

EFFECTS OF DESERTIFICATION IN RURAL AREA OF GEIDAM LOCAL GOVERNMENT AREA, YOBE STATE.**Musa Saleh Joji****UNIVERSITY OF MAIDUGURI****ABSTRACT**

Desertification is one of the most pressing environmental problems of our present time. The term is used to describe a form of land degradation in arid, semi arid and dry sub humid areas. The phenomenon occurs on all continents of the world except Antarctica, mostly affecting poor and developing countries. The main aim of the research work was to assess the level of the environmental impact of desertification in the rural areas of Geidam local government area of Yobe State. This was achieved by determining how the climatic conditions and type and amount of vegetation of the study area has changed over time, establishing the rate of deterioration of water supply as a result of the onset of desertification, assessing the level of the economic situation caused by the impending disaster and examining how desertification has changed the population pattern of the study area over the years. Various human activities which include deforestation, overgrazing, bush burning, miss use of water resources among others have combined with the natural environment to cause the problem. The vulnerability of the environment to desertification has been exacerbated by the rapid expansion of the Sahel coming in from the North. Different materials were used to obtain information about climate parameters, past histories, population etc. All these data were appropriately referenced. Questionnaire method of obtaining information was employed. This was assisted by personal interviews which involved asking questions from the questionnaire. Descriptive and inferential statistical analysis analysis was used to get frequency distribution tables and percentages to determine the variables. The result of the research work revealed that the environment has been affected in various ways including the increase in the average temperature of the environment which has caused a drop in animal production and increased the frequency of illnesses amongst both humans and animals. Furthermore, rainfall has drastically reduced over the years and cultivation of crops is now very difficult. This has been compounded by the fact that vast land areas have been converted to sand dunes where the fertility of the soils are nothing but unproductive. All these effects have been further aggravated by the lack of vegetation which has been as a result of the indiscriminate felling of trees mostly for fuel. Populations are drastically reducing especially in those areas where the situation is very severe due to the lack of means to earn a living. These large migrations are bringing about increased conflicts and are making it hard for security to be enforced. Despite all these problems the environment has faced, it is still never too late if proper and effective control and preventive measures will be taken, but the war is far from over.

Keyword: Deforestation, Overgrazing, Bush burning, Sand dunes, Questionnaire

INTRODUCTION

Desertification affects the livelihoods of millions of human beings. According to a United Nations report, more than one billion people across the globe are affected by drought and desertification. This population, which constitutes about a quarter of the planet is facing major problems such as soil degradation and vegetation loss, leading to the deterioration of arable lands and eventually resulting into chronic food insecurity. Also, the world's drinking water supplies have fallen by almost two thirds since 1950, and every year, 12 million people die as a result of water shortages or contaminated drinking water. This is accompanied by a loss of approximately USD52 billion due to reductions in agricultural production. It is estimated that every year 200,000 km² loses its fertility or sustains degradation and experiences a decline in its productivity world wide as a result of desertification. All these factors combined have led to the attention of several authorities, specialists and researchers all over the world on desertification as the most important natural phenomenon (1). But desertification has a significant relationship with poverty. Recognizing the link between desertification and poverty, the United Nations Convention to combat desertification (UNCCD) stresses the importance of a "bottom-up" approach identifying, implementing, monitoring and evaluating projects that combat desertification and mitigate the effects. The year 2006 was designated as the international year of Deserts and Desertification to provide opportunities to highlight the difficult conditions faced by men and women living in areas affected. Although poverty has a relationship with desertification, it cannot be regarded as the principle cause. Countries in the Middle East for example Saudi Arabia who have very high resource bases are battling with issues of desertification. The dry land occupies approximately 90% of the total area of the Arab world. The relatively small area that receives the most rain is experiencing congestion as the majority of the urban and economic Centres are concentrated in the area which contain forests and is also utilized as fruit farms. This part represents the pillar of the economy particularly in the non oil producing countries and is the source of necessities such as food, fiber, medicine etc. However, these areas are vulnerable to desertification due to the aridity of the Arab countries (2).

In Nigeria, desertification and persistent drought constitute the serious environmental problems facing the northern parts of the country with dire economic consequences facing the entire nation (3). In the desertification map of the world produced by food and Agriculture organization (FAO), the World Meteorological Organization (WMO) and U.N. E.S.C.O, about 15% of Nigeria is prone to desertification. It subsumes both arid and semiarid areas where the evidences of true desertification are showing up on an extensive scale. The geographical location of the country as well as its shape and large size allow it to experience nearly all the different types of weather and climate to be found in the West African sub region. The vegetation varies regionally in consonance with the climatic pattern. Thus, ecologically, the Nigerian landscape encompasses the mangrove swamps and freshwater swamps forest and savanna communities including their montane and submontane varieties: and scrublands characteristic of the semi-arid Sahel zones. The entire semi-arid zone of Nigeria lies approximately between Latitude 11 degrees North and 14 degrees North and is affected by desertification. It has consistently suffered most from all recorded drought episodes in Nigeria's recent history. In some of these areas, shrubs have largely replace grasses or have spread to such an extent that they dominate the flora. Sheet, wind and water erosion have largely denuded the land of vegetation and gullies are present, salinity has reduced crop yields. Nigeria is currently losing about 350,000 square kilometres of its land mass to desert conditions which is advancing southwards at an estimated rate of 0.6km a year (4). The areas of the country that are faced with serious desertification are inhabited by 28 million people and over 58 million livestock. An indisputable fact is that most of the region north of latitude 12 degrees North is heavily prone to ecological degradation. For example, more than 65 percent of Sokoto State is said to be under siege, while about 55 percent of Borno State is afflicted. Sand dunes have been reported to have

invaded vast areas of farmland and swept a whole village of nearly 300 houses out of existence. In the extreme northern part of Borno and Yobe States, communities such as Bulatura, Bukarty Kaska, Toshu, Tubtulova, among others, have been either completely surrounded by sand dunes or are about to be buried by them. A post primary school established some years ago here could not be put to proper use because moving sands make access to it difficult. Also in this state, people have been moving southwards to areas around Gashua, Nguru, Kukuna, monguno, which themselves are within the fragile environment. Fighting against desertification is essential to ensuring long term productivity of inhabited dry lands. Unfortunately, past efforts to combat the ever increasing problem has often failed as a result of which the land degradation problem continues to worsen. Desertification could also be seen as a process whereby the productivity of arid or semi arid land falls by 10% or more (5). Mild desertification is a 10-25% drop in productivity, serious desertification is a 25-50% drop and very serious desertification is a drop of 50% or more.

THE METHODOLOGY OF THE STUDY

Research Design

The study design and methodology adopted involves field survey. Direct choice of questions could not possibly provide enough information required, that is, occasions where details on in-depth information was inevitable. Interviews afford at the research gives the opportunity to pursue matters to their logical ends. Apart from these methods discussed above, direct observation was also an overview. This however, did not prevent the researcher from presenting in the questionnaire such questions that are relevant to this information.(6)

Sources of Data

Both primary and secondary data sources were used

Primary data

The sources of primary data that was used by the researcher include the questionnaire and personal interview. The questionnaire comprises of open and close ended questions, with most questions have options. A total of 100 questionnaires were distributed to the population sizes of each district. Among the questionnaires distributed, 92 were recovered, out of which 2 were invalid.

Personal interviews were also conducted and the responses were recorded.

Secondary source

Secondary source of data include information compiled by others on the subject matter. These include textbooks, magazines, internet, and newspapers in both private and academic libraries.

Method of Data Collection

In this study, simple random sampling was employed; Copies of questionnaires were distributed to respondents in the rural areas of Geidam(7).

Study Population

The population under studied was Geidam local government with the mean population of 157, 295 people.

Sample Population

The samples that represent the population include farmers, cattle reamers, local government official, and youths.

Sampling and Sampling Technique

These involve the selection of a number of study units from the population of Geidam local government area. Geidam is divided into three main districts namely Geidam, Gumsa and Borko districts. The population of the districts was given as 55431, 51243, and 50620 respectively. This indicated that the three districts have similar numbers with respect to their population so equal numbers of sample units was collected from each district. The three (3) districts share a number of 538 localities. A total of 100 questionnaires were distributed evenly between the three districts.

Method of Data Analysis

Data collected was analyzed using of tables, figures and percentages to summarize the response of the respondents.

RESULT AND DISCUSSION

The different status of the respondents is given as follows:

Table 2. Table showing the different categories of respondents and their frequencies.

RESPONDENTS	Frequency in Gumsa district	Frequency in Borko district	Frequency in Geidam district	Total	Percentage
Women	1	1	1	3	3.75
Farmers	3	4	13	20	25
Cattle rearers	6	3	3	12	15
Local officials	8	11	5	24	30
Youths	6	5	7	18	22.5
Others	1	1	1	3	3.75
Total	25	25	30	80	100

Responses obtained from Table 2 above indicate that in all the three districts in which the research work was carried out, the percentage of local government officials and youths was very high compared to farmers and cattle rearers. The response by farmers was particularly low in Gumsa and Borko districts where the physical effects of the desertification are clearly visible.(8) In rural settings, youths and local officials are generally of low number due to the fact that the inhabitants of such areas partake in farming, petty trading and lumbering.

Table 3 Supposed impact faced by the study area

PHENOMENON	FREQUENCY	PERCENTAGE
Desertification	11	13.75
Deforestation	15	18.75
Population	24	30
Industrialization	3	3.75
Economy	2	2.5
Climate change	22	27.5
Others	3	3.75
TOTAL	80	100

From Table three (3) above, it can be clearly observed that majority of the populace (86.25 percent) are not sure about what the change in the state of the environment is. This shows that there is little or no enlightenment about the issue of desertification. Others, (less than 4 percent) believe bush burning and improper forest laws are the cause of the environmental degradation. The dramatic changes to the environment according to 58 percent of the respondents believe to have occurred more than 10 years ago. About 32 percent believe that the changes have occurred a few years ago, and about 9 percent believe that the changes occurred only within the time frame of last year.(9)

The effect of temperature in the rural environments.

Table 4. Effects of the increase in temperature on the study area.

EFFECT	FREQUENCY	PERCENTAGE
Low Rainfall	10	12.5
Low productivity of plants and animals	32	40
Sickness of animals	26	32.5
Migration	09	11.25
Low quality of food	03	3.75
TOTAL	80	100

From the table above, it is seen that the increase in temperature has caused low productivity of plants and animals. Animals are becoming sick and dying due to the excessive heat. Plants usually bear small fruits thereby reducing the quality and quantity of the products. All these are further compounded by the low amount of rainfall the area receives.

SUMMARY, CONCLUSIONS AND RECOMMENDATION.

Summary

This research work focused on the impacts desertification on environment which include accessing the effects desertification on the water supply, rainfall, temperature, vegetation and migration. A total of nine villages were used as the sample audience, which were derived from the three districts of the local government. The research borrowed formulated research materials which were appropriately referenced. Questionnaire was the method involved in collecting the data and simple frequency distribution tables were used for the interpretation. A total of 100 questionnaires were distributed, of which 92 were successfully collected back. The results revealed that there is very little knowledge about desertification. Furthermore, there has been drastic increases in the amounts of temperature, with very low rainfall and almost if not total loss of agricultural lands. These changes have accumulated over the years bringing about the deterioration of the environment to its present state.(10) Frequent migrations from villages to cities are common due to the lack of sustainable means of survival. The whole situation is in a state of dismay. Unless the development and management of the traditional resources in our marginal areas are carefully planned, the type of environmental catastrophes like desertification ravaging some African countries may also occur in Nigeria.

Conclusions

Desertification has many environmental, economic and social consequences. As for the environmental consequences, it is represented by the degradation of plant and animal life, the degradation of soil, pasture and the shrinking of areas viable for agriculture, lack of water resources and deterioration in their quality. It has been noted that the environment has not been severely damaged beyond rehabilitation with the exception of Borko district. Despite the efforts and achievements, so far, the results have yet to match the hopes and aspirations desired in most regions of the local government. In the event of time to come, it is very important that there should be regulations and fiscal measures to guide against degradation of the environment. (11)

Recommendations

Based on the findings of the study, the following recommendations are made:-

- i. Government should encourage afforestation in all that are prone to desertification in order to curtail the impact of climate change.
- ii. There should be public enlightenment programmes on the causes and effects associated with desertification.
- iii. Government should provide alternate and cheaper sources of fuel in order to reduce the pressure on the wood used for fuel.

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