obtained.

Also the period these observations were undertaken was in the month of October 2003 which coincided with the period Nigeria was to host COJA 2003 and of course in the face of these events, it is expected that there will be intensified clean up of the "capital city" of this country especially when most of the visitors will probably wish to visit the capital city of the greatest black nation of the world. Thus, the resultant attitude for sanitation of inhabitants in the area under study could be slightly less than what is recorded here.

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSION.

5.1 SUMMARY.

This research was carried out with the aim of assessing the impact of public attitude to environmental sanitation in Garki District of FCT. The specific objectives of the study are:

1: To illustrate the role of public attitude via the overall participation in environmental sanitation.

2: To highlight issues influencing the attitude of the public.

3: To examine the relationship between the state of the environment and public attitude of the Garki dwellers.

It is very important to know that whatever damage is done to the environment is essentially as a result of our insensitivity and activity / inactivity.

However, the study reveals growing environmental consciousness on the part of the populace, and their clamour for proper environmental responsibility by the AEPB on the one hand, and a vigorous and sustained Environmental Education on the other hand. It is certain that the federal capital city will achieve the long expected environmental friendly behaviour and a sustainable and safe environment for all now, and future generations in the federal capital city.

Environmental sanitation is very important to protecting human health and to make the environment hazard free. It helps toward the protection and promotion of public health, which improves the environment.

The problem that necessitates the studying of this project are based on the following reasons:

1) To act as reference point for environmental agencies such as FEPA, AEPB in their policymaking.
2) References for health care programmes.
3) Thirdly for scientific study and knowledge.
4) Lastly to make appropriate recommendation where necessary.

In an effort to solve these problems, the researcher obtained data through the use of questionnaire, direct field observation and interviews. The data collected were analyzed and presented in tables for easy understanding.

The major findings of the study are as follows:

i) That some respondents have either stopped or are unconcerned and do not engage in environmental exercise.
ii) That 36 respondents out of 203 respondents do not dump refuse into drains or litter them about. Majority dumps their refuse in appropriate places.
iii) Also it was observed that polythene bags are littered by few respondents while majority do not litter the environment with polythene bags.

iv) That 80 respondents plant flowers to beautify the surroundings while 37 respondents do not engage in the art of flower planting and 21 are either not just concerned.

v) Also 136 respondents do not engage in passing of faeces or urinate in the open places while 22 respondents do that.

vi) Majority of the respondents are not engaged in bush burning.

vii) On the conservation of wildlife, 156 respondents do not hunt wildlife while 14 respondents participate in hunting of wildlife

viii) The researcher also found that majority of respondents are involved in illegal mining.

ix) Majority of the respondents cause noise pollution through loud music or grinding machines in residential areas.

x) Also the majority of the respondents are involved in street smoking, farming in residential areas, rear chicken and goats and hawk.

All these have negative effect on the environment.

5.2 RECOMMENDATION

The greatest challenge for Nigeria today is that of environmental education. The study however reveals an ugly trend in attitude of the public in the Garki District amidst growing environmental awareness moreover the populace are predominantly literates, based on this study. The researcher recommends that a new environmental education strategies be vigorously embarked upon by the

(AEPB) Abuja Environmental Protection Board with a new emphasis on environmental stewardship and not just the hitherto superficial approach.

These dimensions amongst other could include:

1. Role-playing: This recommendation is according to Ukaegbu (1985), which obviously a good means for changing and modifying attitudes and developing new ones. If leaders lead by example (Refer to 2.2.3) Fig 1.2 and 4.2.3.
2. Another recommendation is "Enter-Educate" which is simply entertainment to educate. The populace can be educated through entertainment.
3. Documentaries: These are reports on real life situations in the society in a factual and formal way towards educating the society. Moreso, television, mini-drama and variety shows go a long way in changing society's attitude and behaviour.
4. Another recommendation is Advertising slots and jingles. Spots in advertising are very short and versatile, they can be made to be educative while performing their informative role.
5. I recommend the earnest promulgation of a decree mandating every Nigerian to acquire a wealth of environmental knowledge before being considered to have attained any educational status. For the illiterate Nigeria, the use of pictography should be employed to abreast the nature of the environment and to optimally sustain it.

I will equally recommend the future researchers on this work to increase the number of population to be studied in order to obtain enough data for the research. Also, a more rigorous assessment of the efficiency of the AEPB should be sought.

5.3 CONCLUSION

Environmental awareness and actions will go a long way to abate the problems of environmental degradation and enhancing people's quality of life. It will in addition bring about citizens who understand interrelationships between abiotic and biotic components of the environment and how their socio-cultural economic activities can disrupt the natural order and cause problems.

Above all, environmental literate people will harmonize their economic and social activities with the environment.

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APPENDIX I

QUESTIONNAIRE

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA.

DEPARTMENT OF GEOGRAPHY.

Dear Sir / Madam.

This questionnaire is for the purpose of my research project as partial requirement for the award of Postgraduate diploma in Environmental Management.

Yours Faithfully,

Dolapo Osodin.

Instruction

Please answer the questions below by ticking and / or filing in the correct answers. Answers to these questions will be used for the purpose of the study. Your sincerity is solicited since your identity is not sought.

PART 1: PERSONAL DATA

1. **Name of your residential area** ----------

2. **Area Council** ----------

3. **Sex: male** ☐ **Female** ☐

4. **What is your highest educational level attained**:

   A: Koranic School b: primary incomplete

   C: Primary complete d: secondary incomplete

   E: secondary complete f: Higher (specify)

   G: none

5. **What is your income per annum?**

   A: =N10, 000 and below

   B: =N11, 000 - =N15, 000

   C: =N16, 000 and above

6. **What is your main occupation?** ----------

PART 2. ENVIRONMENTAL ACTION.

Please read the following expected environmental action and indicate sincerely what action you have taken. Tick the alphabet of whichever of the following environmental activity or inactivity applicable to you and each expected environmental ethic.

ENVIRONMENTAL ACTION / INACTION.

a: I don't engage in this practice or involve in it.

b. I participate or undertake this exercise out of my volition.

c. I participate or undertake this exercise out of compulsion.

d. I participate or undertake this exercise occasionally when it is convenient financially.

e. I participate or undertake this when I have the time.

f. I help propagate the message.

g. It is not just my business or concern.

h. It is not my concern because there is a sanitation Board that should do this job.

i. I have stopped.

j. I will not stop because this is good for me.

k. I will stop if there is a better alternative.

APPENDIX II

ENVIRONMENTAL ETHICS

	A	b	c	D	E	f	G	h	i	J	k
1. Participation in monthly environmental sanitation exercise	22	73	18	7	37	14	1	1	0	28	1
2.Ido you undertake or hire labour for personal cleaning of surroundings outside monthly sanitation day	50	35	9	40	20	9	4	17	3	8	1
3. dumping of refuse into drains or littered about.	106	4	7	0	2	6	3	1	30	7	31
4. littering polythene bags plastics and like wastes	105	3	2	0	2	6	4	1	32	7	26
5. planting flowers to beatify surroundings	35	32	2	27	31	24	5	13	3	24	2
6. passing faeces or urinating in the open (bush)	122	6	2	2	1	4	5	1	14	11	22
7. cutting of trees for firewood.	140	7	5	3	1	4	6	2	7	6	12
8. bush burning	148	7	0	2	1	4	10	2	11	4	8
9. indiscriminate hunting of wildlife.	156	3	1	2	2	5	11	2	4	5	2
10.illegal burning	152	2	1	2	8	2	9	3	5	3	1
11. noise pollution through loud music or griding machines in residential areas	113	8	1	1	5	4	12	5	17	17	16
12. hawking	143	3	1	2	2	4	8	3	6	8	17
13. rearing chicken and goats in residential area.	127	11	1	6	4	5	7	5	12	12	7
14. having gardens / farms in residential areas.	99	16	3	7	11	4	8	1	10	24	12
15. smoking in public	133	5	1	0	1	0	7	1	16	5	16

Appendix iii

Table 5: Overview of the Evolution of Sanitation and related Laws in Nigeria

Year	Name and type of legislation	Implementing agency	Area of jurisdiction	Primary purpose
1863	Township improvement ordinance	Lagos colonial government	Lagos colony	sanitation
1917	Township ordinance	National colonial government	Entire protectorate North and South	sanitation
1928	Lagos town planning ordinance	Lagos colonial government (Lagos Executive . development)	Lagos colony and inter-entire protectorate	Land use urban renew island all on Lagos
1946	Town & country planning ordinance nos 4 & 29	Lagos and regional governments	Lagos & the three regions	Land use
1958	The 1946 town and country planning ordinance amended and published as laws of Nigeria cap.166	Lagos and regional governments and later state governments through planning authorities. State town planning Division. urban development board.	Lagos city regions (then) and states.	Development control
1974	Foods and drugs decree	Foods and grugs agency	National	Sanitation & health
1979	Part of constitution of federal republic of Nigeria	Local government councils nationwide	Local government areas	Sewage and refuse disposal
1985	Environmental sanitation edict	Lagos state waste disposal board	Lagos state	Sanitation pollution control
1986	Lagos state town and country planning edict	Lagos state town planning authority	Lagos state	Physical planning health
1987	Factories decree	Federal factory inspectorate	Industries nationwide	Safety and health
1988	Harmful waste decree no 42	Federal environmental protection agency (FEPA)	National	Sanitation. health and ecosystem

1991	Pollution abatement in industries cap.131	FEPA	Industries	Sanitation health &ecosystem protection
1992	Environmental impact	FEPA	National	Health & ecosystem protection sanitation & physical planning
1992	Urban and regional planning decree 88	All tiers of government	National	Proper physical development

Source: (1) Olokesusi (1988) "An overview of pollution in Nigeria and impact of legislated standards on its abatement" The environmentalist vol (8) 1:31-38

(2) Various government publications.