

Environmental Laws in Nigeria: Negligence and Compliance on Road Transportation Land Use Planning Pattern in the South-South Geo-political Zone

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This study examined the negligence and compliance on road transportation land use planning pattern in the south-south region of Nigeria. Gray (2011) stated that environmental law is a body of laws that seeks to protect or enhance the environment. He further stressed that environmental law was one of the fastest developing areas of laws at the end of the last century. Adding that it is difficult to find an area, where rules do not apply. Data for this study were collected from primary sources, through the administration of one thousand eight hundred (1800) questionnaires and physical survey of the area. Results from this study revealed that the major resultant effects of negligence of environmental laws in the study area were slow vehicular movement/traffic jam (20.8%), increased accident rate (22.6%), collapsed building and other infrastructural facilities (16.0%), and lack of access to other environment/areas (40.6%). This study recommends that most of the untarred roads, if not all, should be properly tarred in the study area, so as to avert the prevailing problems of flooding in the area. It was equally revealed that the proper land use and planning, and the enforcement of proper refuse disposal system and the provision of more drainage facilities in the area will help in controlling the problems of flooding and erosion on road transportation network in the study area.

Keywords: Compliance, Environment, Laws, Negligence, Road Transport, South-South Region of Nigeria.

INTRODUCTION

There is a growing global concern for the preservation and conservation of the environment. This is because of the realization that every human being has the right to environmental protection because the quality and standard of human life and healthcare, that a person enjoys and the survival of man depends entirely on the survival of the environment from which mankind derives his livelihood (Abegunde, et al, 2007).

Thus, law and policy makes environmental protection work. It is the government and relevant agencies that possess the capacity and ability to make policies and back it up with laws to effect environmental compliance. The Federal Environmental Protection Agency was set up in 1988 by virtue of Decree No 58 of 1988. The agency is a corporate body with perpetual succession and a common seal, and may sue and be sued in its corporate name (Ukeogo, 2006).

Ajomo (1989) tends to agree with this definition, as according to him, Nigerian environment is composite in nature. This means that, an environment is the aggregate of social and cultural conditions that influence the life of an individual or community. In view of the fact that the environment is the most formidable source of national and international development; it must be protected from damage, destruction, or annihilation. Since, an abuse of the environment could result in its decay, which will ultimately affect meaningful development, there is therefore, the need to preserve the ecosystem.

The establishment of the National Environmental Standards and Regulatory Enforcement Agency (NESREA) in 2007 necessitated the need for the review and development of existing environmental rules and regulations in the country. This is also in line with best practices worldwide. The Director General of the Agency, Dr (Mrs) Ngeri Benebo, with due approval from the then Honourable Minister of Environment,

Housing and Urban Development, Arc. (Mrs.) Halima Tayo Alao instituted a committee to review these regulations and standards. Accordingly, the procedures, processes and methodologies on existing standards and regulations were being scrutinized.

Environmental laws are complex and interlocking body of treaties, conventions, statutes, regulations and common law that 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 (Adam 2005). Environmental laws draw from two angles;

- (i) Pollution control and remediation
- (ii) Resource conservation and management.

Laws dealing with pollution are often media-limited, that pertains only to a single environmental medium, such as air, water, (whether surface, ground water or ocean), soil, and control both emissions of pollutants into the medium as well as liability for exceeding permitted emissions and responsibility for cleanup.

In order to develop regulations and standards, the Agency embarked on collection of the following data—collection of copies of daily effluent monitoring reports, collation of production log sheet data in the last five years, checking of the number of shift and working hours and examining the recent copies of environmental audit, from some industries. Also, relevant literature on Federal and State laws as well as environmental laws of similar countries were collected, compared and harmonized to identify gaps. These activities resulted in the production of draft working documents. Consequently, the expert committee meetings on the following regulations prepared clean drafts on;

- i. National Environmental (Pollution Abatement in Mining and Processing of Coal, Ores and Industries Minerals) Regulations, 2008;
- ii. National Environmental (Sanitation and Wastes Control) Regulation, 2008;
- iii. National Environmental (Pollution Abatement in Chemicals, Pharmaceuticals, Soaps and Detergent Manufacturing Industries) Regulations, 2008;
- iv. National Environmental (Pollution Abatement in Food, Beverages and Tobacco Sector) Regulations, 2008;
- v. National Environmental (Pollution Abatement in Textiles, Wearing Apparel, Leather and Footwear Industry) Regulations, 2008;
- vi. The National Environmental (Wetlands, River Banks and Lake Shores Protection) Regulations, 2008;
- vii. National Environmental (Watershed, Hilly, Mountainous and Catchment Areas) Regulations, 2008;
- viii. National Environmental (Ozone Layer Protection) Regulations, 2008;
- ix. National Environmental (Noise Standards and Control) Regulations, 2008. Source: (National Environmental Standards and Regulatory Enforcement Agency (NESREA) Quarterly Magazine (2008). Page (9).

STATEMENT OF THE PROBLEM

Ladan (2004) stated that inappropriate land use can lead to soil degradation. Bad farming techniques are often responsible for land degradation, leaving fields bare or ploughing them up and down the sides of a hill can cause severe soil erosion,

when it rains heavily as the soil has nothing keeping it in place. When the left over parts of crops and animal manure are ploughed back into the soil, they serve to replenish and fertilize it. However, if the crops are cut to feed animals and the manure is burnt as fuel, the soil will have no way of replenishing itself, and decreases in fertility.

He further stressed that, sometimes land owners make changes in the way they use the land in an attempt to make the land more productive, but often these changes damage the land and actually make it less productive.

Osibanjo (2009) observed that global and national environmental problems and human development activities have increased by leaps and bounds in the last century, albeit to improve the lives of billions of people, but at the same time, unintentionally produced adverse ecosystem changes, which have taken the planet earth to the edge of massive wave of species extinction and further threatening our own well-being. According to the Millennium Ecosystem Assessment Report (2005) natural resources depletion, pollution and environmental degradation constitute a significant barrier to the achievement of the Millennium Development Goals to reduce poverty, hunger and diseases in Nigeria and other developing countries. More vividly is the continuing deterioration of the environment, the depletion of the stratospheric ozone layer, loss of biological diversity, real threats of climate change/global warming and the plethora of hazards to the environment, which are all traceable to unsustainable pathways of the past and present as mapped by human ecological footprints.

Environmental problems, therefore, manifest as a result of different land use activities of man to earn his living and his livelihood. In the urban land use, deforestation has become a peculiar problem in Nigeria and South-South Region of the country in particular, which results from uncontrolled logging and tree felling, for the purpose of urban development. In many parts of the southern states of Nigeria, this goes with its loss of precious biological diversity. World Bank Report (2005) stated that, it is often the people living in degraded environments, which are responsible for the damage done to their environment. It was further stressed that the damage is often as a result of underlying social and economic problems.

Poverty is said to be a major contributing factor to land degradation as it forces millions of people to destroy the resources that are around them in order to survive. Poor people often do not have access to the best land, leaving them to depend on the most fragile areas and resources. Thus, their situation may mean that they have no other choice other than to use what resources are available to those, even if this result in the degradation of the land.

The basic cause of urban flooding is man's modification of the basin network and channels characteristics during the process of settlement on the particular flood plain (Adeleke, 1978). Natural surfaces are replaced by more impermeable roads and concrete, which have very low infiltration capacity. The hydrological consequences of this is that water, which should normally infiltrate into the ground or be intercepted by vegetation and then delay for some time, before running, would be immediately available for runoff. This considerably decreases the lag time between rainfall and storm water and increase the runoff with concomitant increase in peak discharge and total volume runoff (Adeleke, 1978).

Another problem is the isolation of environmental laws from development programs and policies of a state, faults the implementation strategy or techniques used in the development of environmental activities, coupled with the inadequate penalties for violation of environmental laws, as

well as the non-involvement of citizens in the formulation and execution of the laws.

AIM AND OBJECTIVES OF THE STUDY

The main aim of this study is to examine the mechanism responsible for the spatial compliance and negligence of environmental laws in the south-south region of Nigeria. The specific objectives of this study were to:

- i. identify the remote causes and problems of road transportation land use pattern in the study area
- ii. examine the existing road transportation land use pattern within the study area, and compare the level of compliance with the master plan.
- iii. recommend possible remedial measures on environmental problems which emanates from the negligence of environmental laws, as well as strengthen the existing environmental laws in the study area.

THE STUDY AREA

Nigeria is the most populous country in Africa (Juang, 2008). The United Nations estimated that the population in 2009 was at 154, 729,000 distributed as 51.7% rural and 48.3% urban, and with a population density of 167.5 people per square kilometer. The National Population Commission (2006) released the most recent census result in Nigeria and gave a population figure of 140,003,542. The only breakdown available was by gender: males numbered 71,709 859, while females 68, 293,683 (National Bureau of Statistics, 2006).

The South-South Region of Nigeria is made up of six states; these are Edo, Delta, Bayelsa, Rivers, Akwa-Ibom and Cross River States. The South-South Region of Nigeria is an oil-rich region, and has been the centre of international controversy over devastating environmental pollution.

The South-South Region of Nigeria, which stretches for nearly 110 miles (176.99km) from North to South and spread along the coast for about 160 miles (257.44km), (Rosenberg, 2011). Within the Delta, the river breaks up into an intricate network of channels called rivers. The Nun River is regarded as the direct continuation of the river.

The South-South Region of Nigeria is a low-lying region, through which the waters of the Niger River drain into the Gulf of Guinea. Characteristic landforms in this region include oxbow lakes, river meander belts (Niger Delta, 2011), and prominent levees. Large fresh water swamps give way to brackish mangrove thickets near the sea-coast.

1.5 THEORETICAL FRAMEWORK / LITERATURE REVIEW

The concept of Environmental Regulation by United States Environmental Protection Agency (USEPA) (2000) is equally applicable to this study. The concept of Environmental Regulation Propounded by the United States Environmental Protection Agency (USEPA) states that environmental regulations are rules and requirements that generally spelt-out, the ethics and ethos, principles, practices and procedures that guides the actions of man in our environment.

Thus, environmental regulations cover the following:

- a. Pollution control: regulating how much pollution (chemicals or other undesirable materials such as "heat", "suspended particulates") a facility releases.

- b. Conservation management: maintaining health of ecosystems, protecting land, and assuring diversity of species etc.
- c. Environmental management of land resources.

Pollution refers to undesirable outputs or byproducts being released into the environment. Chemical compounds are a common form of pollution, but pollution also includes things like: waste heat (e.g., discharging heated water into a river), or suspended particulates (e.g., creating a lot of airborne dust). Even harmless compounds like CO₂ can be considered pollution, depending on the effect on the environment (e.g. CO₂ contributes to global warming).

Who Regulates Environmental Pollution Control?

There are major and minor players in the regulatory world. Here are those we call the major players:

- i. The federal agency that regulates pollution control is the Federal Ministry of Environment.
- ii. In addition, each state has its own environmental agency, that may enforce standards that are a compliment to or even stricter than the federal standards. In some cases, a state will also be the one to enforce the national regulations: if the Federal Ministry of Environment agrees that their program is strong enough, it will "delegate" the federal program to them.
- iii. Finally, regional and or metropolitan agencies are also common, particularly for air quality management and sewer management.

Other Players to Keep in Mind

- a) Occupational Safety and Health Agency (OSHA) are a key federal agency for workers safety and health regulation, since workers' health can be affected by many of the same compounds that are regulated by the Federal Ministry of Environment. This, OSHA regulation overlaps with environmental regulations.
- b) Other federal agencies, including the Department of Transportation and the Waste Management Board (e.g. covering the transportation of hazardous materials), and the United States (US) Army Core of Engineers (COE) (e.g., covering the dredging and filling of wetlands).
- c) Finally, community groups are another set of players. While community groups have no direct regulatory authority, citizens do have the right under several laws to sue, if a facility isn't following the regulations. Community groups also have general influence on how your business is regulated.

Osawe and Ibebunjo (2010) defined environment as the entirety of the factors that surround and affect a living entity within their natural habitats in an interaction process. These factors may be living organisms (biotic factors) man, especially or non-living elements (abiotic factors).

Osawe and Ibebunjo (2010) further sub-divided the non-living factors into physical-sub-factor, such as temperature, natural resources, rainfall, edaphic (soil), ocean currents, etc., and man-made sub-factors such as economic, socio-political, greed, scientific inventions etc. They further noted that in most

cases, a combination of the two sets of factors will determine the ever-changing environment.

Akinbode (2002) stated that the environment is the totality of the places and the surroundings, in which we live, work and interact with other people in our cultural, religious, political and socio-economic activities for self fulfillment and the advancement of our communities, societies and nations. In general, the environment is the most precious asset that we own, share and use together with other people for mutual benefits and enhanced welfare of the society at large. The environment refers to all the conditions and objects that surrounds man.

Narayanan (2009) noted that environment is the aggregate of all those things and set of conditions, which directly or indirectly influence not only the life of organisms but also the communities at a particular place. Environmental laws in Nigeria, according to United Nations (2009) are a body of rules and regulations, which have as their object or effect, the protection of the environment from pollution and the wasteful depletion of natural resources and ensure sustainable development.

Abegunde et al (2007) opined that environmental laws have played significant roles and will continue to play active roles on environmental issues. In addition to its traditional roles in the formulation of national and international policies on the environment, it has helped in translating concrete, actionable instruments and translating scientific information on the environment into obligatory norms and rules. Osifeso (1999) stated that environmental laws helped to focus attention on the existence of global environmental problems and the need for international solutions to these problems. It has also played pioneering roles in the formulation of legal principles (e.g. the sustainable development and the precautionary principle) which become the basis for world environmental order (Osifeso, 1999).

RESEARCH METHODOLOGY

Research Design

The research design for this study will be based on careful administration of questionnaires, physical survey and gathering, analysis and application of facts in order to achieve the stated objectives and to test the acceptability or otherwise of the hypotheses stated in this study.

Data Type and Sources

Primary data

A total number of one thousand eight hundred (1800) questionnaires were administered in this research; three hundred (300) questionnaire to each of the six states and one hundred (100) questionnaires to each of the three (3) randomly selected Local Government Areas within the six states in the study area, which were on the and one thousand seven hundred and twenty eight (1728) questionnaires were retrieved from the field, making it 96% retrieval rate.

A 49-item Questionnaire were administered to elicit useful information from categories of respondents on environmental problems which emanate from the building of houses on erosion and flood prone areas, extraction of crude oil by oil companies, existing road transportation land use pattern, as well as health hazards which emanate from waste dumpsites in the study area.

The total population of each of the selected Local Government Areas from the sixteen Senatorial Districts in the South-South Region of Nigeria was randomly selected. Members of Staff in the Ministries of Environment, Works and Transport, Waste Management Board, Oil Companies, Town Planning Offices and residents in the study area were the targeted group for the study.

The data which were obtained in the study area were subjected to statistical analysis using descriptive and inferential statistical tools and these include the use of tables, charts, and graphs, while the Student's t-test, Analysis of Variance and Spearman Rank Correlation Co-efficient were used as inferential statistical tools to test the stated hypotheses.

RESULTS AND DISCUSSIONS

This section presents the results of the data analysis in Environmental Laws in Nigeria: Negligence and Compliance on Road Transportation Land Use Planning Pattern in the South-South Region of Nigeria. Furthermore, it deals with the research findings and discussion of results.

Table 1 shows that 20.8% of the respondents stated that the resultant effect of flooding and erosion menace in their area was slow vehicular movement/traffic jam, 22.6% of the respondents stated increased accident rate, 16.0% of the respondents observed collapsed buildings & other infrastructural facilities, while 40.6% of the respondents observed lack of access to other environment/areas. The implication of this is that, the major effect of flooding and erosion menace in the study area was poor access to neighbouring towns/areas.

Table 2 shows that 13.2% of the respondents strongly agreed that the existing road transportation land use pattern in their area was in conformity with the urban master plan, 19.4% of the respondents agreed, 20.7% of the respondents strongly disagreed and 46.7% of the respondents equally disagreed with the assertion. The implication of this is that the inconformity of road transportation land use pattern with the urban master plan partly accounts for the causes of flooding and erosion problems in the study area.

Table 3 shows that 28.0% of the respondents strongly agreed that the road transportation land use in their area were in a deplorable condition, 37.1% of the respondents equally agreed, 17.0% of the respondents strongly disagreed, while 17.9% of the respondents disagreed. This suggests that majority of the road transportation land-use in the area were in a deplorable condition and as such should be given adequate attention.

Table 4 shows that 36.3% of the respondents strongly agreed that flooding and erosion features affects their road transportation land-use in the area, 18.4% equally agreed, 13.4% strongly disagreed and 31.9% disagreed. This suggests that majority of the road transportation land-uses in the study area were affected by the problems of flooding and erosion, as a result of non-compliance with the modern methods of good road construction.

Table 5 shows that 48.4% of the respondents strongly agreed that the adoption of urban master plan for the construction of road networks in the area will bring about the needed solution to the problems of flooding and erosion on road networks in the area, 20.3% of the respondents equally agreed, while 17.9% of the respondents strongly disagreed and 13.4% of the respondents also disagreed.

Table 1. Resultant Effects of Flooding and Erosion Menace in the Study Area

	Frequency	Percentage
Slow vehicular movement/traffic jam	360	20.8
Accident	390	22.6
Collapse buildings & other infrastructural facilities	276	16.0
Lack of access to other environment/areas	702	40.6
Total	1728	100.0

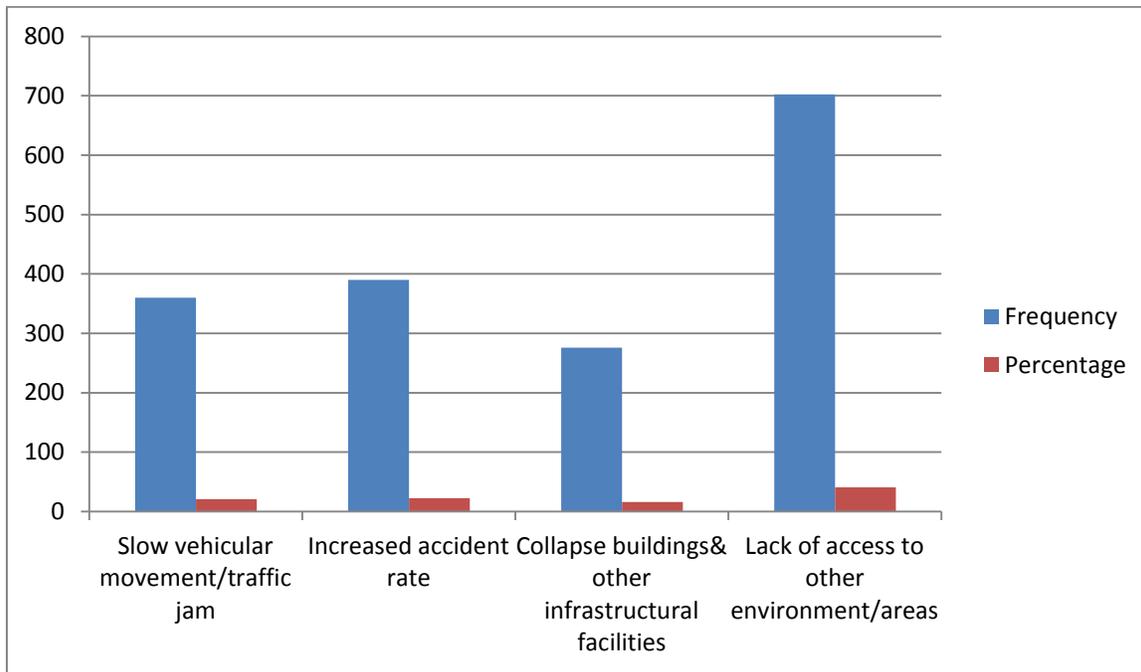


Table 2. Existing Road Transportation Land Use Pattern in Conformity with the Urban Master Plan

	Frequency	Percentage
Strongly Agreed	228	13.2
Agreed	336	19.4
Strongly Disagreed	357	20.7
Disagreed	807	46.7
Total	1728	100.0

Table 3. Deplorable Condition of Road Transportation Networks in the Area

	Frequency	Percentage
Strongly Agreed	483	28.0
Agreed	642	37.1
Strongly Disagreed	294	17.0
Disagreed	309	17.9
Total	1728	100.0

Table 4. Road Transportation Land-use affected by Flooding and Erosion

	Frequency	Percentage
Strongly Agreed	231	36.3
Agreed	627	18.4
Strongly Disagreed	318	13.4
Disagreed	552	31.9
Total	1728	100.0

Table 5. Adoption of Urban Master Plan for the Construction of Road Networks in the Area

	Frequency	Percentage
Strongly Agreed	231	48.4
Agreed	837	20.3
Strongly Disagreed	309	17.9
Disagreed	351	13.4
Total	1728	100.0

This suggests that there was the need for the road transportation land use pattern in the area to be constructed in line with the urban master plan to solve the problems of road transportation land uses in the study area.

Physical Survey Analysis

The physical survey of some randomly selected areas within the study was carried-out to obtain and physically observe the level of compliance and non-compliance of environmental laws in the building of houses on erosion and flood prone areas, problems of flooding and erosion on the existing road transportation land use pattern within the study area and the level of compliance with the urban master plan, the environmental problems which emanates from the non-compliance of environmental laws through the extraction of crude oil by the oil companies and assess waste dumpsites in the study area and the impacts of their health hazards on the immediate environment and the following observations were noted.

Earth Roads Affected by Flooding and Erosion

It was discovered during the physical survey of some of the streets among the Local Government Areas randomly selected (Abak, Ibiono-Ibom, Ekeremor, Brass, Ikom, Ogoja, Burutu, Udu, Egor, Igueben, Bonny and Eleme Local Government Areas) within the study area, some of the roads surveyed were found to be in a dilapidated condition, in-which, the earth roads or untarred roads were covered with flooding and erosion features, setting-in to obstruct free flow of vehicles and pedestrian movement in the areas. This resulted from the non-compliance of environmental laws and deviation from the urban master plan in the study area.

Building of Houses on Erosion and Flood Prone Areas

It was equally discovered in the study area that several houses/buildings have been abandoned due to the problems of erosion and flooding. Some of the houses were already submerging, covered with grasses and almost in unrecoverable condition. Traces of rill and gully erosion were seen as leading routes to the buildings. These were as a result of non-compliance of environmental laws, such as wrong planning, none or poor construction of drainage channels along the road network, building of houses on natural routes or route channels and building of houses on floodable areas.

Road Transport Networks Affected by Flooding and Erosion Problems Due to Non-Compliance of Environmental Laws

The survey of some of the road transport networks in the study area revealed that, some of the road transport networks have been abandoned due to the unbearable condition of the roads. The roads were abandoned as a result of the volume of flooding and erosion problems, which emanated as a result of the non-compliance of environmental laws with the urban master plan in the construction of road networks in the area.

The problems of flooding and erosion in the area equally results to congestion of road traffic and abandoned vehicles along the road, due to dilapidation of the road transport network caused by large volume of flooding and erosion features.

The condition of some of the road transport routes in the area were found to be in a deplorable condition, when and where transporters on buses, cars and motorcycles struggled to ply the roads, due to the volume of flooding and erosion that has dilapidated the road transport networks, wasting man hours and causing break down of vehicles, as well as undue expansion of the road networks, as a result of flooding and erosion; wearing and tearing away, the initial structure of the road networks.



Plate 1.1: Showing Earth Road Affected by Flooding and Erosion.
Source: Fieldwork Report, 2012.



Plate 1.2: Showing Earth Road Affected by Flooding and Erosion
Source: Fieldwork Report, 2012.



Plate 1.3: Showing road transport network degraded by the problems of indiscriminate dumping of waste materials, flooding and erosion.
Source: Fieldwork Report, 2012.



Plate 1.4: Showing Road Traffic Congestion, Due to the Problems of Flooding and Erosion in Edo State.
Source: Fieldwork Report, 2012.



Plate 1.5: Showing a Stranded Vehicle at the Middle of a Road, Struggling in the Pool of Flooding and Erosion in Delta State.
Source: Fieldwork Report, 2012.



Plate 1.6: Showing an Abandoned Public Transport Bus along the Road; Due to the Problems of Flooding and Erosion in Benin City, Edo State.
Source: Fieldwork Report, 2012.

RECOMMENDATIONS

In view of the findings in this study, it will be of great benefits, if the following recommendations are given serious attention and consideration. In our pursuit of a new mechanism for environmental protection, we must strive towards achieving a balance in the benefits we derive from activities that cause environmental pollution and the resultant harm.

There is need for the formulation and enforcement of regulations for soil and water conservation, especially in erosion and flood prone areas.

There is need for the construction of more drainage channels and the rehabilitation of old drainage system within the study area.

There is therefore, the need for coordination between the various relevant expertise located in the Agencies of Government to be strengthened and improved upon for effective networking and integrated approach in the provision of more drainage system, control and management of flooding and erosion problems in the area.

There is need for the government to provide funds to redress the already initiated and future problems of flooding and erosion in the study area.

At present, all levels of Government should place more emphasis on the construction of flood and erosion control works, whenever there is flood and erosion menace. Although, the incorporation of the biological aspect with that of flooding and erosion control measures has proved to be somewhat effective, a more sustainable control of flooding and erosion problem should be advocated.

The Town Planning Authority should be active in discouraging property construction on areas liable to flooding, and quickly respond timely to flooding and erosion hazards in the study area, as this would help in reducing the incidence of flooding and erosion.

Most of the untarred roads, if not all, should be properly tarred in the study area, so as to avert the prevailing problems of flooding in the area.

It was equally revealed that the proper land use and planning, and the enforcement of proper refuse disposal system in the area will help in controlling the problem of flooding in the study area.

Road networks should be constructed parallel to the main slope direction or to stream channel in order to prevent the creation of new water channels against the general landscape trend, which usually end up in gullies that cut off the roads.

Roads should be designed and constructed in such a way as to ensure that sidewalks are paved or tarred. The paved roads must be made to merge with carefully designed drainage lines (gutters).

CONCLUSION

Our long range plans must encompass other areas of our national life, such as policy formulations, enforcement of regulations, enforcement mechanism should involve visits to facilities for compliance monitoring, facilities work through, finding-out challenges for non-compliance, examining monitoring records where they exist, undertaking in-situ environmental monitoring of some parameters and discussing findings with the faculty manager and proffer appropriate advice, that could promote compliance or issue warning, where non-compliance is persistent.

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