

**DESERTIFICATION AS AN ENVIRONMENTAL
PROBLEM A CASE STUDY OF YAURI LOCAL
GOVERNMENT (EMIRATE)**

BY

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DECLARATION

This project titled "DESERTIFICATION AS AND ENVIRONMENTAL PROBLEM" is my original work, which could not be found elsewhere whether published or unpublished to the best of my knowledge.

However, certain references were made earlier work and writers those who were referred to, were fully acknowledged accordingly.

Therefore I accept full responsibilities of the mistakes, omission that may be found in this thesis.

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APPROVAL

This project work titled desertification as an environmental problem has been carefully supervised, read and approved as having satisfied for the award of post graduate diploma in environmental management.

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DEDICATION

This project work is dedicated to my late father, my mother and the families in general.

ACKNOWLEDGMENT

All praise and thanks is due to Almighty God, who guided and protected me throughout my course of study.

My unreserved and profound appreciation to my initial project supervisor professor D.O. Adeofalu for his good will at a start of this work, wishing him quick recovery on his body as he receives treatment.

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ABSTRACT

Desertification and the persistent elements of desertification constitute the most serious environment problem facing most of the northern part of the country with the economic consequences on the entire nation. The study area (Yauri emirate) is in every year losing some points of its land mass to desert conditions data collection for the research work took about two-three months.

Questionnaires were administered to source for first hand information from people of different skill. The research analysis used in percentages method. Some of the relevant questions that gave correct answers were analyzed using percentage method.

The research established the fact, that desertification is cause by both natural and anthropological process which need to be critically analyzed and tackled every where. Based on the natural factors the finding confirms strong wind and flooding as major causes of desertification in the area.

On the anthropological factors that are contributing to desertification in the area are deforestation, over cultivation, indiscriminate bush burning, population pressure that leading to acquisition of more environmental natural resources, lack of proper awareness about the environment, illiteracy and poverty. In order to severity or contribution to desertification in area is fuel wood consumption as rural energy source.

Appplausive recommendation as creation ways of awareness to people, Practice of re-forestation, the use of legislation to prevent wanton dispersion of general alleviation of poverty as measures to control the potential dangers of the current desertification rate in the study area.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Desertification is land degradation in arid, semi arid and dry sub-humid areas resulting from various factors including climate variations and human activities. The extent and severity of desertification in Nigeria have not been fully established, nor has the rate of progression been properly documented. Nevertheless there is a general consensus that desertification is by far the most pressing environment problem in the dry lands parts of the country.

The visible sign of this phenomenon is the gradual shift in vegetation from grasses, bushes and occasional trees to grass and bushes and in the stages, expansive area of desert like sand. It has been estimated that between 50% and 75% of Bauchi, Borno, Jigawa, Gombe, Kano, Kastina, Kebbi Sokoto, Yobe, Adamawa and Zamfara states in Nigeria are being affected by desertification. These states, with a population of about 29 million people account for about 43% of the countries total land area. In these areas, population pressure, resulting in over grazing and over exploitation of Marginary lands has aggravated desertification and drought. Entire villages and major access roads have been buried under sand dunes in the extreme northern parts of Katsina, Sokoto Jigawa, Borno and Yobe states.

The pressure of the migrating human and livestock populations from these areas are absorbed by pressure points buffer states such as the Federal Capital Territory, Plateau Taraba, Niger, Kwara and Kaduna states. It is reported that these buffer states have about 10-15% of their land area threaten by desertification. This ~~is~~ action leads to an intensified use fragile and marginal ecosystems, resulting in progressive degradation even in years

of normal rainfall. Source (part 1 Article of the convention to combat desertification (CCD)).

The severity of desertification in the dry land of the world prompted the United Nation to adopt a convention to combat desertification (CCD) in 1994. Nigeria ratified it in 1997. As a principal tool for the implementation of the convention parties to the convention are expected to prepare and implement a National Action Programme (NAP).

Nigeria is a large country, with a substantial part of its area extending into the Sudano-Sahalian belt, which together with the neighbouring northern Guinea Savanna constitutes the dry lands of the country. With an estimated population of 113 million, human population pressure on the land particularly in the marginal areas has continue to take its toll on the environment, resulting in desertification.

Desertification is aggravated in the dry lands of the country by increasing human attempts to exploit the resources of the ecological zone in the face of persistent drought. Before now, Nigeria has been tackling the problem of desertification the best way it could, but with little success. It is now obvious that the menace should be addressed in a holistic manner in order to ensure that the dry lands of the country continue to support human and natural resources.

This National Action Plan spelt out critical activities to be undertaken to tackle the menace of desertification in the country. To facilitate a clear understanding of the NAP, an outline of the country's environment is given followed by a description of the extent and severity of desertification in the area. also highlighted are the clear efforts made to combat the menace, and the lessons learnt from such efforts. The NAP itself presented guiding principles, issues, strategies and priority projects. Source (National Action

Programme) (NAP) to combat desertification and mitigate the effects of drought (Dec 2000)

1.2 AIMS AND OBJECTIVES

This research work is aimed at finding out the problem (result) of desertification as well as its causes and evaluating the impact on the physical environment. The project therefore, focuses attention on the environmental implications of desertification and making appropriate recommendations towards minimizing it.

- i. To level the identified causes according to their severity and contribution
- ii. To identify the major causes of desertification in the study area.
- iii. To recommend possible ways of eradicating the problem.

1.3 STATEMENT OF THE PROBLEM

The nature and severity of desertification on the environment depends on man's activities and as well the natural phenomenon.

The consequences population pressure, over grazing, bushfire, over cultivation, deforestation, illegal mining, and other related human activities (Anthropogenic). And as well as other natural happening on the environment, which includes flooding, erosion, drought can simply lead to desertification on the environment.

Over cultivation this will imply enlargement on the hectares of land, as a result more trees were indiscriminately cut, there is intensification used of agricultural land.

Study has clarify that Yauri local government or (emirate0 is prone to desertification and if care is not taken it may lead to serious environmental problem.

Yauri local government is famous for its large scale in agricultural production and grazing as well. Both grazing and agricultural activities demands large hectares of land, by virtue of these, forests were deforested and land is deteriorating seriously as a result of intensive farming and the constant use of organic fertilizer.

Poverty is one of the agent leading people to be over using the environmental natural resources without rational. Trees served as the major source of energy to people due to high cost of other sources of energy in the market. Most people cannot afford the use of other source of energy rather they are dependently on the natural vegetation as trees are obtained from the environment. Frequent bushfire is evidence in the study area.

Mismanagement of natural resources by man, has called for a great attention in the present day life, the environment as well as the resources are been used not in accordance with international acceptable standard.

Desertification as one of the major environmental problem(s)it can result to migration, misery, loss of life and properties, loss of forest vegetation, lowering of water table, loss of agricultural land and other related problems on the environment.

Desertification problem has become a major problem on the environment to the extent that concerted efforts are required towards ameliorating it. The environment is highly facing a great problem of desertification, based on that, serious measures must to be taken to curve the problem.

Environmental managers has a great role to play in determining how everyone be it government organization, private organization, people, individual and institutions can contribute their quota to solution.

1.4 JUSTIFICATION

Desertification problem has become one of the major problems on the physical components of environment and the environment in general. The people of the study area, Yauri local government (emirate) relies so much on environmental natural resources. Their major source of earning is agriculture, others are rearing and fishing.

Agriculture, bushfire and deforestation in the area carries over 50% of the total causes of desertification such as loss of species health hazard, reduction in general rainfall, change in atmospheric carbon dioxide, biodiversity are degrading the agricultural product fertility capacity.

Some parts of the environment lost their natural atmospheric condition due to daily emission of green house gases from industries as well as healthy trucks on our highways.

As a result of lost in soil fertility due to erosion leaching and other anthropogenic, farmers move from one plot to another. Important areas were deserted by people due to solid and toxic waste.

With present increase in population which, is becoming daily without rational, techniques are required in managing the environment to enhance better future for the generation yet unborn.

1.5 THE SCOPE AND LIMITATION

The study will cover Yauri local government (emirate) due to intensify and rate of desertification observed in the area. The causes and result (problems) of desertification on the environment and ways of controlling it will be the central focus.

1.6 THE STUDY AREA

This project or research work is going to be carried out within the territory of Yauri local government only.

1.6.1 HISTORICAL BACKGROUND OF THE STUDY AREA

(YAURI EMIRATE)

Yauri is located south-ward on the eastern of the famous river Niger at a distance of about 200 kilometers from Birnin-Kebbi, the capital city of the present Kebbi State.

Yelwa the headquarters of Yauri emirate and Yauri local government is a new settlement that came into being following the relocation of the ancient capital- Birnin-Yauri, now about 14 kilometers away from Yelwa, located at the eastern part.

The inhabitants, largely made up of Kambari, Gungawa, and Hausas.

However, the earlier settlers were a group of hunters believed to have migrated from Katsina, and were met at a later stage by other group such as Kabawa from Kebbi, Nufawa, from Nupe land and Kambari from the far east.

The named "Yauri" was derived from the Hausa word Yawara; meaning dried meat. When the much-celebrated Queen Amina of Zauzzau visited the area, the people then known as Kasawa entertained her with the delicious YAWARA. The Queen was so impressed by the gift and she later named the people 'YAWARAWA'. Which was later modified to 'YAURI'. The kingdom of Yauri was one of the seven classified lesser Hausa states. "Banza Bakwai".

Yauri local government (emirate) is comprised of six (6) district towns among of which are Yelwa, Kwanji, Shanga, Ngaski and Birnin-Yauri.

Under these districts also there are small communities that live on their own.

Farming and fishing are the two main occupation of the majority of the inhabitants, cultivating wide variety of crops such as guinea corn, millet, maize, rice, groundnut, beans as well as onions. Yelwa is a fairly urbanized settlement with relatives social amenities.

1.6.2 THE NATURE OF LIVING AND CUSTOMS

Despite the fact that they speak in different tongue and have different culture, the general tongue (Hausa) within this inhabitant made life easy to them in terms of interaction.

Gungawa people of Yauri Local Government (emirate) live close or by the side of River Niger setting themselves in group called Gungu that is where the name Gungawa came into existence to date. Kambari and Hausawa live in the dry land of the area.

Kambari and Gungawa before now are majority of idol worshipers, Kambari worshiped Magiro and Gungawa worshiped Doguwa or Mutumin Bisa as they called it. While majority of the Hausas were Islamic followers.

Customs:- The inhabitants have almost a similar festival annually known as 'Dambe' local boxing and wrestling 'Kokuwa'

Dress: - Hausawas and Gungawas have almost a similar mood of dress. Though before now Gungawa do waer bante. Kambari's mode of dress is quite different from all. The male do wear Bante and Warki then, this Bante will only cover their private parts, and the Warki will now cover their back (buttocks). The sometimes wear shirt (Banga) or they use wrapper that will cover only one of their shoulder and some parts of the body leaving one of the shoulder open.

Their women whether married or not married they don't wear shirt also, they only use a small wrapper known as Gwado to wrap on their buttocks and private parts of their body.

Kambari women doesn't carry load on their head no matter the weight of that load and no matter also the distance, they only use their shoulder. According to them they said "head is a king"

House construction: - The inhabitants of Yauri emirate were earlier using mud to construct their huts and also use thatch and bamboo stem as roofing members, they used crop (corn) stem and wood with rope to fence their houses.

With development in life today, all customs and tradition were becoming into history especially in the major towns of the area.

Customs were "deserted" by the inhabitants due to society activities development within the environment.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 INTRODUCTION.

Desertification is a difficult word to define. The ready image is of patched earth, dead trees and the selections of cattle; but a precise and meaning is much more problematical. What can be said from the start is that it is an ecological change which takes place only on the deserts edges, (Woren and Maizels 1977).

According to Le, Houerou (1959) recognizing, that the word desertification describe ecological degradation in any kind of environment including tropical ecological degradation in any kind of environment including tropical forest, including tropical forest, invented the word desertification to refer specially to semi arid areas bordering actual deserts.

Garduno, (1977) described desertification as the impoverishment of arid, semi arid and some humid ecosystems by the impact of man's activities. Desertification is the result of land abuse emphasis on human land used.

Similarly, natural deserts are wide spread over the surface of the earth. Their extent fluctuated in the quaternary period but exhibited a general inclination to increase. This is the process of natural desertification of former meadows, prairies, steps and allivial and plains. (Kovda 1980).

Desertification has been and still used by many author to describe degradation of various types and forms of vegetation, including sub -divider and humid forest areas, which have nothing to do with deserts either physically or biologically: (Le houerou, 1977), emphasizing land forms and vegetation. Desertification has been defined as the extension of typical desert land scope and lands forms to areas where they did not occur in the recent past (Le Houerou, 1977)

In another definition, United Nations (1978), (emphasis on economical impact) described desertification as the diminution or destruction of the biological potential of the land, and lead ultimately to desert like conditions. It is an aspect of the widespread deterioration of ecosystem that has diminished or destroyed the biological potential of the land, i.e. plant and animal production, for multiple use purpose a time when increased productivity is needed to support growing population in quest of development.

Similarly, desertification, if it takes place, could occur at various degrees of severity; it could be drastic on a hard clayed soil on slopes that allow run off; but it could be a phenomenon, little more lasting than drought on a nearly sand Qoz (Charley and Cowling, 1968). Land degradation in arid and semi-arid and dry sub-humid areas resulting from various factors including climate variations and human activities (part - I Article of the CCD, Dr. Halilu A.S. 2002). Desertification is a general name given to a process whereby eco systems loose the capacity of revive or to repair themselves.

In a summary definition of desertification, (Adeofolalu 1981), drought + man = desertification. By drought is meant non-availability of adequate amount of water for man, animal and plants. (growth development and yield or maturity) as and when needed. Man the other variable on the left hand side represent all activities of man that bring pressure to bear on vegetal cover (leading to decimation), land resources, which result in degradation due to over exploitation or poor management etc.

Dr. Halilu, (2002) desertification simply means diminution or destruction of the biologically potentiality of the land.

[illegible]

FIGURE 1.1

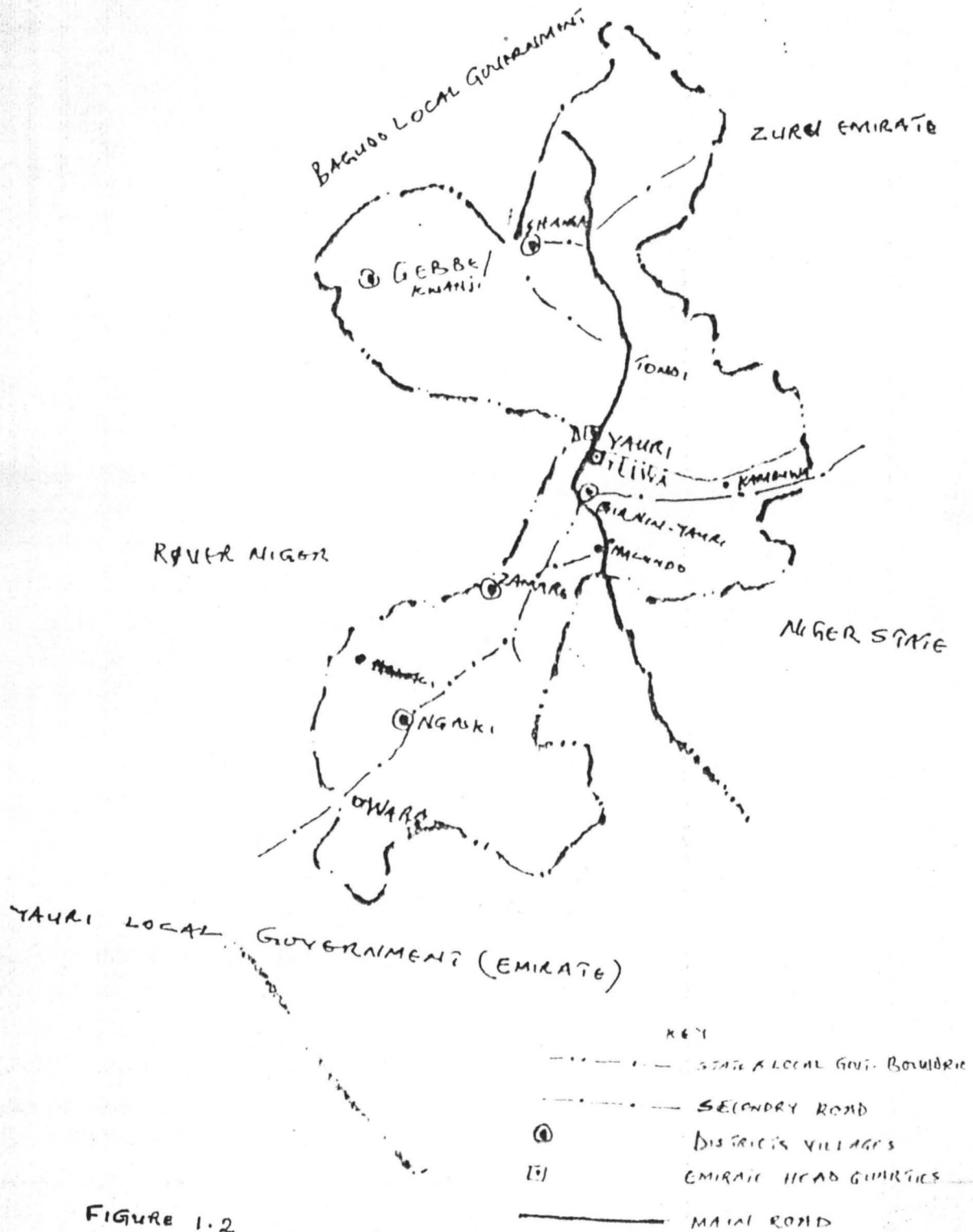


FIGURE 1.2

Desertification is a land degradation in arid and semi-arid dry sub humid areas caused by various factors, including climatic variations and human activities. (Agenda 21, Article 12.2).

In addition, desertification according to Meckelein (1980) described it as the stress on an degradation of oases inside the Sahara itself. Desertification is the result of a progressing drying of the climate of Africa a trend that began 5000 years ago. El-Baz (1983) desertification in another author is viewed- defined desertification as a made induced global phenomena that has no respect for climate zone. Dregne (1984).

According to Reining, (1978) recognizes that if desertification is phenomenon that involves climates, soil, flora, fauna and man, it must be regarded as a form of degradation of ecosystem due to a change in the pressure of human used of these systems.

Desertification is the diminution or destruction of the biological potential of the land, and can lead to desert like conditions. It is an aspect of the wide spread deterioration of ecosystems under the combined pressure of adverse and fluctuating climate and excessive exploitation. Such pressure has diminished or destroyed the biological potential (UN) plan of action to combat desertification.

Other authors, Hubert (1917, 1920) Schwartz (1919), and Chudeau (1921) perceived desertification as a progressive drying of the climate, particularly in the margins of the Sahara.

2.2 CAUSES OF DESERTIFICATION

On the causes of desertification, it involves the loss of biological or economic productivity and complexity in cropland, pasture, and woodlands. It is due mainly to climate variability and unsuitable human activities. The most commonly cited forms of unsuitable land use are over-cultivation,

overgrazing deforestation and poor irrigation practice . Seventy percent of the world's dry lands (excluding hyper arid deserts), or some 3,600 million hectares, are degraded. While drought is often associated with land degradation, natural phenomenon occurs when rainfall is significantly below normal recorded levels for a long time.

* Dry land responds quickly to climate fluctuations. By definition, dry lands have limited fresh water suppliers; precipitation can vary greatly during the year. In addition to this seasonal variability, wide fluctuation occurs over years and decades, frequently leading to drought. Over the ages, dry land ecology has become attuned to this variability in moisture; plant and animal can respond to it rapidly. For example, satellite imagery has shown that the vegetation boundary south of the Sahara can move by up to 200km when wet year is followed by dry and vice versa.

- People must also adjust to this natural fluctuation: - The biological and economic resources of dry lands, notably, soil quality, freshwater supply, vegetation, and crops are easily damaged. People have learned to protect these resources with old age strategies, such as shifting cultivation (agriculture) nomadic herding. However, in recent decades these strategies have become less practical due to changing economic and political circumstances, population growths, and a trend towards more settled communities. When land managers cannot or do not respond flexibly to climate variations. Desertification is the result.

- The relatively low priority given to environmental protection often leads to poor land management decision. The overuse of land may result to from specific economic conditions or from inappropriate land laws or customs. In many cases, unregulated access to land resources may lead

some individuals to maximize their own gains by over exploiting the land at the expense of the community as a whole.

- Poor people particularly poor women, often lack access to the best land, depending instead on the most fragile areas and resources. Their poverty many give them little alternative but to extract what they can from the scarce resources available to them, even though this degrade the land.

- International economic forces can encourage people to over exploit their land: International trade patterns can lead to the short-term exploitation of the land.

- Ignorance, errors and natural and man-made disasters can also contribute to land degradation: ignorance of the natural environment played an important role in the US during the infamous dust Bowl of the 1930s among other errors, during a time of drought Midwestern farmers used ploughs better suited for the more temperate latitudes of western Europe. In recent decades, similar mistakes in the choice of policies or technologies have led to land degradation in many countries, both developed and developing. Disasters such as wars and national emergencies also destroy productive land by displacing its managers or causing heavy concentrations of migrant to over burden an area. natural disasters such as floods and drought can have a similar effect.

- What roles do increasing populations and population densities play? Expanding human population can be the ultimate driving force behind.

- Desertification more people in an area inevitably exert a greater pressure on that area's resources; sometimes this pressure is indirect as when growing urban populations place demands on food production in uncrowded rural area. But the cause of desertification are complex, and the relationship

between two variable such as population can result in desertification since there may no longer be enough people to manage the land adequately. Many hillside terraces in Yemen have fallen into disrepair with the exodus of labour to neighbouring oil-rich countries. Examples can also be sited of areas that support large concentrations of people without much degradation, such as around the city of Kano in Nigeria.

2.3 IMPACT OF DESERTIFICATION

Desertification and drought have a severe impact on food, security, livelihood, and economic, social and cultural activities of the affected people. This has aggravated the food situation in the area resulting in low food security index.

There is drastic reduction in fraction of the soil covered by vegetation, as a result of expanse of bare soil; there is a consequent rise in reflective capacity (Albedo) of the surface for solar radiation. This in turn lead to climate change.

There is considerably and often-permanent loss of perennial plants especially woody shrubs and trees. Soil erosion and improvement are side spread, because of removal by wind in mineral and organic materials and because of rapid oxidation of the remaining litter and soil carbon gully and sheet erosion and soil by occasional rainfall tend to accumulate the eroded materials on valley floors or in basins consequently agricultural land are lost.

Studies have shown that the most usual, but probably not the least traumatic response to the hazards of desertification and drought in migration. Most of the movements in this zone are directed to the urban centers in northern and southern states.

A major consequence of desertification/drought-induced migration is separation of families as man usually abandons the woman and children to

seek for employment in the urban centers. National Action Programme (NAP) to combat desertification and mitigate the effects of droughts (Dec. 2000)

Other accompanying consequences are loss of animals and human by death, inadequate water table supply, lowering of water table and conflict over grazing farmlands.

CHAPTER THREE

3.0 METHODOLOGIES AND PROCEDURE

Due to the nature and framework of the research work as well as the time constraints of the study, questionnaires was structure and used as an appropriate instrument for obtaining some if the information from the people within the study area. Moreover, to questionnaires, reconnaissance, survey and personal interview were carried out to add to the volume of the information got. The use of relevant materials as textbooks, research papers, and journals served as an imperative tool.

The information techniques gave an ample opportunity for adequate data collection.

3.1 QUESTIONNAIRE

Structured questionnaire carrying about twenty-five questions was designed and administered to people of different discipline in the study area. One hundred questionnaires were administered, the respondents were restricted to some options. A question is asked and a number of responses is supplied, here the respondents are expected to pick any one that best suit him/her responses. The question asked had direct bearing on the activities responsible for desertification in the area. due to high percentage of illiteracy to people the questions were verbally translated into their general tongue (Hausa) for proper comprehension.

3.2 RECONNAISSANCE SURVEY

This was carried out in the study area (Yauri emirate). The survey was done around earlier July 2003. Some towns and villages of the study area were visited, they include Warra, Yauri, B/Yauri, Shanga, Ngaski and Gungu. Some of the surround environment where most of this activities takes place were also visited. This enable the physical observation and

assessment of human activities on the land. The survey involves watching and evaluating the extent of desertification in the area. the inventory of the physical environment was done. First hand information relating to desertification was obtained, pictures were taken to serve as signs and evidence testifying the role of desertification problem.

3.3 PERSONAL INTERVIEW

Verbal interview was personally explored to other people about desertification problem. This involves eliciting information from farmer and stakeholder. A skill of understanding was used in communication. Probing questions were asked to give more detail about the theme of the research work; a lot of informations were received using the simple method of interview to obtain an information. Direct and more elaborate exploration on desertification, effects and its causes were obtained. Through personal interview more explanation that were not included in the initial questionnaire were provided.

3.4 OTHER SOURCES

Materials and data from a relevant empirical work from books, journals and research papers were consulted and scrutinized in other to have justifiable data. Desertification cuts across a lot of countries in one-way or the other as such a lot of work has been documented about it.

3.5 Data analysis was based on percentage method. This method was adopted due to its simplicity and relative ease of interpretation and presentation. The concern of this analysis lies on the number of respondents, their responses expressed in term of percentage. One hundred questionnaires were administered but only eighty-five were filled and returned.

So here the analysis focuses around eighty-five (85) questionnaires returned.

Table 3.6 shown below is the sample of the table used for analysis.

Table 3.6

Other business engaged in

Occupation	No. of response	Percentage
Firewood trade		
Hunting		
Carpentry		
Bricklayer/Mason		
Other specify		
Total		

CHAPTER FOUR

4.0 DATA ANALYSIS

Here the information obtained was analyzed on the number of responses into percentage.

4.1 DATABASE

The database comprises from a number of people of different categories in the study area. These category of people are male and female that are sensible and of different skill and understanding.

4.2 PROBLEMS ENCOUNTERED

It is the nature of work, more especially when it comes to a fieldwork, there is no way one can undergo such a process without encountering difficulties in one way or the other that can degrade the quality of such work. This problem can either be money, the area of study or the people to deal with.

-MONEY, Financial problem is the backbone of every day life. In undergoing this my research work, money problem was the first problem I encountered. This led to the delay of this my research working the start, and as a result to that some matters involved as well as other areas of the study area were left untouched because I am financially handicap.

Other areas in the study area are difficult to visit due to difficulties in their roads. Such areas can not be visited by vehicle and motorcycles charge higher rates.

-PEOPLE, because of illiteracy and other problems of life to most of the people in the study area, I encountered though not much but a little problem while undergoing this my research work. Some of the people didn't want to attend to me for security purposes, some even made mention that

such activities has been happening at their areas but no achievement was made.

4.3 RESPONSES FROM THE QUESTIONNAIRE

The responses here are analysed according to the questions as indicated below: -

4.1 what other type of business activities do you engaged yourself apart from your major occupation

Occupation	No. of response	Percentage
Firewood trade	37	43.53
Hunting	20	23.53
Carpentry	9	10.6
Bricklayer/Masons	12	14.11
Other specify	7	8.23
Total	85	100%

Authors Source 2003.

Tables 4.1, 43% of the respondents engage in firewood trade. This implies that deforestation is one of the major causes of desertification in the environment; this can lead to a serious environmental problem, as land deterioration. 23.53% are engaged in hunting activities; most of the bush fires were as a result of hunting activities in the bush. The pressure on the physical components of the environment is high. 10.6% are in carpentry, 14.11% of the respondents are bricklayers, while 8.23% rely on other activities on the environment.

Occurrence of Natural Causes of Desertification

Natural causes of desertification cannot be stopped, but its damage can be controlled to a certain limit. Natural causes as erosion, drought, flood and others can seriously injure the environment when it occurs.

4.2 Occurrence of the natural causes of desertification in the area

Frequency	No. of response	Percentage
Droughts	-	-
Wind	33	38.82
All of the above	22	25.88
Others specify	30	35.30
Total	85	100%

Author's source

From the table 4.2, 38.82% of the respondents have testified that wind occurs frequently than the other elements, wind as a major cause of natural desertification with its frequency in occurrence can lead to environmental problem as loss of soil nutrients and other natural vegetation on the environment.

35.30% of the respondents supported that other problems as flooding and erosion are frequent in occurrence, these clearly proves that there is serious problem of environmental deterioration.

4.3 Type of agricultural activities

Agricultural type	No. Of response	Percentage
Animal production	26	30.6
Subsistence farming	59	69.4
Mechanization	-	-
Total	85	100%

Authors source, 2003.

From the table 4.3, 30.6% of the respondents engaged in animal production. Here animal production as a cause of desertification is low. Even with low level of overgrazing. It still contributes some degree of desertification. 69.4% of the respondents are engaged in substance farming. This requires additional hectares to be cleared for more crop production due

to daily increase in population. This is serious leading to environmental degradation. Population pressure leads to more acquisition of land.

4.4 Small hectares of land will denote relatively low level of deforestation while large hectares imply high level of deforestation

4.4 Hectares of farm land cultivated

Hectares of land	No. of response	Percentage
1<2	20	23.50
1<5	35	41.20
6<10	30	35.30
Total	85	100%

Authors Source, 2003.

From table 4.4, 23.5% of respondents cultivate less than two hectares of land, 41.2%, less than five while 35.30% of the respondents cultivate less than ten but more than six hectares of land. This entails that large hectares of land are cleared to increase more crop production, increase in farmland call for more deforestation and land clearance every season, this resulting to desertification problem.

4.5 Land Management Techniques

Management technique	No. Of response	Percentage
Manure	20	23.53
Fertilizer	42	49.41
Others specify	23	27.06
All of the above	-	-
Total	85	100

Author's source, 2003.

From the table 4.5, 49.41% of the respondents do practice the application of organic fertilizer; regular cultivation of farmland plus intensive use of organic fertilizer can result in reduction of natural fertility of the land. 27.06% of the respondents do practice the following method of management as allowing the land for a certain period of seasons. 23.53% of

the respondents used manure. Intensive farming on a land can lead to soil deterioration resulting to desertification problem.

Construction Materials

Most of the construction materials are obtained directly from the environmental resource, these material are been used with no effort to replenish them.

6 The materials used for house construction

Materials	No. of response	Percentage
Clay, Wood, Grasses	44	51.80%
Sand and stones	-	-
Trees	-	-
Others specify	41	48.20%
Total	85	100%

author's source, 2003.

From 4.6, 51.80% of the respondents obtain their construction materials directly from the natural resources in the environment. Population is highly increasing; more land and materials are required for extension of houses in the village. Over use of these materials is resulting to environmental problem as deforestation, erosion and others. 48.20% uses other materials such as cement, zinc imported from somewhere else. This still requires the use of other nearby materials such as sand and stones.

4.7 Effort to replace the removed materials

Effort made	No. of Response	Percentage
Transplanting every year	15	17.60%
Filling the removed portion with waste product	34	40%
Others specify	-	-
No effort	36	42.4%
Total	85	100%

Author's Source, 2003.

**RESULT OF INDESCRIMINATE FELLING OF TREES
(DEFORESTATION IN THE STUDY AREA.)**



FIGURE 4.1



**FIRE WOOD AS THE COMMON SOURCE OF ENERGY
IN THE STUDY AREA.**

FIGURE 4.2

From 4.7, 42.4% shows that no effort was made in bringing back the removed materials, this can seriously result in environmental problem as erosion and related problem such as loss of forest vegetation leading to desertification, 40% practice the use of waste product to fill the portion dug to obtain materials like sand. 17.60% do practice transplanting; this is low considering the nature of population and the environment itself.

4.8 Source of energy at home

Firewood as a means of energy at home is one of the major elements causing deforestation and desertification problem. Most of Nigerian people in both towns and cities as well as villages rely on firewood as their source of energy, this call for a great concern to environmental managers. The fire wood consumption is posing a lot of problem to the natural environment. Firewood has become a general source of energy in almost all the rural areas in Nigeria.

4.8 Energy source at home

Source	No. Of response	Percentage
Kerosene	10	11.80
Firewood	70	82.30
Solar/Gas	5	5.90
Others	-	-
Total	85	100%

Author's source, 2003.

Table 4.8, shows that 82.60% of the respondents depend on firewood. This implies that there is a drastic demand for firewood (trees). Many cannot afford to buy or use the other means due to poverty. 11.8% use Kerosene as 5.9% depend on gas. The collection of these resources on the environment is done irrationally and is a very serious problem to the environment.

4.9 Trees planted Annually

Parts of the effort that shows consciousness to environment by the

people in controlling deforestation, which can lead to desertification individual or group can contribute to an extent in controlling the environment by planting a number of trees annually to combat desertification.

4.9 Trees planting Practices

Trees(Plants)	No.of response	Percentage
1-3	31	36.50%
1-5	9	10.60%
5<10		
Nil	45	52.9%
Total	85	100%

Author's Source 2003.

Table 4.9 shows that 52.9% of the respondents don't engage in any tree planting activities, this clarifies the non-challant attitude of people in the rural environment. Trees are fallen by both man and natural agents every now and then yet some people don't bother to take this planting effort into practice. 36.50% plants 1-3 annually, 10.60% plants more than five but less than ten this percentage is very low in population.

4.10 Forest reserve in the study area

Absence of forest reserve can pave way for wanton destruction of vegetation through cutting and burning. Forest reserves are appropriate measures for checking deforestation leading to desertification problem on the environment. Provision of forest reserve on the environment can determine the concern of people for the environment.

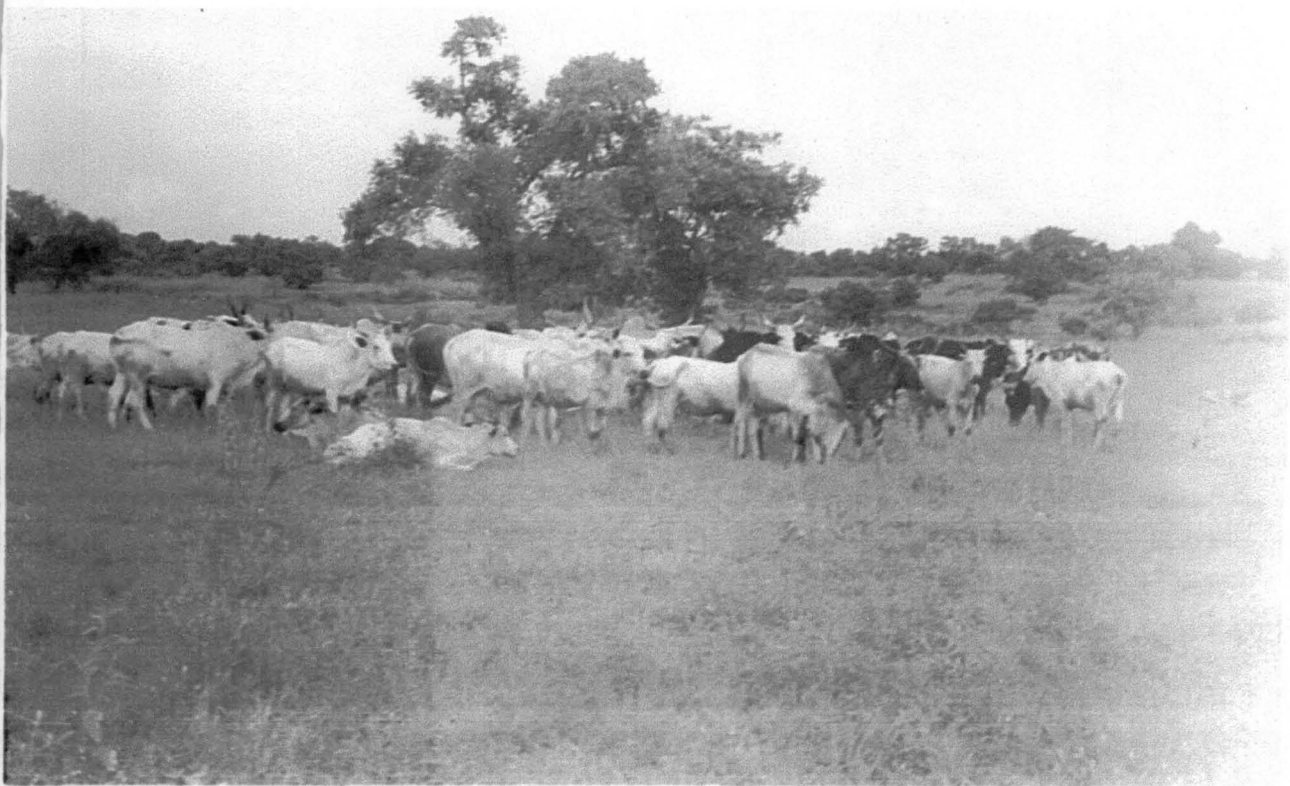
4.10 Number of forest reserve in study area

Number	No of responses	Percentage
Two	39	45.90%
Three		
Four	4	4.70
Nil	42	49.4

**EROSION AS ONE OF THE NATIONAL POINT TO
DEFORESTATION IN THE STUDY AREA.**



FIGURE 4.3



**AND EXAMPLE OF GRAZING ACTIVITIES IN THE
STUDY AREA.**

FIGURE 4.4

Total	85	100%
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Author's source, 2003.

Table 4.10, 4.7% of the respondent have supported that there are four forestry and 45.90% supported that there are two forestry in the area while 49.4% testify that there is none in the area. great attention is required from both government and people to create more forest land, to control the encroachment of desertification in the area.

Bush burning

This has become a common phenomenon; there is a great loss of agricultural product every season due to this act by man. Man in his struggle for survival tends to finish the vegetation and wild animal life. The frequent occurrence of this has call for a greater attention of people.

4.11 What causes bush fire in this locality?

Causes	No of response	Percentage
Man	85	100%
Natural	-	-
Others	-	-
Total	85	100%

Author's source, 2003

4.11, 100% of the respondents have supported that man is the agent of bush burning in the area, this can be in his struggle to survive, this is a great danger to the environment it always result in lost of vegetation, animal life and agricultural products.

4.12 How often is the bush burning?

Frequent	No of response	Percentage
Every season	85	100%
Every two season	-	-
Others	-	-
Total	85	100%

4.12 100% of the respondents have testified that they experience bush burning in every dry season. Population pressure, increases pressure on the environmental natural resources and this is resulting to environmental problems as desertification

4.13 Forest Reserve

Government do control desertification by creating forest reserve and assigning officers to be controlling the forest and other evil acts in the bush such as desertification, bush burning and other related acts.

4.13 Is there any forest reserve in this locality?

Forest reserve	No of response	Percentage
Yes	45	52.94
No	40	47.06
Total	85	100%

Author's source 2003

From table 4.13, 52.94% of the respondents have testified that there is government forest reserve in the study area while 47.06% of the respondents have said no, this implies that the forest reserve in the area is within some or one part of the study area.

4.14 What is the result of the forest reserve to this environment?

Result of forest	No of response	Percentage
It reduces wind pressure	20	23.53
The bush within the area is kept green	15	17.65
The soil of the area is more fertile	40	11.76
All of the above	30	35.30
Others specify	10	11.76
Total	85	100%

Author's source 2003

From the table 4.14, 35.30% of the respondents have supported that forest reserve contribute to the environment all the above stated items in the

table, 23.53% have said that it reduces wind pressure, 17.65% testify that the bush is lively with trees of different type, 11.76% have said that the soil fertility is retained within and around the area which 11.76% have specify other importance like security for animal life. This implies that forest reserve is contributing a lot to environment.

4.15 what is the result of the two activities to the environment?

Result to the environment	No of response	Percentage
Land destruction	-	-
Lost of trees	-	-
All of the above	55	64.70
Others specify	30	35.30
Total	85	100%

Author's source 2003

Table 4.15, 64.70% testify that mining and quarrying activities is resulting their environment to the land destruction and lost of trees. This implies that gradual continuation of these two activities can result to serious environmental problems that can lead to desertification, 35.30% of the respondents supported that the result can on the other side as lost of natural resources, deterioration of land. These two activities are generally resulting the environment to problems in different forms.

4.15.1 GENERAL DISCUSSION

Over 60% percent of the people in the study area are farmers, they cleared large scale of land for their agricultural production, most of these farmers are masses that they cannot practice mechanized farming, instead, they practice subsistence farming to earn their living.

Based on my discussion with the people of the study area, there were an event of natural desertification, mostly flood, and erosion this need serious attention from the environmental managers.

**RESULT OF OVER CULTIVATION AND
MISMANAGEMENT OF LAND IN THE STUDY AREA.**



FIGURE 4.5



**LARGE SCALE FARMING ACTIVITIES IN THE STUDY
AREA. (YAU RI EMIRATE)**

FIGURE 4.6

Flood damage agricultural products and vegetation almost every year in some parts of the study area.

The people of the study area are fully relying on the natural resources of the environment. Trees are deforested for the sake of firewood and other domestic purposes, this deforesting issue have reached an alarming rate because of the increase in human activities on the environment. Over 80% of the people depend on firewood as their source of energy in their houses, this has affected some parts of the area.

The event of annual bushfire has affected and still affecting the area. there is a great lost in forest vegetation and agricultural production, wild animals do scattered. The result to this events had called for a serious attention of the people within the area. on my discussion with some members of the study area, it was shown that if not because of this event, (bushfire) the trees and other vegetation family in the bush could have grown more than the way they have grown. Most of the result of the environmental problem in the study area were caused by man.

Land were destructed in some parts of the study area as a result of illegal mining and quarrying activities, some farmers leaves their plot to another as a result to these activities. Even though it is not much but with the little increase of these two activities in the study area, the affected areas are now faced with a problem on the particular areas lost in forest and farmland.

Other problems to the environment of the study area were as a result of poverty and lack of awareness to the people on environmental matters.

There was an irrational removal of the environmental natural resources. Over 70% of the people in the study area are dependently on the environmental natural resources to earn their good living. The rush to the resources on the environment with less effort to replenish them. this is a

result of poverty and illiteracy to the environment. This events are resulting the environment to a condition of desertification in some areas of the case study.

The poverty level of the people affects their perception of resources and proneness of society to extract natural resources at levels which may be harmful the ecosystem, other sources of energy are expensive and a common man cannot afford them instead, he depends on firewood because it is cheap and nobody will query him in removing them from the bush. Most of the people in the study area fetch the firewood themselves or their wives and children.

Through verbal discussion with the people I understand that the area (Yauri Emirate) is blessed with a lot of natural resource and forested land. But irrational activities of man in the environment is generating most of the environmental problems ahead with the area at present.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

Desertification is a serious environmental problem, it constitute most of the environmental problem today. Problems like migration, starvation, misery, conflicts and other related problems.

People leave towns or villages to cities looking for survival because of intensity of desertification. Others abandoned their wives and children, there is always conflict between these group of people and the other mostly over grazing, there^{is} low production of agricultural products.

In the study area Yauri emirate, the author has been able through the use of questionnaires to come out with the fact that over 80% of the activities of the people in the study area can lead to serious environmental problem as desertification.

The events of drought as one and the major natural causes of desertification is less, but there were other events naturally as windstorm and flood. There was also an events and frequency of erosion in the area even though it can't cause but can act as a pointer to desertification. Desertification cannot be stopped but it's severity can be controlled to a certain level of understanding.

As the population increases, the needs to peoples also increases in different forms on the environment. The environment and its components is made for people, and the people's needs cannot be satisfied by man.

The study area (Yauri Emirate) has more of its land forested and with a lot of natural resources, but human effort has today caused a lot of damage to the environment.

5.2 CONCLUSION

Desertification is not some contagion that spreads without human agency and whose advance can be stopped by a few lines of trees. It is not like a tidal wave spreading in from the desert. It could result from a change in climate, and if so nothing will stop it. It is however more likely to be the result of irrational human activities (Anthropogenic) on the environment as well as other natural phenomenon.

Man do operate his activities form to enhance good living, most of these human activities on the environment are activities that can not be stopped because of their importance to man despite the fact that they can result to desertification. It's cure lies in some kind of social changes.

This study is able to point out some major causes, as well as the impacts of desertification on both man and the entire environment through the use of questionnaire, verbal interview and visit to some area for physical observation.

Questions were asked on the major causes of desertification in the area. From the response, it is believed that over 80% of the causes of desertification was as a result of human activities that is increasing daily and the remaining percentage which is less than 20% was resulting from the natural phenomenon, such as wind, flood and erosion.

Same questions were rise on the result of occurrence of the desertification in the area.

It is also believes that the irrational activities of man and the minimal occurrence of the natural causes of desertification has cause a lot of destruction both land and physical components environment in the area. on the human, human impact of desertification in the area, the severity is that it touches the life aspect of man in the universe.

Because it is severe on the food, security, economic, social and cultural activities of the people in the area.

There is always increase in population of the people in the area, this is also calling for more activities as farming. There is a considerable number of people involved in farming activities in the area, this is resulting to intensification in farming activities.

Activities in the forest like deforestation have so far become a topical issue of the area, people so fell trees wantonly for the sake of firewood and other domestic purposes. People depend fully on these resources on the environment because of their inability (poverty) to afford other means of source for energy.

The constant reduction in the water table resulting from both man and natural phenomenon in the area, leads pasturers to move from one range to another in search of both water and food for their animals. Most of the channels get dried immediately after the take off of the raining season.

Erosion events can destruct land and vegetation this can also lead to deterioration of soil fertility. Erosion can be the result of both man's activities on the land and the natural means. This events can lead to serious environmental problem.

It is unfortunate that the environment and its natural resources are been used over and over used with less effort to replenish the removed materials. Irrational activities of man today has lead most of the forested land to be deforested. The natural fertility has deteriorated due to over-cultivation.

Man should always remember that there are other generations yet unborn and the environment is made for both present and future generations.

5.3 RECOMMENDATION

Based on the elements causing desertification as well as the result of desertification analyzed. It is quite obvious that some strategies, options and policies are required to control the growing problem of desertification and its danger to the environment of the study area (Yauri Emirate)

Bellow are the recommendation made to serve as a step to control the problem

- Government should lay more emphasis on any evil act that is tending to destroy the environment and its natural resources.
- Tree planting programme should be made by transplanting economic and other related trees annually, this should be controlled by government (authority)
- Afforestation should be practiced by the people within the environment
- Both government and non-governmental organization as well as individuals should stand against bush burning.
- Adequate improvement in farming system and other environmental management techniques should be made to reduce the effect of desertification.
- Poverty alleviation programme should be embarked by government and private organization.
- Techniques of awareness should be introduced to people against environmental vandalization, this should be made by both government and non-governmental organization.
- Authority should also introduce another source of energy to support the last alternative to masses i.e. firewood, and reduce the rate of deforestation.

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This questionnaire was designed to case some problems to be encountered during my project work at the study area (Yauri Emirate)

RESEARCH QUESTIONNAIRE

1. a. Occupation
B. Age
C. Sex
D. Locality
2. What other economic businesses do you engaged your self in?
 - a. Firewood trade
 - b. Hunting
 - c. Carpentry
 - d. Brick layer
 - e. Other specify
3. Which of the natural causes of desertification is of frequence in occurring?
 - a. Drought
 - b. Wind
 - c. All of the above
 - d. Other specify
4. How does any of the factors you choose result to the environment.?
 - a. Lost of forest vegetation
 - b. Lost of agricultural products
 - c. Lost of properties
 - d. Other specify

5. Is there any effort to stop or minimize environmental problem like erosion?
a. Yes () b. No () c. Partially ()
6. What type of agricultural activities do you practice?
a. Animal production
b. Subsistence farming
c. Mechanized farming
7. How do you treat your farmland as a management techniques?
a. Manure
b. Fertilizer
c. Other specify
8. How many hectares of land do you cultivate in a season?
a. $1 < 2$
b. $2 < 5$
c. $6 < 10$
9. What materials do you used in your house construction?
a. Clay, wood, and grasses
b. Sand and stones
c. Trees
d. Others specify
10. Do you look for permission before obtaining the materials from the environment?
a. Yes () b. No ()
11. What efforts do you to replenish the revolved materials?
a. Transplant trees every year
b. Fill the dug portion with wastes products
c. No effort

- d. Others specify
- 12. What is your source of energy at home
 - a. Kerosene
 - b. Firewood
 - c. Solar
 - d. Others specify
- 13. How many trees do you plant every year?
 - a. 1 -3
 - b. 1 - 5
 - c. 5 - 10
 - d. nil
- 14. Is there any forest reserve in this area?
 - a. Yes ()
 - b. No ()
- 15. How any forest reserve do you have in this area?
 - a. Two
 - b. Three
 - c. Four
 - d. Nil
- 16. Has it (forest) any advantage to this environment?
 - a. Yes () b. No ()
- 17. What are the causes of bush fire in this area?
 - a. Man
 - b. Natural
 - c. Other specify
- 18. How often is the bushfire?
 - a. Every season

b. Every two season

c. Others specify

19 How does it (bushfire) result to this environment?

a. Lost of life

b. Lost of agriculture product

c. Lost of forest

d. Others specify.

20 What are the result of forest reserve in this area?

a. It of reduces wind pressure

b. The bush is kept green

c. The soil in the area is more fertile

d. All above

e. Others specify

21. What are the results of quarrying and minding activities taking place in some parts of this environment?

a. Lost of farm land

b. Lost of trees

c. Erosion problems

d. Others specify

22. Do you experience flooding?

a. Yes ()

b. No ()

23. How often is the flood?

a. Every year

b. Twice every

c. Every two years

d. Others specify

24. How does it (flood) result to you and the environment.

- a. Migration
- b. Lost of farm land
- c. Land degradation
- d. It pollute water
- e. Others specify.