# DESERTIFICATION IN NORTHERN NIGERIA: A STUDY ON THE EFFECT OF DESERTIFICATION ON YOBE STATE

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**ABSTRACT**
*Desertification just like other environmental phenomena has received worldwide attention from scholars and governments of the affected states. This may be because of the dangerous effect that this looming danger has had on various states and communities all over the world. Desertification among other things causes a high level of degradation to the soil making it unsuitable for the pursuit of agriculture, which happens to be the main occupation of most rural and semi-urban communities. Just like other states in Northern Nigeria, Yobe is one of the states that is greatly affected by the continued desertification of some parts of Nigeria. The state has witnessed some harmful aspects of desertification such as increased poverty, hunger, displacement of communities, and soil erosion. To show the importance and urgency of this subject matter, some authors have made a fine attempt at addressing the negative effects of desertification in Northern Nigeria. However, this paper will focus on the effects of desertification in Yobe State and how this has affected agricultural productivity. To effectively research the subject matter, the qualitative method of research will be used while relying on primary and secondary sources to provide data. The paper concluded that desertification is caused by both human and non-human factors like the rapid deforestation of trees, drought, decrease in the amount of rainfall etc. The paper suggests that the government and people of Yobe State should embrace safer agricultural practices that can preserve the fertility of the soil, and also pursue an aggressive policy of water management and preservation in the state.*

## Introduction

A major problem the world has had to tackle in recent times is the issue of desertification. Desertification may be referred to as the degradation of the land. It is a phenomenonwhereby lush lands become dry lands over time by losing their flora. This condition may arise due to severalfactors which are mostly environmental. It is on record that Human or non-human activities (climatic change, drought, deforestation) and improper agriculture have led to a rise in the atmospheric temperature causing and shortfall in the amount of temperature.[xvi] It happens when a vegetative biome changes into a desert biome. It is instructive to note that desertification starts gradually, it is evident in the steady erosion of green plants or vegetation, to arid dry sand. This

phenomenon is quite dangerous because it robs citizens of the benefits of having access or fertile lands for agriculture and fishery.

Some writers assert that the African continent is prone to desertification, because of its proximity to the Sahara Desert. According to Pimm, the countries which lie on the edge of the Sahara are one of the poorest countries in the world and they are subject to periodic droughts that are capable of devastating their people.[xvii]In the Nigerian case, natural or human causes have reduced the biological productivity of drylands (arid and semiarid lands leading to desertification.[xviii]The states that seem to be most at risk are the northern states of Zamfara, Gombe, Bauchi, Sokoto, Yobe, Jigawa, Borno, and Katsina.[xix]

The focus of this paper is on the desertification of Yobe State. Yobe is located in a dry savannah belt, this makes its temperatures dry for a better part of the year. It has been observed that villages despite their level of sophistication have been covered entirely by dunes. According to Aljazeera, whose respondents spoke to some indigenes in Yobe State, said that dunes have buried more than twenty houses in the not-so-distant past.[xx]The situation has continued to worsen as the desert continues to come closer to the people. Making life and the sustenance of the people seem uncertain. This condition is worse in some communities like Toshia in Yunusari LGA. This town has been adversely affected by the encroaching desert as everywhere seems to be covered in dunes. Making navigation across the area quite difficult. The solution to this growing menace could be the planting of trees as opposed to the reckless felling of trees. Strong legislation may also be enacted to discourage harmful agricultural practices. This paper looks at the creeping and harmful effects that desertification has had on Yobe State in northern Nigeria.

**Brief history of Yobe state**

Ever since its inception, this state has continued to grapple with various challenges, ranging from economic to environmental challenges. Yobe is one of the states that have been severely affected by the continued desertification of the Northeastern states. Many farmers have lost their farms to the encroaching desert and have had to move to other villages, for a mostly agricultural state, the deserts seem to have stripped many people of their means of livelihood. This has adversely impacted the living standards and conditions of the people. Yobe State is located in the eastern part of northern Nigeria. Damaturu is the capital of Yobe State. It has a population of approximately 3.4 million citizens.[xxi]It was carved out of Borno State in 1991. Potiskum is one of the economic hubs of the state. It boasts of having the largest cattle market in Africa. For grazing purposes, herders move out with the cattle towards the South in search of food for the cattle. Yobe state shares boundaries with four major states namely: Jigawa, Borno, Bauchi and Gombe. At the eastern flank, it shares borders with Borno state at approximately 421km. At the Southern flank, it shares boundaries with Gombe State at approximately 140km, Jigawa State at the western flank and Niger at the Northern part of the state.[xxii]The state experiences rainfall from the periods of August to December. For the rest part of the year, the climate is mostly dry.[xxiii]The predominant religion in Yobe State is the Muslim religion. Sharia law was established in 2000.

**Signs of desertification**

Desertification just like other phenomena happens gradually. A careful analysis of some environmental indicators under strict monitoring can lead to the detection of these creeping signs of desertification.

A major sign of an encroaching desert is the drastic reduction in the amount of water bodies available in the area. The signs of desertification include but are not limited to massive drought, Endemic Soil erosion and Rain shortages, the reduction in the available water bodies, and the overall decline in groundwater resources.[xxiv]Some high-risk behaviors that encourage desertification include: Land management habits, tillage depth and style, and attitude towards grazing

**States at threat of desertification**

The Northern states seem to be the worst hit when it comes to desertification. It is a shame because this part of Nigeria has to its credit a sizeable portion of land which would have been used for the pursuit of agriculture. Sadly, its proximity to the Sahara Desert is trying to rob it of this natural resources. According to Odiogor, the Sahara Desert is advancing southwards at a rate of 6.0 per cent every year. He claims that Nigeria loses about 350,000 hectares of land every year to desert encroachment[xxv].Currently, it is estimated that the eleven (11) States in the

north are at high risk of this menace, these are Zamfara, Bauchi, Sokoto, Yobe, Katsina, Jigawa, Borno, Kano, Gombe, Kebbi, and Adamawa.

**Causes of Desertification**

Over the years, Northern Nigeria has faced a phenomenon whereby gradually, a large body of water keeps disappearing from the area and in its place, dry sand is covering the landscape. According to the National Meteorological Agency, the north enjoyed a period of rain for 150 days, but now, it has reduced to a paltry one hundred and twenty days[xxvi].

A major cause of desertification is poverty, which is unavoidably high in many parts of Nigeria. Due to poverty, many citizens lack basic education and do not understand how their simple everyday actions like the felling of trees can cause severe harm to the land. For many poor households, trees are only good for cooking, therefore, they engage in the indiscriminate felling of trees and use them as firewood. The deforestation figure for the new millennium (2000-2005) is -3.33 per cent per year.[xxvii]

- Climate Change- the availability of water resources is greatly dependent on the climate. Changes in the climate can speed up the rate of desertification in an area by altering the patterns in temperature.[xxviii]

- Overgrazing- one over looked cause of desertification is the continuous and frequent grazing of the area. This seeming innocent activity can have grave consequences on the fertility of the soil. When animals feed on land at a rate where the land is able to recover its nutritive value.

- Deforestation- The rapid and frequent felling of trees is a major cause of desertification. Trees are known to prevent soil erosion. These trees help in recycling water back into the soil, thereby retaining its moisture. Once these trees are removed, the soil may become drier which makes desertification possible. Deforestation also has the potential of upsetting the distribution of nutrients in the soil.[xxix]

- Overpopulation- the explosion of population in certain areas may cause pressures on the available food and water supply. It would also increase the pressure on the available land, thereby accelerating the rate of desertification.

**Effects of Desertification**

It is estimated that Nigeria loses approximately 5.1 billion naira every year as a result of desertification. Desertification poses the risk of massive loss of land, the ownership of land is sacrosanct in Nigeria. It signifies different things like a people's culture, history, means of livelihood and others. Its loss also signifies the same. The most pressing in modern-day Nigeria is that the loss of arable land is synonymous with a loss of land for farming and grazing for livestock. This trend is quite worrisome and needs to be curbed. Forced migration and resettlement are other effects of desertification on communities.

Soil Deterioration- desertification in Yobe State has caused the degradation of the soil. This is the physical, chemical/ biological reduction in soil quality. Reduction in the amount of soil fertility and structure as a result of desertification has made it difficult for plant life to be sustained in Yobe State.

Water Shortage- Desertification has led to a shortfall in the amount of rainfall witnessed in Yobe State. Leading to a state of drought and dryness. The rapid evaporation of moisture from the surface has made it possible for farmers to have a good yield.[xxx]

Poverty- Farmers have incurred monumental losses because of this environmental crisis. Tons of farmlands are depleted, triggering the incidence of food shortages and hunger. Approximately ten farms belonging to Maigari Isa Bukar (village head) and his immediate family were lost to the advancing desert. To make matters worse, he was also displaced from his home.[xxxi]

Hunger- Agriculture for many years has been the mainstay of the people's economy. Many families and the Government are dependent on agriculture and agricultural practices for their continued survival.

Fall in Farm Output- Before the menace of desertification, some farmers could boast of an abundant harvest from their farmlands. Now, they can hardly get a bag of grain from their farms because of the deplorable state of agriculture in the area. The lack of green vegetation has also affected the rearing of livestock as the farmers and animals lack green vegetation for the animals. While starvation has claimed the lives of some of the livestock, others are unable to produce enough milk for the local communities and for export purposes too.[xxxii]

Overpopulation- the continued displacement of indigenes from some communities has caused the mass movement into unaffected communities. With this growth in the population has come an increase in the demand for land and cooking fuels.

**Rate of Desertification**

While speculations are rife about the rate at which desertification and its harmful effect are taking over Nigeria, recent data shows that Nigeria's desertification rate is among the highest in the world. It speculates that with the loss of over 55.75 of its forest annually, the country experiences approximately a desertification rate of 3.5% is about 350,000 and 400,000 hectares per year.[xxxiii]

It is estimated that the desert is encroaching into Yobe at the rate of about 0.6 kilometres per annum (0.37 miles) what this means is that every 3 years, the desert extends by 1.24 miles.[xxxiv]

**Measure Taken by Yobe State to curb Desertification.**

To curb the harmful effect of desertification, the African Union's Great Green Wall initiative was conceived in 2011 with the belief that it would revive the landscape and improve the living conditions of the people in the Sahel[xxxv]. By 2014, it kicked off in eleven states in Northern Nigeria. The major problem hampering the growth of this initiative is the lack of community involvement in the selection process, causing a disconnection in between the executioners and the communities. The Government has also embarked on an aggressive tree-planting exercise through the purchase of multiple seedlings.

## Recommendation

1. Erosion Control Measures[xxxvi]- As a matter of urgency,the government of Yobe State must cultivate habits to curb soil erosion by mulching, planting vegetation, and fixing anchoring devices.

2. Water Management Practices- Because of the high risk of desertification in Yobe State, efforts should be made to manage the state's water resources. The state should have an extensive plan to harvest and store rainwater. It should also as a matter of necessity reuse water that is still safe to be used.

3. Encourage the Planting of Trees- instead of the deforestation of the available trees for use as firewood and building purposes. The Government and people of Yobe State should pursue an active policy of conserving the available trees in the state. A policy of reforestation and regeneration would also help to curb this looming manace called desertification. For every tree felled, plans should be made to plant ten more. This would go a long way to introducing green vegetation into the communities and roll back the desert.

4. Buttressing the Soil- The residents of Yobe State must as a matter of principle reinforce the soil by building fences made from sand, windbreaks, and shelter belts.

5. Embrace better Agricultural Practices- During planting, the farmers should adopt safer agricultural practices like the hyper-fertilization of farmlands, crop rotation practices, use of the leaves of harvested plants to mulch the soil. This particular practice will increase the ability of the soil to retain water and decrease the evaporation process.

## Conclusion

Desertification may be one of the greatest causes of famine and poverty in the world today. The loss of these hitherto fertile lands is usually final and renders the inhabitant unable to plant or reap the gains of agriculture. Soil degradation has the potential of reducing the productivity of

the soil. It reduces the soil's ability to retain nutrients, water and components that support plant life.

Some practices are known to encourage the growth of this phenomenon. Chief among which is the indiscriminate felling of trees, and the practice of unwholesome farm practices. The growth of desertification needs to be discouraged at all levels by planting trees, practicing rotational grazing, managing and preserving the available water bodies and pursuing safe agricultural methods.

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