THE IMPACTS OF DEFORESTATION IN KARSHI DEVELOPMENT AREA OF THE FEDERAL CAPITAL TERRITORY ABUJA

BY

ODANAOGUN OLATAYO ELIJAH
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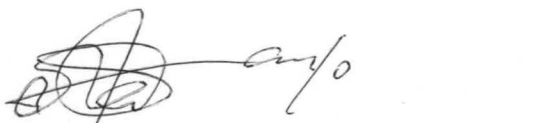
DEDICATION

Firstly, this project is dedicated to **ALMIGHTY GOD,** who in his steadfastness and loving kindness saw me through the programme and to my dear wife **TAIWO ODANAOGUN**, my precious children **OLABISI GRACE ODANAOGUN AND OLA-OLUWA FOLASADE GOODNESS ODANAOGUN** and my boss **ADAMU ABUBAKAR, MFCT DEPUTY DIRECTOR (AGRIC)** for their impacts toward the success of this course.

DECLARATION

I hereby declare that this is my original work and has not been presented elsewhere for the award of a Post-Graduate Diploma at any University or any institution of higher learning.



15/11/2003

ODANAOGUN, OLATAYO ELIJAH **DATE**

CERTIFICATION

This is to certify that this project was carried out and presented by Odanaogun Olatayo Elijah of the Department of Geography, Post Graduate School, Federal University of Technology, Minna Niger State.

Odanaogun Olatayo Elijah
Student

15/11/2003
Date

Dr. S. Akinyeye
Project Supervisor

8/12/03
Date

Dr. A. E. Odafen
Head of Department

8/12/03
Date

Prof. Abalaka
Dean Post Graduate School

Date

Prof. A. A. Ariyo
External Examiner

Date

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ABSTRACT

The problems of deforestation, which we thought is the problem of local people later becomes both national and global level problems, and it has threatened the habitat lives and deteriorate the environment.

The sources of data for this research work include the questionnaire, reconnaissance surveys, in depth study of research works of reputable authors.

The objective of this research work is to carefully identify the causes of deforestation and the impact in the study area and provide practicable solutions.

In addition, the major causes of deforestation in the study area is not only attributed to cultivation of land in order to boost food production but also it is due to construction activities in the area such as roads building etc. Population growth is also one of the factors as well as poverty and lack of government enforcement on deforestation.

However, in order to reduce this threatening problems imposed as a result of deforestation in the study area, the Government has to thoroughly involve in tree planting campaign programme, and assisting financially to eradicate poverty through employment. More personnel need to be put in place to encourage the tree planting at the grassroots and to further assist in enforcing government policy on deforestation. Also, an individual is to be permitted to conserve forest.

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CHAPTER ONE

1.0 INTRODUCTION

Environment can be expressed as condition surroundings a particular place that affect the quality of life, plants, animals and human beings or study of hydrosphere, atmosphere, biosphere and lithosphere. While deforestation can be define as indiscriminate felling of trees or wanton exploitation or clearance of the forest in a particular geographical location without any effort at replacing it.

The increase in population in the Federal Capital Territory, Karshi Development Area causes indiscriminate felling of trees as a result of the people resettlement, man also find it more and more convenient to fell enough trees for fire wood, clearance of forest for agricultural practice, site for building houses, others include infrastructure, market and timber exploitation.

Without doubt deforestation enhances soil degradation resulting in erosion and exposing large tracts of land to direct solar radiation reducing its productive capacity sharply.

As a regard to the above reasons, there must be a check for further deterioration of biosphere and lithosphere in the Federal Capital Territory of Karshi Development Area

1.1 STATEMENT OF THE PROBLEM

Some of the afforestation region has been turn to be commercial outlet, Religion praying ground while others include market and farming area. Consequently, the large tract of lands has being rendered unusable as a result of development of road construction accommodation and other infrastructures.

The Federal Capital Territory of Karshi Development Area's vegetation has been directly or indirectly reduced not only in the materials in which the plants and animals live (oxygen) but also in the beauty of the environment drastically.

However, direct effect of sunshine led to wind erosion and flood this contributed to loss in soil fertility, loss of bio-diversity and land degradation.

It is worth noting that urgent need has to be taken to address the problem of deforestation in the study area in such a way that development have to go on without damage to the environment.

1.2 AIMS AND OBJECTIVE

The main aim and objective of my study will be to investigate the effects of deforestation in the Federal Capital Territory, Karshi Development Area.

Specific Objective include: -

i) To assess the impacts of deforestation in the Federal Capital Territory, Karshi Development Area Abuja.

ii) To formulate policy measure based on the research finding.

iii) To stimulate awareness on the effectiveness of tree planting programme

1.3 SCOPE AND LIMITATION

The scope of this project is limited to Federal Capital Territory Karshi Development Area. This consisting of Kugbo, Karu, Jikwoyi, Orozo and Karshi.

For clarity purpose, questionnaire will be given out to private firm and government to fill in order to know the depth and width of deforestation, effort of the authority to put an end to environmental hazardous in Federal Capital Territory of Karshi Development Area.

1.4 JUSTIFICATION

The rate at which vegetation are being exploited in Federal Capital Territory at Karshi Development Area cannot be overemphasized.

The clearing for infrastructure, agriculture, accommodation, religion praying ground market include timbers exploitation, collection of fire wood and burning of the forest

Development has contributed immensely to destruction of vegetation in Federal Capital Territory Karshi Development Area, It therefore become necessary to find solutions or remedies to this environmental problem. In addition, this project will not only address solution to the problem viewed as a result of deforestation in Federal Capital Territory Karshi Development Area but will also provide guidelines for smooth biosphere and total restoration of natural forest, landscape and beauty scenery of Federal Capital Territory Karshi Development Area for the present and future generation.

1.5.0 STUDY AREA

The study area is Karshi Development Area located in the Eastern part of the Federal Capital Territory. The land consist of Kugbo, Karu, Jikwoyi, Orozo and Karshi. The Karshi Development Area is one of the satellite towns that support the population of Federal Capital Territory

due to the closeness with the Federal Capital Territory it render services such as agriculture, marketing such as bread-bakery, timber etc.

1.5.1 PHYSIOGRAPHY

Federal Capital Territory Karshi Development Area was in a valley area in view of the fact that rocks and hills are surrounding it. The rocks are Igneous, metamorphic and sedimentary interwoven the hills. Moreover, the land was good for farming activities, as it comprises of clay, loamy and sandy soil.

1.5.2 CLIMATE

The temperature and humidity of the study area varies from one season to another and average climate change for the period of 10 years as shown in Table 1.1 below range between 25^0C – 36^0C. The lowest temperature was 24.38^0C while the highest was 35.84^0C Relative Humidity varies between 34% to 85% and in July it has almost 85% which is the highest while the lowest humidity was 39.5% in January.

1.5.3 RAINFALL ONSET, CESSATION INTENSITY AND LENGTH OF THE RAINY SEASON (LRS)

Onset is the commencement of the raining season while the number of rain-days is defined as a day when 5.2 mm of rain is

recorded. This quantity is a measure of spread of rains during particular seasons and during active seasons.

The effective Length of the Rainy Season (LRS) of a particular place can be determined by deducting from the total date of rainfall Cessation from the rainfall Onset (Cessation – Onset).

The rate at which falling rain accumulated on the surface per unit time is defined as its intensity. It has to do with the volume of water that may collect at the surface as standing pools of water or as surface run-off. It is the quantity that will indicate the possibility of soil erosion or flooding depending on the timescale. For example, it has been found that the fall of 50mm of rain in half an hour or less will result in flash flood or severe erosion in flat or steep-slope terrain, respectively.

At the same time cessation means the termination of the effective rainy season. It does not imply the last day rain fell, but rainfall can no more be assured.

FROM 1992 – 2002

The table1.1 shows the average record of rainfall from 1992 to 2002.

RCES	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
FALL	NIL	3.36	24.36	65,66	154.2	185.8	224.9	311.12	246.26	141.44	152.1	2.62
TIVE DITY	39.4	34.7	46.59	62.78	74.22	78.08	84.2	85.40	83.15	78.83	58.1	46.2
- RE	27.22	28.18	33.96	30.23	27.84	25.84	25.0	24.38	5.31	26.28	25.89	25.22

Sources: MFCT Abuja

increasing trend toward integrating livestock, fisheries and crops. Agro-forestry constitutes an important part of the cropping system in many Karshi Development area of the Federal Capital Territory.

Fish Farming/Aquaculture: The study area is favourably support the Fish farming production; fin and shellfish species. The broad habitats, with their species diversity, include freshwater. In addition fish is also produce in aquaculture system. **Aquaculture system** is defined as the man's attempt through input of labour and energy to improve the yield of fishery and other useful aquatic organisms by deliberate manipulation in a more or less controlled environment. This occurs in a variety of structures and enclosure such as ponds, reservoir, tanks, cages etc. The aim was to increase the fish production far above the level, which would be produced naturally per annum.

Livestock: The study area had been known as the best place that support the livestock production especially cattle rearing in large herds in semi intensively while the sheep and goat, including poultry were reared semi intensively in small numbers averaging about 10 hens and 4 sheep and goats in rural households.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Deforestation Globally

The repute scientists and higher academicians have been making scientific and theoretical statements concerning the interaction of man with the environment.

Environ 2000, remarked that man has been interacting with the biosphere since his arrival on earth.

Besides Environ 2002, said US National Cancer Institute approved that out of the 3,000 plants identified by having anti-cancer properties, 70% are from the tropical forests, which are now threatened by extinction.

Environ 2000 added that by the invention of fire, man was able to destroyed more forest, thereby succeeding in greatly adjusting the pattern of funnel and floral distribution on earth as well as reducing the complexity of the ecosystem.

The industrial revolution of the 18^{th} and 19^{th} centuries opened a new view in the relationship between man and the environment

following the revolution machinery (e.g. bulldozers) and Chemicals (e.g.herbicides) that enabled him to exert rather undue influence on the environment (Environ 2000).

Over-cultivation, overgrazing, deforestation weaken the land, allowing no margin when drought arrives. Thus high human pressure will continue during the drought, leading ultimately to even greater and more visible damage to the land than the deaths of large numbers of animals. (Grainger 1986).

However, Oni (1999) described that Deforestation linked to Desertification.

In addition, United Nations Environment Program (UNEP) said that the effect of population growth on the environment can be seen in the desertification process. Deforestation and over-cultivation, for example, leads to declining soil fertility and falling crop yields, crusting of exposed top-soil by rain and sun, increased surface runoff and accompanying erosion of soil and gullying, wind erosion encroachment of sand dunes on arable and destruction of crops by dust bearing winds .

Increased population and demand for animal products lead to overgrazing, herd sizes increase and put pressure on grazing lands,

which at the same time, are decreasing because of over-cultivation, for example, in northern Iraq, rangelands carry 11 million sheep which according to Grainger is four times the land's sustainable capacity (Grainger 1986).

Grainger added that overgrazing has several effects, it

- Causes a decline in annual production of pasture vegetation and palatable grass species
- Replaces perennials with annual species that are short-lived and do not hold soil against erosion.
- Compacts soil under trampling hoofs at water holes and in wet season pastures
- Destabilizes dunes when crest vegetation is eaten
- Causes a decline in livestock health and consequently fall in milk and meat production.

The United Nations Environment Program (UNEP) estimated that the world will lose one third of its arable lands through deforestation, over-cultivation and overgrazing, to densification by the end of the century.

About 12 percent of India suffers from the threat desertification in the arid northwest and in a broad semi-arid zone from the Punjab in the

northwest to Tamil Nadu in the south. There are an estimated 1.7million square kilometers of arid land in India and Pakistan (Grainger 1986).

The Vanguard 29th March 1986 stated that Deforestation leading to flooding, also causes an increase in the concentration of salts in estuarine and other flood plan areas

Ambassador Hassan Adamu, Nigeria's former Minister of Environment was quoted by Guardian 8/12/2002 that 2 billion Naira has been earmarked for afforestation project that year; according to him, the Ministry of Environment will focus on the integration of environment into economic development, reviewing and strengthening existing laws, carrying out campaigns for environment.

While New Nigerian News paper on 09/03/2000 reported that President Olusegun Obasanjo planted a tree to commemorate his visit to India. This is part of the efforts to create awareness and tackle deforestation.

It is not an overstatement to say that the last 100 years had been the most destructive century in human history. Apart from the numerous wars fought, the period witnessed mindless destruction of our natural environment at a rate our ancestors could not have possibly dream of. For instance, we have in the last five decades, mindlessly

damaged or transformed our surroundings in the name of industrialization or urbanization in the process, we have ploughed, cleared, reclaimed built on and polluted our forest. African is said to have lost 45% of its total estimated original forests forever.

Sources: Newswatch 2002.

2.2 Deforestation in Nigeria

It has been estimated that upwards of 50% of the northern tier of states in the North West and North East geopolitical zones are affected by desertification. These states, with a population of about 30 million people account for about 43% of the country's total land area (Gadzama 2002).

In addition the next line of buffer states 10 to 15% of the land area has been influenced by desertification (Gadzama 2002).

Balogun (2002) remarked that the agricultural revolution in Nigeria eventually ushered in land clearing, overgrazing and uncontrolled lumbering, which were partly responsible for desertification of some areas.

In northern Nigeria desertification continues to seriously threaten flora and fauna. Natural habitats have all but disappeared.

Impacts of deforestation on Nigeria are many and the socio-economic impact could be disastrous. It has a severe impact on food security, livelihood, economic, social and cultural activities all resulting in a low food security.

Another impact include the migration from rural to urban causing disruption to families as man abandon their households in search of employment elsewhere.

Over fifty five years ago, in northern Nigeria there were certain signs of encroachment of the Sahara . . . It arises from a variety of causes overtaxing the land by demanding too much and giving little, over-population with inferior cattle, forest fires, unregulated tree felling inferior methods of agriculture, sitting of waterways and the washing away of alluvial soil.

Sources: Nigeria Environmental Analysis Final Report April 2002.

These distressing circumstances can be seen in places like the road to Zaria, where even the main road itself is threatened . . . We see little evidence of it where traditional agricultural practices are maintained, difficulties arise from new developments such as new methods of cultivation for cash crops, especially those involving mechanized equipment , Longtau 1999

2.3 Deforestation in the Federal Capital Territory

Abuja is the Federal Capital City of Nigeria having a landmass of about 8,000km^2. The population is estimated at 30 million people for the year 2000 with great potential for rapid growth

The main vegetation of the Federal Capital Territory is Guinea Savanna. As a result, almost all crops that can be grown in the southern forest belt and the northern grassland belt can be grown in the Territory. Example of trees found here are locust bean, shea butter, teak, mango, orange, palm, and Gmelina, Others include Bamboo, acacia.

However, the original owner of the territory Gwaris used the area for farming, hunting and lumbering of firewood for domestic purpose.

Following the establishment of Federal Capital Territory the rate of deforestation continue that these renewable resources are being used at rates that exceed the speed at which they can be regenerated.

Below is the land use analysis hectares of land that will be cleared for one reason or the other as the Abuja is being developed.

Table 2.1 shows Abuja land use analysis/hectares and percentage

SNO	CATEGORY OF LAND USE	LAND BUDGET	PERCENTAGE
1	Government Activity	500ha	1.96
2	Services	891ha	3.49
3	Residential	12,486ha	48.97
4	Light Industries	920ha	3.61
5	Infrastructures	1,840ha	7.22
6	Commercial	561ha	2.20
7	Open Space & Recreational Facilities	8,300ha	32.55
	Total Hectares	**25,498ha**	**100**

Source: Abuja Hand Book, 1998

According to Savannah Conservation Foundation Director, he said humans have cleared forests throughout history. A few thousand years ago, rainforest covered about 14% of the land's surface, whereas today they cover only 7% .

He further said that those who can take good care of the Savanna are those who live in it and are directly affected by the depletion of the ecosystem".

The impact of the Forestation in Karshi Development Area of Federal Capital Territory include the followings: -

1. The vegetation has been directly or indirectly reduce not only in the materials in which the plants and animals live e.g. Oxygen but also the beauty of the environment drastically.
2. The large tract of lands has being rendered unusable as a result of development of road construction, accommodation and other infrastructure.
3. However, bush burning and agricultural system expose land to erosion, flood, and soil degradation.
4. Direct effect of sun, led to wind erosion and desertification declining soil fertility loss of bio-diversity.

Source: Abuja Hand Book, 1998

It is worth noting that urgent need has to be taken to address the problem of deforestation in Karshi Development Area from further deterioration in such a way that development will continue without causes any damage to the environment.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 SOURCES OF DATA

To find out the causes and impact of deforestation in Karshi Development Area of the Federal Capital Territory Abuja. The opinion of the citizen living in Karshi, Karu, Kugbo, Orozo and Jikwoyi area were sorted out randomly through the questionnaire that were administered to them, at the same time personal interview and information from the Ministry of Federal Capital Territory served as both primary and secondary data collection respectively.

3.2 DATA COLLECTION

Data were collected from responses received from people who filled and returned their questionnaire forms and information; data were also obtained from personal discussion from individuals, Newspapers, various textbooks. The following methods were used in collecting data among the people living in the study area: -

(a) Personal/Oral Interview.

(b) Self-Administered Questionnaire.

(c) In-depth Study of Research Work.

(d) Reconnaissance Survey

3.2.1 Personal/Oral Interview: The researcher asked respondent questions from the questionnaire and responses were recorded. These serve as Primary Data.

3.2.2 Self-Administered Questionnaire: The total of one hundred (100) questionnaires were randomly distributed to the people living in the study area, after 5 days of completion, only 93 was duely filled and received back while the total of 7 were not returned. Table 4.1 shows the category of people answerable to the questionnaire.

3.2.3 In-depth Study of Research Work: Deforestation has a global perspective; therefore, relevant textbooks and journal that dwell in deforestation were extracted. However, data were also collected from the Ministry of Federal Capital Territory. This serve as secondary source of data collection

3.2.4 Reconnaissance Survey

The Reconnaissance Survey comprises of both the physical observation and assessment of man's physical activities on the environment such as cultivation and construction activities. It involved watching, evaluating the extent of deforestation and carrying out an inventory of the damage done to the environment.

In addition, the reconnaissance survey not only gives information, but also provides an opportunity to know the problems created by deforestation.

Pictures were also taken to serve as proofs of damages done to the environment due to deforestation in the study area.

3.3 DATA ANALYSIS

The data collected were analyzed. This data were further presented inform of tables and were used for various discussion of the result which were based on frequency percentage method. Graphs and other statistical data were also used to enhance the method adopted.

This method of analysis was chosen to ensure simplicity, reliability, easy understanding and presentable.

Generally the clients had responded to the interview as shown below:

Table 3.1 shows the Villages of the client responded to the questionnaire

Village	**Questionnaire Distributed**	**Questionnaire Returned**	**Percentage of Questionnaire Returned (%)**
Jikowyi	20	18	19.4
Orozo	20	20	21.5
Karu	20	20	21.5
Karshi	20	15	16.1
Kugbo	20	20	21.5
Total	**100**	**93**	**100**

SOURCE: COMPILED BY THE RESEACHER

CHAPTER FOUR

4.1 RESULT OF ANALYSIS ON THE IMPACT OF DEFORESTATION IN THE STUDY AREA.

Category of people answerable to the questionnaire

Table 4.1 shows the category of workers responded to the questionnaire

Category of People	Questionnaire Returned	Percentage of Questionnaire Returned
Farmers	30	32.2
Civil Servant	25	26.8
Construction Workers	18	19.4
Traders	10	10.8
Unskilled	10	10.8
Total	**93**	**100%**

SOURCE: COMPILED BY THE RESEACHER

The table 4.1 above reveals that Farmers in the study area accounted for about 32.2% of the interviewed, this marks the highest category of people in the study area. This are followed by Civil Servant, Construction Workers, Traders and Unskilled Labour with 26.8, 19.4,10.8 and 10.8 respectively. This implies that most people engaged

in the study area were directly involving in deforestation for farming activities, building construction or firewood.

How many hectares of farmland do you put into use?

Table 4.2 shows how many hectares of farmland cultivated in a year

Options	Frequency	Percentage
1 – 5 hectares	74	80
6 – 10 hectares	10	11
11 – 25 hectare	4	4
26 – 45 hectares	3	3
46 and above	2	2

SOURCE: COMPILED BY THE RESEACHER

The total of 80% of the respondents put 1 – 5 hectares into use and majority of them are practicing farming on part time bases. These however, was followed by 11% of the respondents that cultivates 6 – 10 hectares of land with the aid of modern farming techniques (Mechanization), while the total of 3% and 2% are practicing an irrigation system of farming in other to provide Karshi Area Development of Federal Capital Territory with food security throughout the season. Besides, this disclosed the amount of vegetation being deforested in the study area yearly.

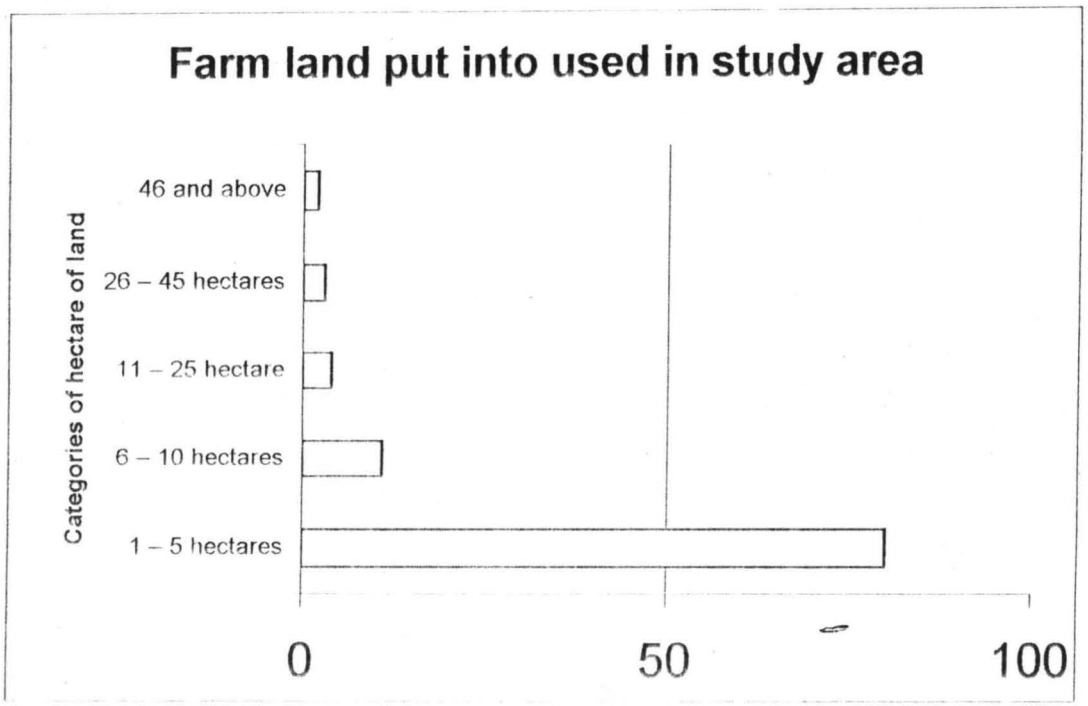


Fig 4:1 This bar chart shows an illustration of hectares of farm land being deforested yearly in the study area.

What type of agricultural activities do you engage in

Table 4.3 shows the type of agricultural activities in the study area.

Options	Frequency	Percentage
Crop Production	40	43
Animal Production	15	16
Fishery production	10	11
Others	28	30
Total	93	100

SOURCE: COMPILED BY THE RESEACHER

The agricultural activities of the respondents include Crop production, which covered 43% of the farmland in the study area; Animal production and Fisheries production are 16% and 11%

respectively, Also, Others involved 30% of the people who practice mixed farming system. These shows that people were engaged in deforestation through crop production, animal production or mixed farming system.

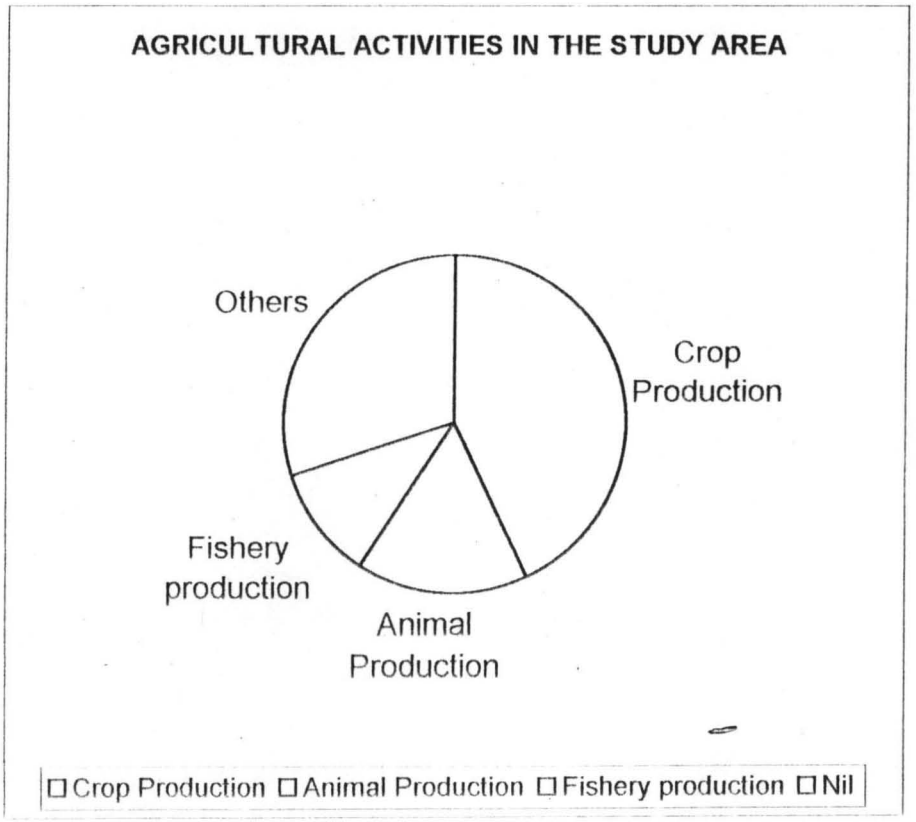


Fig 4.2: The Pie Chart showed above determine the type of farming practice in the study area and since the Crop Production carried the largest size most people involve in deforestation.

Types of grazing methods

Table 4.4 shows the type of grazing methods adopted in the study area

Options	Frequency	Percentage
Zero Grazing	15	16
Free Grazing	70	75
Semi Intensive	8	9
Total	93	100

SOURCE: COMPILED BY THE RESEACHER

From the table 4.4 above, 75% of the respondents in the study area adopts a free grazing method in feeding their animals. This method is the release of animals mostly cows to grazing freely which is one of the causes of deforestation in the Study area, Also, 16% of the respondents adopted zero-grazing; this is method of feeding and keeping of animals indoors or in a restricted area while the semi-intensive is the combination of both methods of grazing.

What do you use for cooking/baking

Table 4.5 shows the source of energy used at home

Options	Frequency	Percentage
Firewood	65	70
Gas	6	6
Kerosene	20	22
Electricity	2	2
Total	**93**	**100**

SOURCE: COMPILED BY THE RESEACHER

From the table 4.5 above, 70% of the respondents make use of fuel wood as source of energy consumption for their domestic use, while 6% of the respondent uses gas. The percentage of people that make use of kerosene, electricity for cooking are 22% and 2 % respectively. Apart from the gas and kerosene which were very scarce in the area, majority of the people in the study area cannot avoid these exorbitant price, hence they go for firewood this contributed immensely to deforestation in the study area.

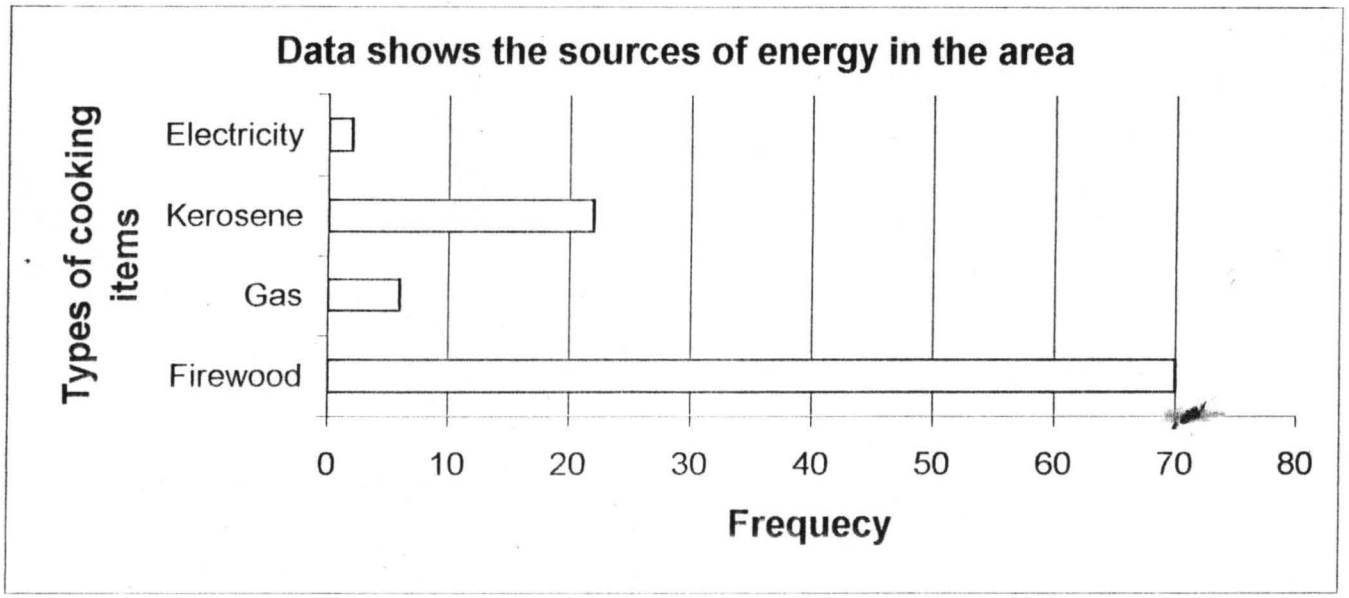


Fig 4.3: The bar chart above shows the sources of energy in the study area and since the firewood is the largest source of energy, consequently leads to deforestation.

OTHER THINGS TIMBERS HARVESTED USED FOR

Table 4.6 shows the category of other things timbers used for in the study area

Options	Frequency	Percentage
Infrastructural Activities	10	11%
Furniture	20	22%
Yam Stake	63	67%
TOTAL	**93**	**100%**

SOURCE: COMPILED BY THE RESEACHER

The table 4.6 above indicates the percentage of other thing the timber are used for in the study area. However, the Infrastructural activity takes 11%, while furniture making carried 22%. Yam stake, firewood and others 67%. The higher demand for furniture and other infrastructural activities increases the rate of deforestation in the study area.

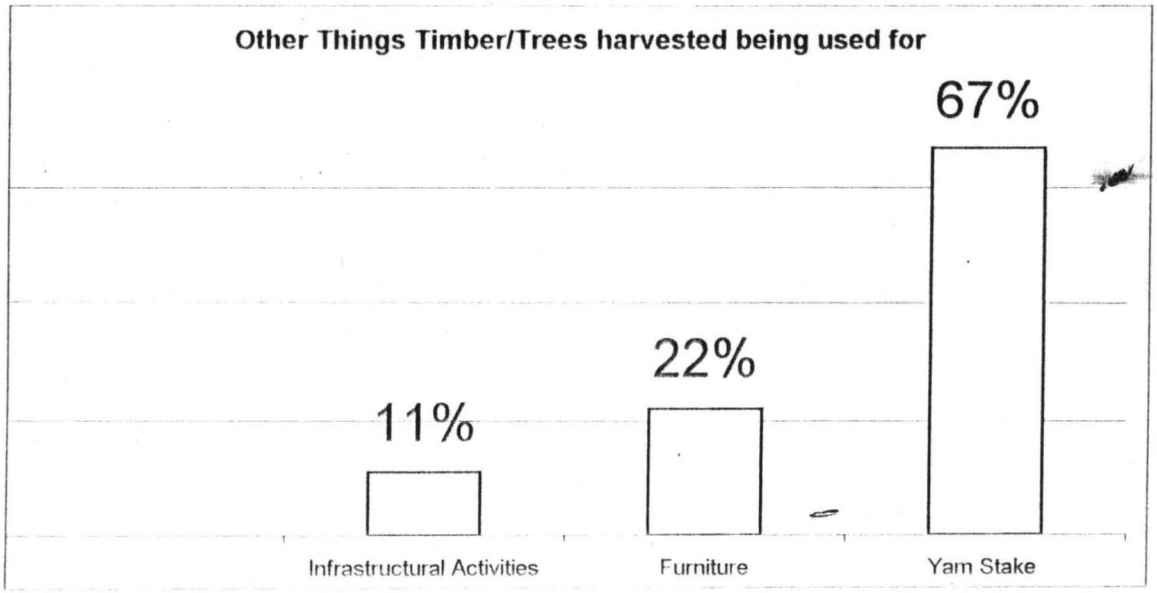


Fig 4.4: Using histogram chart above to show other things timber/tree used for in the study area include the yam stake which carried the highest percentage in the study area these implies that almost everybody involve in deforestation.

Do you think increase in population in Karshi Development Area contributed to deforestation?

Table 4.7 shows how the respondents replied that increase in population growth causes deforestation in the study area

Options	Frequency	Percentage
Yes	83	89%
No	10	11%
Total	**93**	**100%**

SOURCE: COMPILED BY THE RESEACHER

Almost 89% of the respondents agreed that growth in population in the Karshi Development Area has contributed immensely to deforestation in the area while only 11% agreed that increase in population does not have any depressing relation to deforestation.

Do you landscape your building?

Table 4.8 shows the Population of the people landscape their buildings

Options	Frequency	Percentage
Yes	8	9
No	85	91
Total	**93**	**100**

SOURCE: COMPILED BY THE RESEACHER

Only 9% of the respondents beautify their buildings with scenery, flowers and trees while 91% did not landscape their building with trees and flowers. This implies that we deforest without replacement.

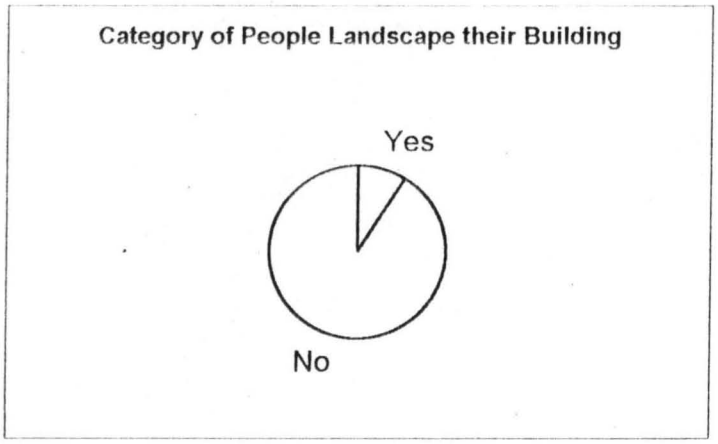


Fig 4.5 Illustration show the pie chart degree of people that landscape their building

Have you ever planted tree in replace of the one harvested?

Table 4.9 shows responses of the people concerning reaforestation

Options	**Frequency**	**Percentage**
Yes	15	16
No	78	84
Total	**93**	**100**

SOURCE: COMPILED BY THE RESEACHER

The total of 84% said that they have never planted trees in replace of the one harvested while only 16% claimed that they have an orchard where Mango, Cocoa, Orange etc. were planted and always replace them when necessary.

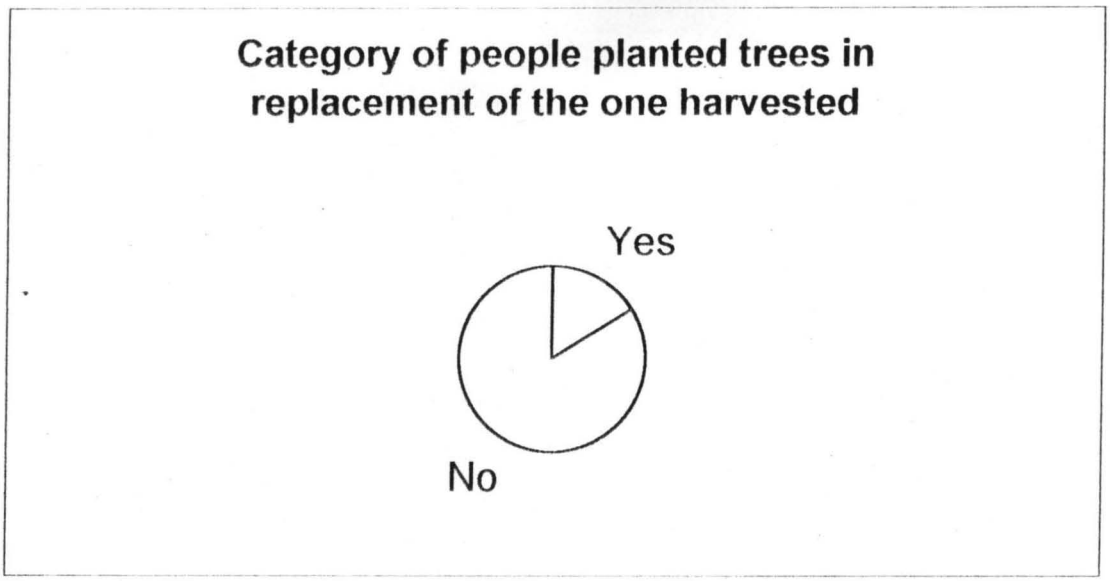


Fig 4.6: This illustration shows the degree of people who planted trees in replacement of the one harvested using Pie Chart and the implication shows that largest land were expose to land degradation as the majority did not practice trees planting principles of cut one plants three.

What do you think is responsible for degrading the soil?

Table 4.10 shows the causes of soil deteriorated

Options	**Frequency**	**Percentage**
Destruction of vegetation	74	80%
Continuous Cropping	19	20%
Total	**93**	**100**

SOURCE: COMPILED BY THE RESEACHER

Total of 80% of respondents believed that destruction of the vegetation leds into soil deterioration, declined and degraded, while 20% believed that is through continuous cropping.

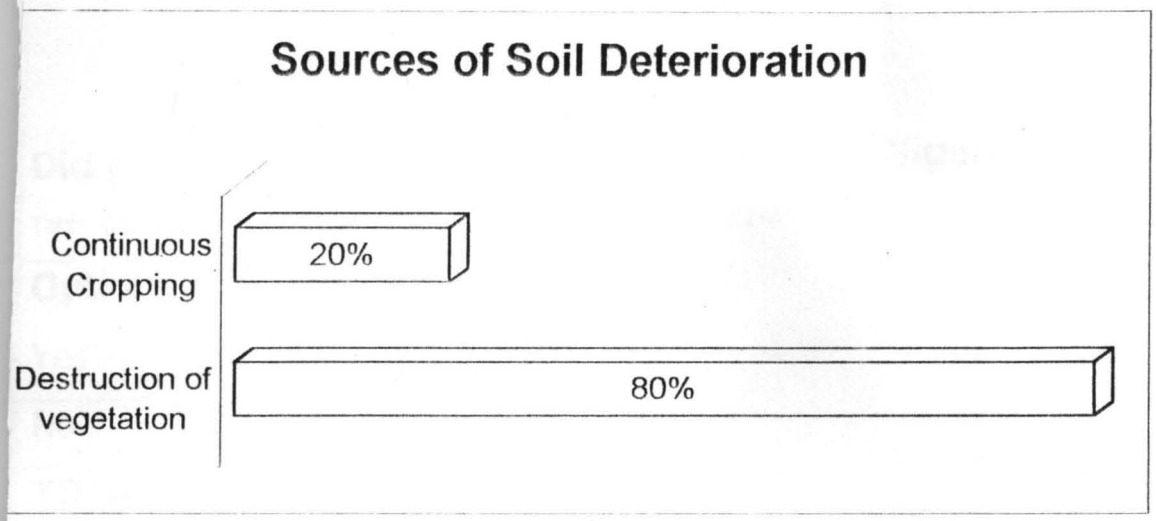


Fig 4.7 The illustration above shows sources of different soil degradation using bar chart. Since a lot of infrastructural activities were carried out in the study area this implies that as development continues a lot of damages is being done on the land.

In your own view do you think the government policy concerning deforestation stand

Table 4.11 shows the government policy concerning deforestation

Options	Frequency	Percentage
Yes	33	35
No	60	65
Total	**93**	**100%**

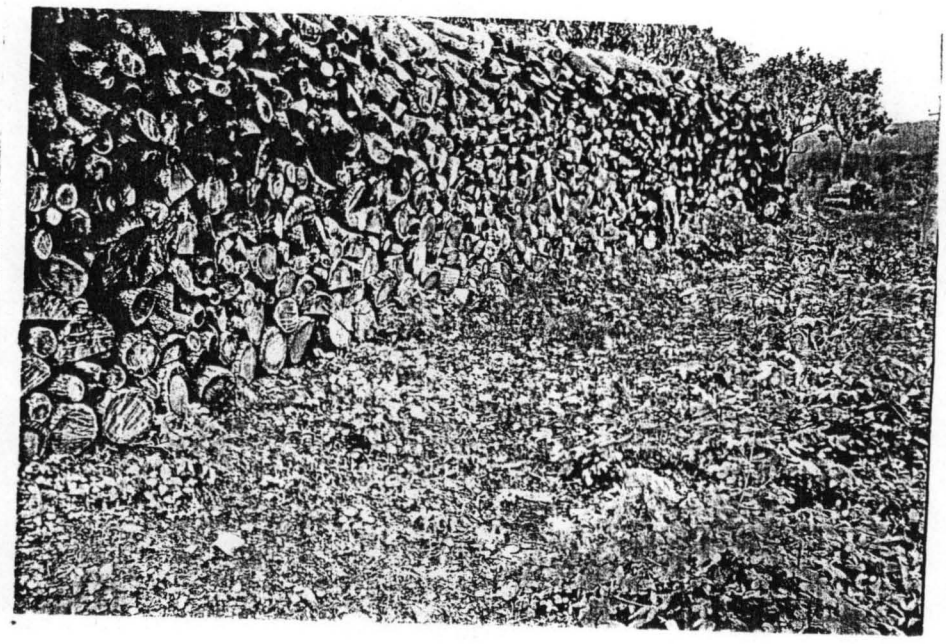
SOURCE: COMPILED BY THE RESEACHER

The 35% of the respondents sees government policy concerning deforestation is extremely good but the implementation were partially executed while 65% of the respondents agreed that government policy was highly good but the implementation of the policy was very poor.

pastoral farming and housing. Others amenities includes infrastructures
as schools, hospitals, recreational facilities, modern market, sewage
ems and pipe-borne water etc.

3 Demand for Firewood

Factor accelerating deforestation in the study area includes the demand
irewood as the cheapest sources of energy for domestic purposes. The
s of the firewood were being harvested and utilized as charcoal or as
ing fuel. This was due to poverty level of the people coupled with the
ity and high cost of kerosene and gas respectively.



4.1: Shows the fire-wood assemble at Orozo, Karshi Development Area of
l Capital Territory Abuja

4.2.4 Land Clearance for Cultivation and Bush Burning

Forest degradation by bush fires accelerates deforestation in the study area. Some of the fires were started accidentally, either by playing with fire, or throwing cigarettes rubbish tips into the bush, or started deliberately as a result of farming or as a result of man searching for bush meat.

4.2.5 Demand for Timber Activities

However, as a result of development the high rate of which the people demand for planks in making books, construction companies and electrification purpose cannot be overemphasized. These has contributed immensely in deforest the vegetation.

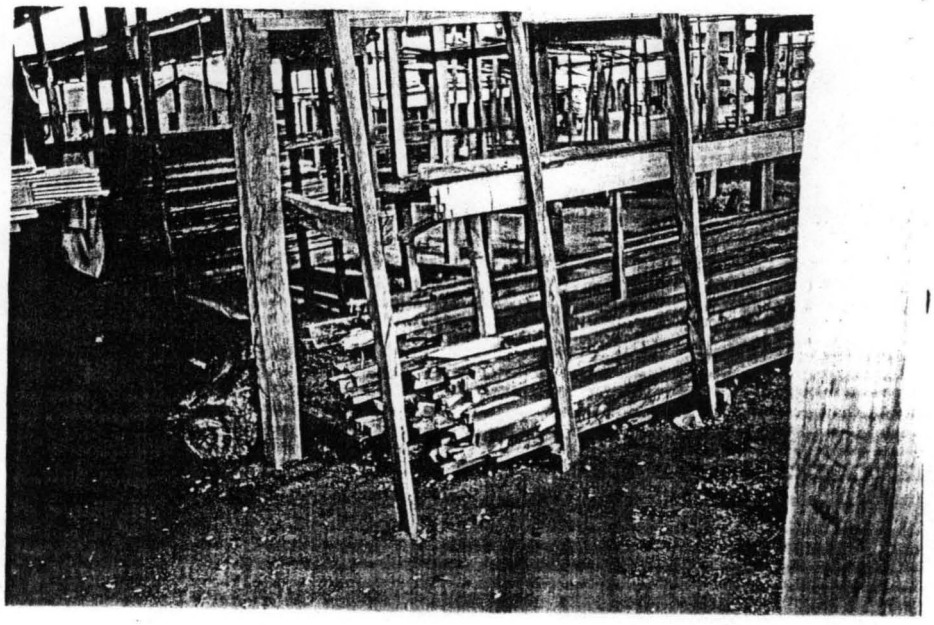


Plate 4.2: Lumbering activities at Timber Shed Kugbo

4.3. The impacts of Deforestation in Karshi Development Area of the Federal Capital Territory

Having known the causes of deforestation in the area of study. The impacts of deforestation in the area include the followings: -

- It has led to loss of bio-diversity in the area.
- Land degradation
- Reduction in Flora and Fauna
- Loss of both animal tree species in the forest
- Increased Flooding and Soil Erosion
- Drought Man and Desertification
- Decline in Soil Fertility
- Distortion of Ecological Balance and Lowering of Water Table

4.3.1 Increased Flooding and Soil Erosion

Due to deforestation problems the precipitation intensity has direct effect on the soil by erodibility especially in a slope soil stratification and infiltration rate of soil erosion, where it is severe it turn out to be flooding. Flood moves very fast on the surface of the earth since nothing to stop them. Hence, removal of trees indiscriminately leads to intensification of the flood condition and the effect led to loss of life and properties.

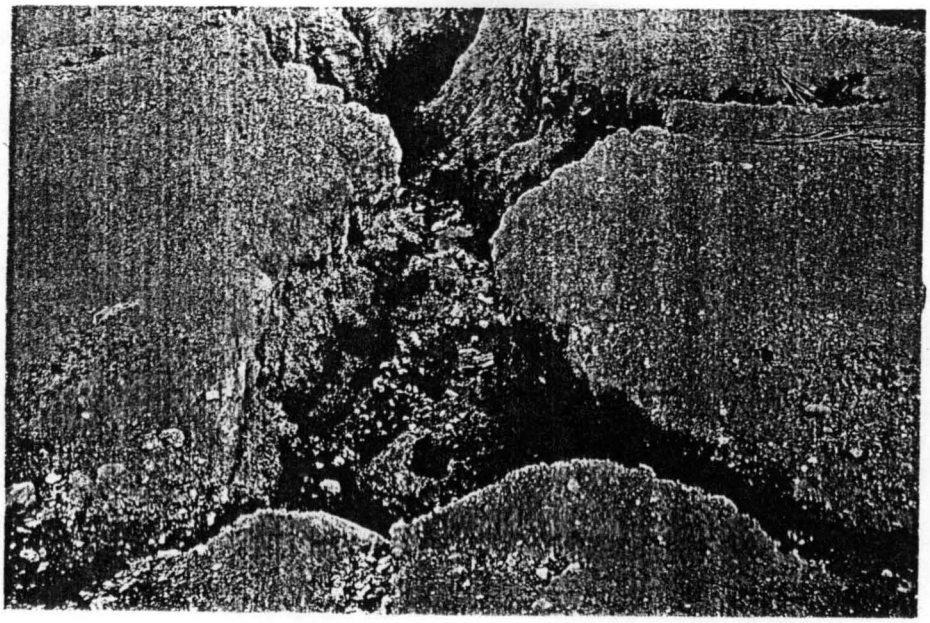


Plate 4:3 shows the impact of deforestation at Karu, this part has gradually turning into Gully Erosion.

4.3.2 **Distortion of Ecological Balance and Lowering of Water Table**

As a result of deforestation coupled with activities of water speculators, the water table in the area has been lowered thereby contributing to the increased in the depth of aquifers, systematic dryness of rivers, streams and resultant low yield of agricultural products. Hence, we can conclude that deforestation does not only lower the water table, it equally affect the productivity potentials of plants, eliminates plant species and species habitat of the area.

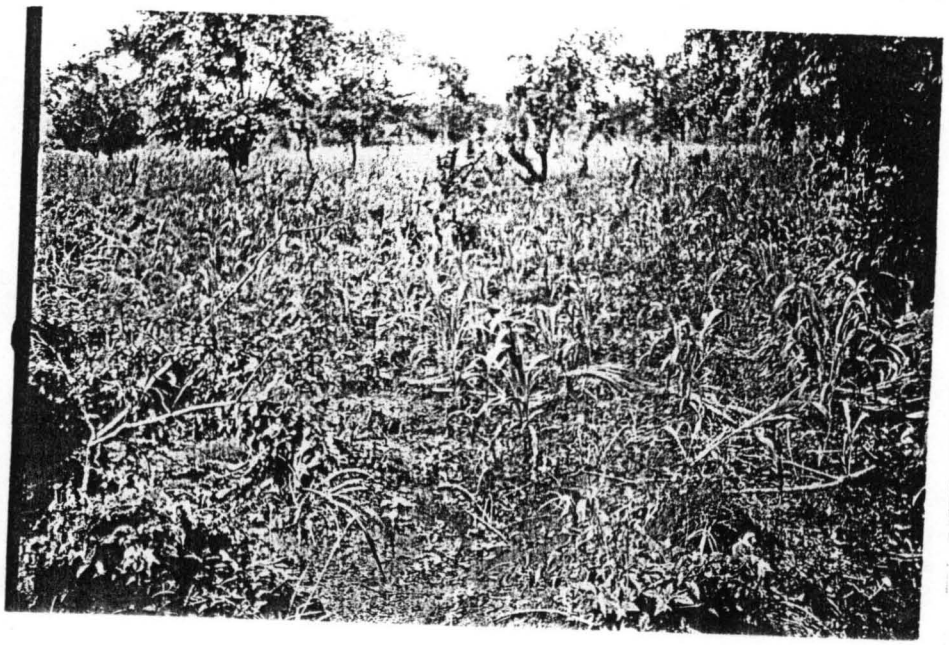


Plate 4.4: Show the rate at which the land declined as a result of deforestation and lower the plant productivities.

4.3.3 **Drought Man and Desertification**

Human interaction activities has contributed to effects of drought as factors of desertification, the most important ones include the Forest depletion through fuelwood, Deterioration of rangelands due to over grazing and Deterioration of water resources through over ambition and uncoordinated harnessing of water. Nigeria trees planting campaigns as presently been implemented cannot succeed in recovering lost lands due to lack of adequate eco-climatic data and poor enforcement of the policy

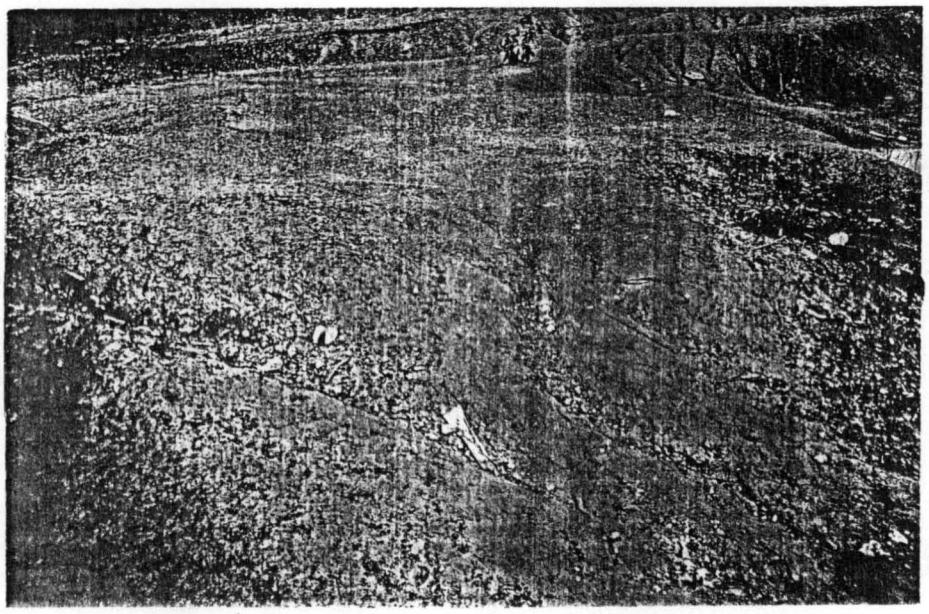


Plate 4.5: Shows an illustration of part of Jikwoyi Area turning into desert as a result of deforestation

Other impacts include increase in deforestation equal to increase in the carbon dioxide and reduction in oxygen contents in the atmosphere, affecting temperature changes and leads to strain and dead of human and animals.

Summarily, it is worth saying that the cumulative implication of deforestation includes: - disaster, severe sickness, damage of crop and home and increase poverty level.

CHAPTER FIVE

5.1 SUMMARY, CONCLUSION AND RECOMMENDATION

Environment can be expressed as abode for human life. It comprises (Biosphere, Atmosphere, Lithosphere and Hydrosphere. While deforestation wa indiscriminate felling of trees forest in a particular geographical location withou any effort to replacing them.

Without doubt deforestation enhances soil degradation resulting i erosion and exposing large tracts of land to direct solar radiation reducing its productive capacity sharply.

The major causes of soil degradation do not occur as a result of the waste disposal from industrial activities alone but also the physical removal of the woodland through the natural and man activities.

A natural activities occurrence in difference form and pattern. These include the strong wind of El Nino coupled effect with ENSO, The distribution and kind of the energy transformation in the atmosphere is decisive. The weather condition is altered over an extensive area, depending on whether cooler or warmer, wet or dry air masses prevail. Wide parts of the world experience persistent weather anomalies, which in extreme cases lead also to catastrophic events such as heat waves and cold spells, droughts or floods. Drought is lack of precipitation that means shortage of water in the soil for

plant growth, development and maturity. This normally results from either late onset of rains or earlier than normal cessation dates of rains or shorter than usual length of rainy season; leading to high temperature, low humidity, all of which increase the loss of moisture by evapotranspiration and causes natural deforestation in the study area.

CONCLUSION

Other causes of deforestation includes increase in population, man also find it more convenient to fell trees for fire wood, clearance of forest for agricultural practice, site for building houses, others include infrastructure, market and timber exploitation without accurate preparation to replacement. Likewise, many industrial and personal building infrastructures were unobserving to beautify our building environment with series of scenery flowers.

Due to the above reasons, there must be a check for further deterioration of the environment not only in the study area but also in the developing and developed country.

4. Existing protected areas need further strengthening and capacity building to ensure adequate safeguarding. More training to be given to the forester officers at a regular basis, protection and community liaison work and they need to be better equipped to carry out their roles.

5. There is a need to create an awareness and advocacy activities in order to strengthened public awareness campaigns needs to be strongly encouraged to help in developing further efforts for improved biodiversity and forest conservation in Nigeria.

6. Forestry Education needs to be strengthened and better integrated into primary and secondary school curricula, and better teaching materials need to be developed and more teachers trained in these subjects, while the forestry clubs to be introduce right from the primary school to Tertiary institution.

7. More work is needed to identify information gaps and to gather baseline information on the species and ecosystems of Nigeria. Nigeria-wide faunal and floral surveys by specialists that go out to the field, then scientifically documenting and preserve their findings are especially needed at this time. Linkage Centres and other clearing-house institutions should be strengthened in their roles of collecting,

coordinating and analyzing biodiversity information and in disseminating this information to those who can use this information to make better natural resources management decision.

Others includes

8. Makes the landscaping of building and industrial area mandatory.
9. All the company that involve in deforestation should also involved in re-afforestation projects including the lumbering businessmen.
10. Government should embark upon using sources of energy to by making Electricity a constant issue so that people will have access to electric cooker, stove or gas.
11. Government should provide fund for research institutions to engage in research on environmental standard and social welfare of the people.
12. The chains of poverty should be broken while the government bridge up the gap between the rich and the poor this fastened the relationship between the people and the agencies in preserve the environment this may be done by making the alternative to some of the items we used trees for or by making some of the items cheaper such as stove, kerosene, gas, or by making them available or at a subsidize rate.
13. Bush burning should be discouraged with law enforcement and reducing overgrazing of the animals.

14. Satellite observation should be employed because it involve monitorin of climatic elements that have hither to been hard to observed e.g. E Nino and Endo

REFEFERENCE

Abuja Handbook 1998: The Abuja Master Plan

Adefolalu : Material for PGD
Geography Dept of Federal University of Technology

Akinyeye P. S: Materials for PGD Fresh Water Resources
Geography Dept of Federal University of Technology
Minna.

Baba J.M. : Materials for PGD
Geography Dept of Federal University of Technology

Bala Mohammed, P.A. Galadima, D. O. Oni Consultant Environ 2000

Bala M.O, P.A. Galadima, D. O. Oni Consultant Environ 2002

Balogun L. M Sustainable Development of the Biosphere Human and Global Change Activities Cambridge University Press pp474-4902002

D. O. Oni : Paper deliver on Environmental Day 2000

Gadzama F. A 2002 Deforestation in Tropical Forest and Climate Region

Grainger S.A, Alan F.O Desertification (London, Earthscan, 1986)

Guardian : Daily Newspaper 8/12/2002

Internet: Sands of Change, UNEP Environment Brief No. 2 Nairobi, no date

Newswatch: Magazine March 2002

Vanguard: Daily Newspaper 29th March 1986

Longtau 1999: Drought in Nigeria National Report on the Implementation of the United Nations Convention to Combat Desertification in those Countries Experiencing Drought and or Desertification Particularly in Africa, Lagos, Nigeria.

METHODOLOGY

This questioner is in fulfillment of Post Graduate Diploma kindly assist in answering the questions correctly.

1. Date:.....
2. Name:.....
3. Marital Status:.....
4. Your Career:.....
5. Educational Background
   a) Primary Education
   b) Adult Education
   c) Secondary Education
   d) Post Education
   e) Illiterate
6. What type of Agricultural activity do you engage in
   (a) Crop Production
   (c) Animal Production
   (d) Fishery Production
   (e) Nil
7. How did you obtain the land?
   a) Family holding
   b) Purchased

c) On rent

d) Individual holding

e) On lease

8. What type of grazing method do you use?

a) Zero Grazing

b Free Grazing

c) Semi Intensive

8. How many hectares of farmland do you put into use?

a) 1 – 5 hectares

b) 6 – 10 hectares

c) 11 – 25 hectares

d) 26 – 45 hectares

e) 46 and above

9. Do you normally burn the vegetation for one reason or the other

(a) Yes (b) No

10. What do you use for cooking/baking?

a) Firewood

b) Kerosene

c) Gas

d) Electricity

e) All of the above

11. Do you pay for felling trees

(a) Yes (b) No

12. How many trees do you cut in a trip

(a) Less than three (b) More than three

13. Did you landscape your building?

(a) Yes (b) No

14 Do you buy fuel wood

(a) Yes (b) No

15. Do you fell tree for medical purpose

(a) Yes (b) No

16. Do you receive permission before harvesting of timber from farm?

(a) Yes (b) No

17. What is the timber you harvested used for?

(a) Firewood (b) Infrastructure

18 Have you ever planted a tree in replace of the one harvested?

(a) Yes (b) No

19 How many tree do you plant monthly

(a) more than two (b) Nil

20. Do you know deforestation lead to desertification

(a) Yes (b) No

21 Do you think increase in population in Karshi Development Area contributed to deforestation

(a) Yes (b) No

22 What do you think is responsible for degrading the soil

a. Destruction of Vegetation

b. Continuous Cropping

23. Did government policy concerning deforestation stand?

(a) Yes (b) No

24. Did you assess the tree planting campaign in Nigeria as a failure?

(a) Yes (b) No